TRAFFIC IMPACT STUDY and

APPENDIX A THRU C

HAWANO
Case #: 3100 5566 (TM);
Environmental Log #: 93-19-006OO

Prepared For: The County of San Diego

Submitted To:
Paragon Management Company
4370 La Jolla Village Drive, Suite 640
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Prepared By:
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Signature: Bill E. Darnell
Date Signed: **12-5-11**

Revised: December 5, 2011
Revised: March 30, 2011
Original: July 6, 2010

Volume I of II

D&A Ref. No. 091201

Darnell & ASSOCIATES, INC.
TRANSPORTATION PLANNING & TRAFFIC ENGINEERING

December 5, 2011

Dan Berkus
Paragon Management Company
4370 La Jolla Village Drive, Suite 640
San Diego, CA 92122

D&A Ref. No: 091201

Subject: Revised Traffic Impact Analysis for the Proposed Hawano Industrial Business Park Development (TM 5566) Located on Approximately 79.6 Gross Acres (58.8 Net Useable Acres) in the East Otay Mesa Area of San Diego County.

Dear Mr. Berkus:

In response to the County of San Diego's July 17, 2011 comments, Darnell & Associates, Inc. (D&A) has revised our March 30, 2011 traffic impact study for the proposed Hawano Industrial Business Park Development (TM 5566) located on approximately 79.6 Gross Acres (58.8 Net Useable Acres) in the East Otay Mesa Area of San Diego County. The proposed project is bounded by Airway Road on the north, Via De La Amistad on the south, Airway Place on the west, and Alta Road on the east. A copy of D&A's written responses to each of the County's comments is provided directly behind this letter and in Appendix N.

This report analyzes the traffic impacts associated with the proposed project on local roadway segments and intersections under the following conditions: existing, existing plus phase 1, existing plus phases 1-2, cumulative (2020) with SR-905 Phases 1A & 1B with project, 2030 conditions without project, and 2030 plus phases 1-2 of the proposed project.

If you have any questions, please feel free to contact this office.

Sincerely,

Darnell & Associates, Inc.

Vicki S. Haskell

Vicki S. Haskell, P.E.
Principal Transportation Engineer
RCE 63754

REGISTERED PROFESSIONAL ENGINEER
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Darnell & ASSOCIATES, INC.
TRANSPORTATION PLANNING & TRAFFIC ENGINEERING

MEMORANDUM

DATE: December 5, 2011

TO: Dan Berkus, Paragon Management Company
Jeramey Harding, T&B Planning

FROM: Bill E. Darnell, P.E.
Vicki S. Haskell, P.E.

D&A Ref. No: 091201

RE: Hawano (TM 5566; ER 93-19-006OO) – Responses to County Comments Dated June 17, 2011

Darnell & Associates, Inc. (D&A) has reviewed the County of San Diego's June 17, 2011 comments on our March 30, 2011 Traffic Study for Hawano (TM 5566; ER 93-19-006OO). The attached table summarizes the County's comments and D&A's written responses to each of the comments. These responses have been incorporated into our December 2011 iteration of the traffic study.

Please feel free to contact the office if you have any questions.

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HAWANO (TM 5566, ER 93-19-006OO)
RESPONSES TO COUNTY OF SAN DIEGO JUNE 17, 2011 TRAFFIC RELATED COMMENTS

Item No.	Subject Area	Issue, Revision or Information Required	Issue Resolution Summary (Response To Comment)	Location where Revision can be Found in Revised Document
24-15	Traffic Study	The TIS should note that if there is a future change in the proposed phasing of the project's lot development plan that change could require revisions to the traffic analysis to determine if the change alters the project's impact and mitigation findings.	Comment is acknowledged. A note has been added to the trip generation section of the traffic study to indicate that if the phasing of the project's lot development plan changes, a new traffic study may be required to assess the potential changes to the project's impacts and mitigation findings.	Section II, Page 11
24-16	Traffic Study	The TIS should update the information regarding the SR-11 ramp interchanges (Pg.6). Caltrans has identified that the preferred SR-11 Interchange Alternative includes a full interchange at Enrico Fermi Drive and half interchange at Siempre Viva Road. It should be noted that until the SR-11 Final EIR is certified that the proposed SR-11 design is still subject to change.	The discussion on the SR-11 interchange has been accordingly updated, however, since the build out analysis is based on the assumptions included in the East Otay Mesa Specific Plan the buildout analysis still includes the SR-11 with the two full interchanges.	Section I, Page 6
24-17	Traffic Study	The consultant should review the identification of jurisdiction for the roadway segments (Ex. Table 5). Some study area roadway segments appear to be located within both the City and County jurisdictions although not indicated in the TIS table (Ex Otay Mesa Road from Sanyo Avenue to Enrico Fermi Drive)	The jurisdictions of the roadway segments have been updated accordingly.	Tables 5, 13,17,25, and 31
24-18	Traffic Study	Figure 35 (Pg.90) should create a designation for improvements up to the 4 lane Major standard (as identified by note "B" for Siempre Viva Road).	The intent of Figure 35 was to show that the project traffic could be accommodated by something less than the ultimate requirements of the Specific Plan. However, the graphic has been revised to reflect the ultimate requirements consistent with the Specific Plan requirements.	Figure 35
24-19	Traffic Study	Table 26 (Pg.88) classifications for Siempre Viva Road for Phases 1-2 should be identified as 4M (Major road) as indicated in footnote "c".	The intent of Table 26 was to show that the project traffic could be accommodated by something less than the ultimate requirements of the Specific Plan. However, the table has been revised to reflect the ultimate requirements consistent with the Specific Plan requirements.	Table 26
24-20	Traffic Study	The traffic consultant should coordinate with DPW Conditioning staff to confirm the project's required frontage and onsite road improvements are consistent with the Subdivision Ordinance and the East Otay Mesa Specific Plan. Onsite Circulation Element roads such as Siempre Viva Road would require full/ultimate improvements. For example, Table 26 indicates the onsite segment of Siempre Viva Road would be built to 2-lane Light Collector standards and that the applicant would dedicate and provide security for the full width Major Road improvements. Compliance with the Subdivision Ordinance would require that the onsite segment of Siempre Viva Road be improved to a 4-lane Major Road design prior to the Final Map for Phase 2.	The Tables and Figures describing the on-site circulation have been updated to reflect that upon completion of Phase 2 of the project all circulation element roads will be built out to their full circulation element standards.	Figure 35 and Table 26
24-21	Traffic Study	The TIS (Pg.103/104) should note that mitigation in the City of San Diego is required to be in place prior to Final Map for Phase One (not building permits) for the intersection improvements to Airway Road/Sanyo Avenue and Siempre Viva Road/Michael Faraday Drive.	The cumulative impact mitigation measures for Airway Road/Sanyo Avenue and Siempre Viva Road/Michael Faraday Drive have been revised accordingly.	Section VIII

HAWANO (TM 5566, ER 93-19-006OO)
RESPONSES TO COUNTY OF SAN DIEGO JUNE 17, 2011 TRAFFIC RELATED COMMENTS

Item No.	Subject Area	Issue, Revision or Information Required	Issue Resolution Summary (Response To Comment)	Location where Revision can be Found in Revised Document
24-22	Traffic Study/ Internal Access Roads - Phase I	The TIS should assess access alternatives that are consistent with the Specific Plan design standards for minimizing median cuts along Gateway roads. The proposed lot redesign for Phase 1 results in primary access (Hawano Drive North) onto Siempre Viva Road, which is a Circulation Element (CE) road and a Specific Plan Gateway road. The Hawano Drive North connection would require full access and a median cut opening along Siempre Viva Road. For Gateways roads classified as Major Roads, median cuts should be minimized according to the Specific Plan. The TIS indicates (Table 25) that Siempre Viva Road is projected to carry the highest volume of daily traffic when compared to the project's other frontage roads. Primary access onto Siempre Viva Road for the Phase 1 lots could create intersection design challenges due to the higher daily traffic volumes.	On October 7, 2011 The County of San Diego approved a Design Exception request which supported the proposed project design.	Appendix M
24-23	Traffic Study/ Internal Access Roads - Phase I	The TIS should assess access alternatives that reduce the number of proposed direct access points along Alta Road which is a Circulation Element (CE) road. The proposed lot redesign for Phase 1 would create three or more driveways along Alta Road between Airway Road and Siempre Viva Road. Direct access onto CE roads should be minimized to the extent possible. The access alternatives should assess lot design that would require less than four access points along Alta Road.	See Response to Item 24-22	Appendix M
24-24	Traffic Study/ Internal Access Roads - Phase I	The access alternatives should explore project access onto Airway Place, which is non-CE/Gateway road with relatively low projected traffic volumes.	See Response to Item 24-22	Appendix M
24-25	Traffic Study/ Internal Access Roads - Phase I	The TIS should discuss the adequacy of the proposed cul-de-sac design for Hawano Drive North in accommodating projected Phase 1 traffic. The proposed lot redesign for Phase 1 includes Hawano Drive North which has lengthy cul-de-sac design. The TIS indicates (Table 27) that Hawano Drive North will carry up to 5,500 trips per day which exceeds the 4,500 ADT threshold for a non-CE road and far exceeds the capacity assumption for a cul-de-sac as identified in the County's Public Road Standards.	See Response to Item 24-22	Appendix M
24-26	Traffic Study/General Information	Pending evaluation and approval of the project's Preliminary Drainage Study and Stormwater Management Plan, further improvements may be required to the surrounding area as mitigation for drainage impacts caused by this project.	Comment is acknowledged; no response is necessary.	N/A

TRAFFIC IMPACT STUDY

FOR

HAWANO
CASE #: 3100 5566 (TM);
ENVIRONMENTAL LOG #: 93-19-006OO

IN THE COUNTY OF SAN DIEGO

Submitted To:

Paragon Management Company
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Prepared by:

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December 5, 2011
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EXECUTIVE SUMMARY

The applicant proposes to develop the Hawano Industrial Business Park Development on a 79.6 gross acre site (58.8 net useable acres) located in the East Otay Mesa Area of San Diego County. The proposed project is bounded by Airway Road on the north, Via De La Amistad on the south, Airway Place on the west, and Alta Road on the east. Based on the net acres for the site and a proposed floor area ratio (FAR) of 0.33, the proposed project will consist of approximately 852,426 square feet of business park use. It is anticipated that the project will be developed in two phases. Phase 1 of the project comprises of approximately 432,682 square feet of business park use on 30.0 net useable acres and is proposed to be completed in the year 2013. Phase 2 of the project comprises of approximately 419,744 square feet of business park use on 28.8 net useable acres and is proposed to be completed in the year 2014.

As this report will show, Phase 1 of the proposed project is estimated to generate 6,923 average daily trips (ADT), 831 morning peak hour trips, and 831 afternoon peak hour trips. Full build out the project (Phases 1-2) is estimated to generate 13,639 ADT, 1,637 AM peak hour trips, and 1,637 PM peak hour trips.

This report analyzes the traffic impacts associated with the proposed project on the roadway segments and intersections under the following conditions: existing, existing plus phase 1, existing plus phases 1-2, cumulative (2020) with SR-905 phases 1A & 1B with project, 2030 without project, and 2030 plus phases 1-2 of the proposed project.

This report will show that the project is part of significant direct and cumulative impacts in the City and County of San Diego. See Section VIII for a summary of the measures the developer will take to mitigate for the project's direct and cumulative impacts.

SECTION I – INTRODUCTION

PROJECT DESCRIPTION

The applicant proposes to develop the Hawano Industrial Business Park Development on a 79.6 gross acre site (58.8 net useable acres) located in the East Otay Mesa Area of San Diego County. The proposed project is bounded by Airway Road on the north, Via De La Amistad on the south, Airway Place on the west, and Alta Road on the east. Based on the net acres for the site and a proposed floor area ratio (FAR) of 0.33, the proposed project will consist of approximately 852,426 square feet of business park use. Figure 1 shows the regional location of the project and Figure 2 shows the proposed site plan.

It is anticipated that the project will be developed in two phases. Phase 1 of the project comprises of approximately 432,682 square feet of business park use on 30.0 net useable acres and is proposed to be completed in the year 2013. Phase 2 of the project comprises of approximately 419,744 square feet of business park use on 28.8 net useable acres and is proposed to be completed in the year 2014.

As discussed in Section II, Phase 1 of the proposed project is estimated to generate 6,923 average daily trips (ADT), 831 morning peak hour trips, and 831 afternoon peak hour trips. Full build out the project (Phases 1-2) is estimated to generate 13,639 ADT, 1,637 AM peak hour trips, and 1,637 PM peak hour trips.

CONGESTION MANAGEMENT PROGRAM

Based on the approval of Proposition 111 in 1990, regulations require the preparation, implementation, and annual updating of a Congestion Management Program (CMP) in each of California's urbanized counties. The original CMP for the San Diego region was adopted in 1991 and has been updated periodically as an element of the Regional Transportation Plan (RTP). One required element of the CMP is a process to evaluate the transportation and traffic impacts of large projects on the regional transportation system. That process is undertaken by local agencies, project applicants, and traffic consultants through a transportation impact report usually conducted as part of the CEQA project review process. Authority for local land use decisions including project approvals and any required mitigation remains the responsibility of local jurisdictions. The criteria for which a project is subject to the regulations as set forth in the CMP are determined by the trip generation potential for the project. Currently, the average daily traffic (ADT) threshold is 2,400 vehicles or 200 peak hour trips. Build out of the project (phases 1-2) will generate 13,639 average daily trips, 1,637 morning peak hour trips, and 1,637 afternoon peak hour trips (see Section II Project Related Conditions). Since the total trips generated by proposed project are greater than the CMP threshold, the project is subject to CMP guidelines for traffic impact studies. Therefore, this traffic study has been prepared to comply with the CMP guidelines for traffic impact studies. It should be noted that in the Fall of 2009 SANDAG decided to opt out of the CMP.

SCHEDULED OR PROGRAMMED ROAD IMPROVEMENT PROJECTS

Capital Improvement Projects

The current County of San Diego's 5-Year Capital Improvement Plan 2010/11 – 2014/15 includes the following three roadway segments within the East Otay Mesa area: (1) Construction of Additional Lanes on Airway Road between Michael Faraday Drive and Enrico Fermi Drive; (2) Construction of Lone Star Road from Alta Road to the west for 0.5 miles (to Enrico Fermi Drive), and (3) Widening Otay Mesa Road from Vann Centre Boulevard to Enrico Fermi Drive. Funding for the Airway Road improvements are anticipated to come from Transportation Impact fees, the schedule for completion is to be determined. The funding for the Lone Star Road improvements are anticipated to come from Federal Funds and Transportation Impact Fees, the schedule for completion is to be determined. The schedule and funding for the Otay Mesa Road widening project are still to be determined. See excerpts from the CIP in Appendix B for more details on each of these projects.

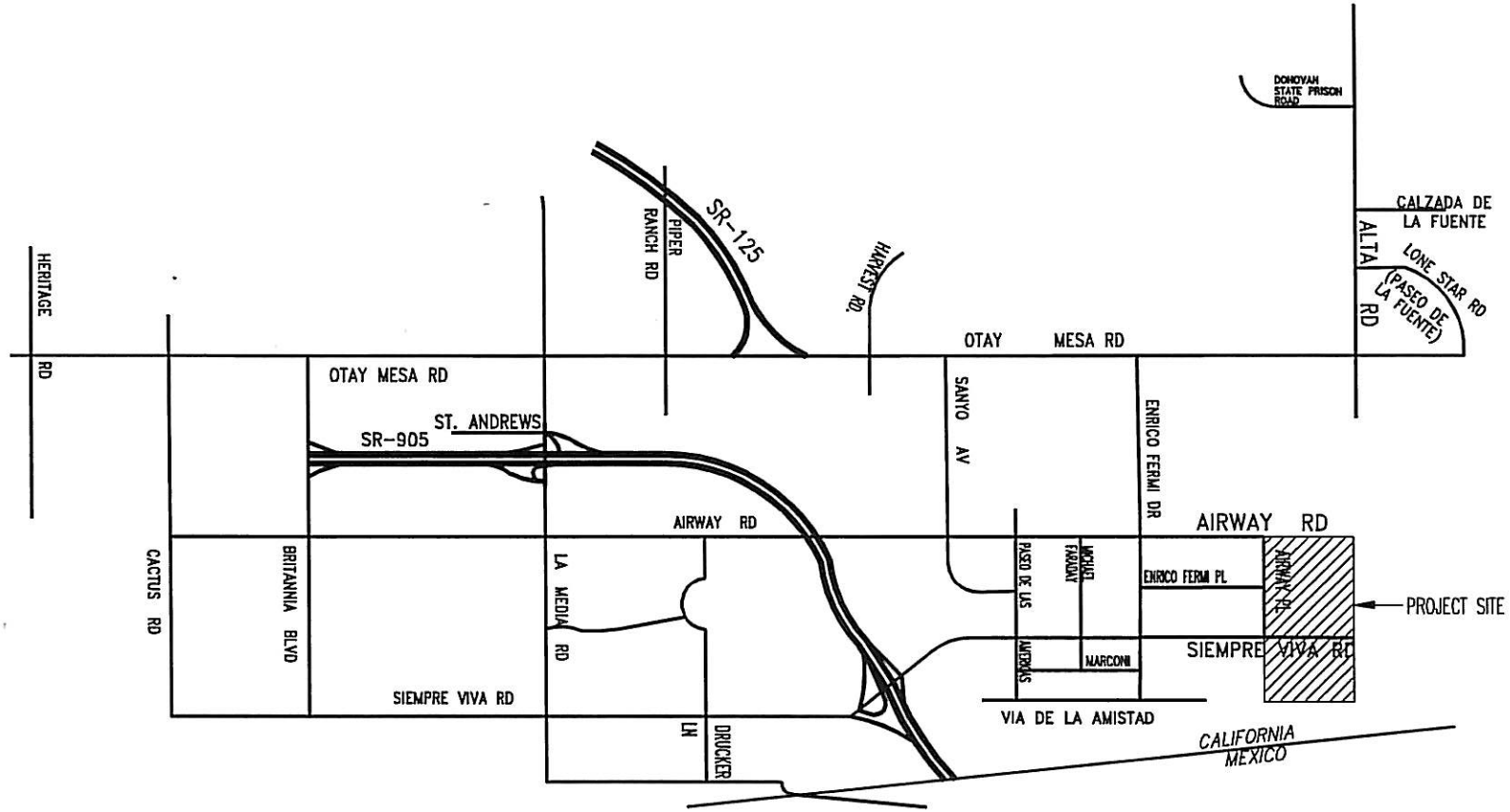

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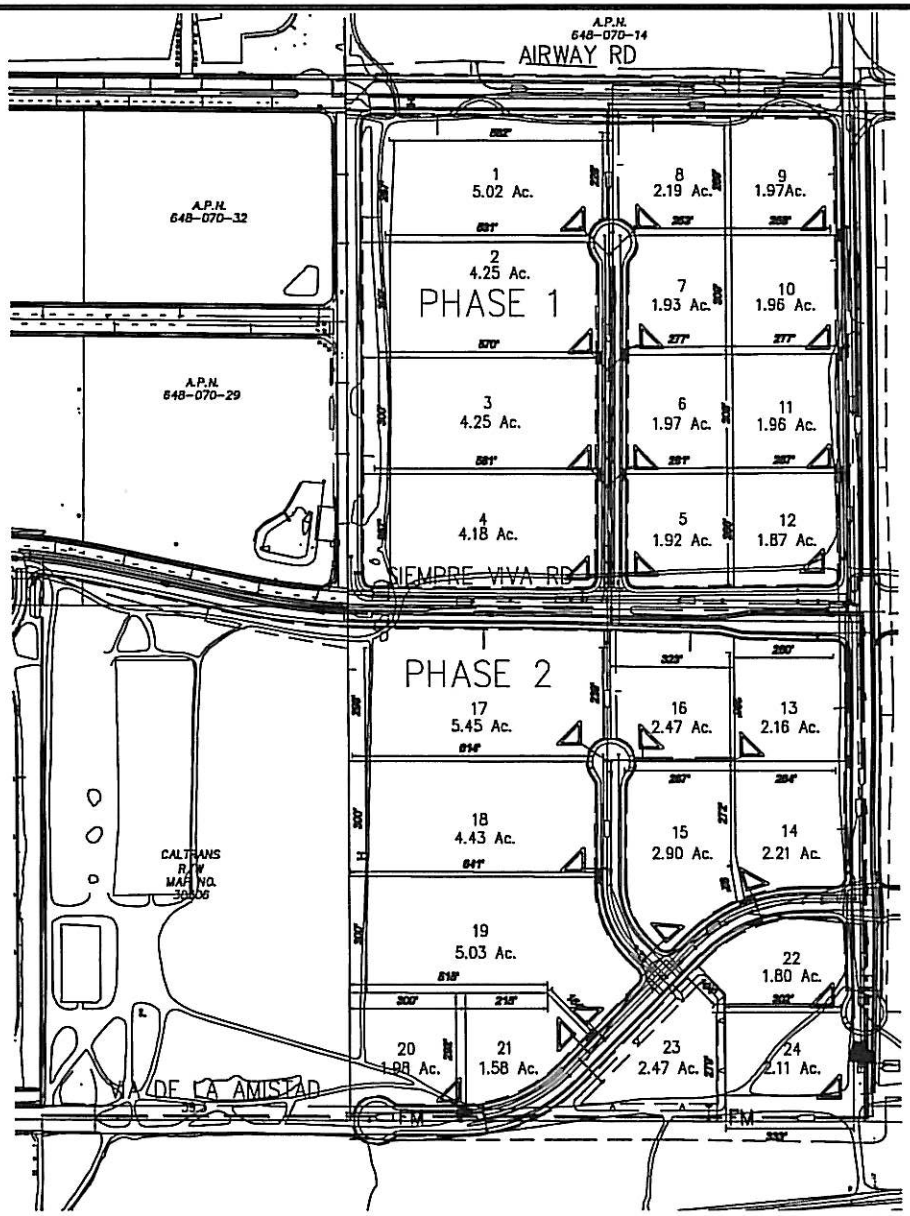
FIGURE 1
VICINITY MAP



USEABLE NET ACREAGE TABLE	
LOT NUMBER	ACREAGE
1	3.8
2	3.9
3	4.0
4	3.90
5	1.7
6	1.9
7	1.9
8	1.8
9	1.7
10	1.9
11	1.9
12	1.7
13	1.7
14	2.1
15	2.8
16	2.0
17	4.3
18	4.3
19	4.9
20	1.9
21	1.5
22	1.8
23	N/A
24	1.9
TOTAL NET USABLE	58.8

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FIGURE 2
SITE PLAN

Caltrans' Projects

Caltrans currently has two (2) major State Route facility projects in the Otay Mesa Area: (1) State Route 905 and (2) State Route 11. In addition, during the construction of the structures at the State Route 905/Airway Road intersection, Caltrans implemented a detour to re-route traffic via Sanyo Avenue and Otay Mesa Road. As mitigation of the detour, Caltrans was required to improve the Otay Mesa Road/Sanyo Road intersection and the segments of Otay Mesa Road between Harvest Road and Sanyo Avenue, and Sanyo Avenue between Otay Mesa Road and Airway Road. The following summarizes the project description and schedule for each of these projects. (A copy of Caltrans' Fact sheets for the SR-905 and SR-11 projects is provided in Appendix B.)

1. ***State Route 905*** – The State Route 905 (SR-905) project will consist of constructing a transportation facility from Interstate 805 to the Otay Mesa Port of Entry (POE) at the US-Mexico Border. Project alternatives under study include a variable alignment of a six lane freeway alternative that would run parallel and roughly 1,300 feet to the south of the existing Otay Mesa Road, and a six lane toll way. The project will include grade separated local access interchanges with SR-125. The portion of the project from the Otay Mesa POE to Airway Road began construction in January 2003. As a part of this project the SR-905/Siempre Viva Road grade separated interchange was completed and opened to traffic in 2005. The remainder of the project has been divided into 4 phases. In discussions with Caltrans, it has been determined that the SR-905 facility would be constructed in the following four phases:

    - **Phase 1:** Phase 1 consists of two phases, namely Phase 1A (east) and Phase 1B (west). Phase 1A would consist of a six-lane facility between Britannia Boulevard and the Otay Mesa Port of Entry with a full interchange at SR-905/La Media Road and ramps on the eastern side of Britannia Boulevard. Roadway improvements will be made along Otay Mesa Road, Airway Road, Sanyo Avenue, and Harvest Road. Phase 1B consists of a six-lane facility between Caliente Avenue and Britannia Boulevard. Phase 1B includes an interchange at Caliente Avenue and ramps on the western side of Britannia Boulevard. Construction of Phase 1A began in April 2008 and was opened to traffic in December 2010. Phase 1B is fully funded and secured with the majority of the funding coming from the American Recovery & Reinvestment Act funding. Construction of Phase 1B began in July 2009 and is scheduled to be completed by summer 2012.

        - ***Britannia Boulevard Improvements:*** As part of the construction of Phase 1A, Caltrans made improvements to Britannia Boulevard between Otay Mesa Road and the curb return on the north side of Airway Road. The Caltrans improvements to Britannia Boulevard improved the cross-section of the segment of Britannia Boulevard between Otay Mesa Road and the curb return on the north side of Airway Road to the equivalent of a Prime Arterial. The improvements included signalization of the SR-905/Britannia Boulevard ramps. See Appendix L for Caltrans striping concept of Britannia Boulevard.

        - ***La Media Road Improvements:*** As part of the construction of Phase 1A, Caltrans improved the segments of La Media Road between Otay Mesa Road and approximately 300 feet (300') south of the proposed SR-905 eastbound ramp. The Caltrans improvements to La Media Road improved the cross-section of the segment of La Media Road between Otay Mesa Road and the SR-905 ramps (approximately St. Andrews Avenue) to the equivalent of a 4-lane Collector. The improvements included signalization of the SR-905/La Media Road ramps. See Appendix L for Caltrans striping concept of La Media Road.

        - ***Airway Road Improvements:*** As part of the construction of Phase 1A, Caltrans also completed improvements to Airway Road from approximately 700 feet west of Harvest Road to approximately 600 feet west of Sanyo Avenue. The Caltrans

improvements to Airway Road improved the cross-section of the segment of Airway Road from approximately 700 feet west of Harvest Road to approximately 600 feet west of Sanyo Avenue to the equivalent of a 4-lane Major Road. See Appendix L for Caltrans striping concept of Airway Road.

- **Phase 2**: Phase 2 consists of improvements at the interchange at Interstate 805 (I-805)/SR-905 that includes construction of the westbound SR-905 to northbound I-805 connector from SR-905. An auxiliary lane will also be constructed along northbound I-805 between SR-905 and Palm Avenue. This Phase will also include widening of the Del Sol Boulevard under crossing. Phase 2 of the SR-905 including the connection to Interstate 805 has been funded through the Transportation Investment Generating Economic Recovery Grant (TIGER) award.

- **Phase 3:** Phase 3 consists of construction of the interchange at SR-125/SR-905. Phase 3 is not currently funded.

- **Phase 4:** Construction of the interchange at Heritage Road. Phase 4 is not currently funded.

See Appendix B for the SR-905 Status Update and fact sheets provided by Caltrans.

2. ***State Route 11*** – The State Route 11 (SR-11) project will consist of constructing approximately two miles of a new four-lane toll highway from the proposed SR-905/SR-125 junction to the future Federal Port of Entry (POE) at east Otay Mesa in San Diego County. An environmental study for the SR-11 program has been completed and a second study for the project was released for public review at the end of 2010 with final completion anticipated in the fall of 2011. The current schedule calls for the SR-11 breaking ground in 2012/2013 and opening in 2014/2015, contingent on full funding. Caltrans has identified that the preferred interchange alternatives for the SR-11 include a full interchange at Enrico Fermi Drive and a half interchange at Siempre Viva Road. However, until the Final EIR is certified, the proposed SR-11 design is still subject to change.

   In the traffic analysis and study, the SR-11 facility and the POE at the third border crossing were assumed to be constructed and operational only under the 2030 conditions. Since the Final EIR for the SR-11 has not yet been certified, the 2030 analysis contained within this report was based on the assumptions contained in the *East Otay Mesa Business Park Specific Plan* dated September 15, 2010. Appendix B contains the Caltrans fact sheet for the SR-11 project.

Planned State Route SR-11 along with the completion of all phases of SR-905 are critical to accommodating the build out of future development of the entire Otay Mesa area. It should be noted that the SR-125 facility is a major roadway project in the Otay Mesa area that was completed and opened to traffic in November 2007. In addition, Phase 1A of the SR-905 was just recently completed and opened to traffic in December 2010. All traffic counts and existing conditions included within this traffic study include the completion and operation of the SR-125 and Phase 1A of the SR-905.

EAST OTAY MESA SPECIFIC PLAN HISTORY

The following summarizes the history of the revisions that have occurred to the East Otay Mesa Specific Plan (EOMSP) since it was originally approved by the County of San Diego Board of Supervisors on July 27, 1994.

- **July 27, 1994** - Specific Plan (SP) 93-004 was approved by the Board of Supervisors. Created the East Otay Mesa Specific Plan Area

- **January 13, 1999** – First Amendment to the East Otay Mesa Specific Plan (SPA 98-002) was approved by the Board of Supervisors. Allowed for the Sale of Gasoline in Support Commercial Areas.

- **June 12, 2002** – Second Amendment to the East Otay Mesa Specific Plan (SPA 00-005) was approved by the Board of Supervisors. Updated the Land Use plan and permit processing requirements and split the Specific Plan Area into Subareas 1 and 2.

- **February 2, 2005** – Third Amendment to the East Otay Mesa Specific Plan (SPA 04-002) was approved by the Board of Supervisors. Revised the public landscaping requirements.

- **November 2, 2005** – Fourth Amendment to the East Otay Mesa Specific Plan (SPA 05-005) was approved by the Board of Supervisors. Revised the parking requirements to conform to the standards for Subarea 2.

- **August 1, 2007** – Fifth Amendment to the East Otay Mesa Specific Plan (SPA 06-003) was approved by the Board of Supervisors. Updated the East Otay Mesa (EOM) Specific Plan Circulation Plan, Bicycle Network, Sidewalk Standards, Fencing Requirements, and other minor items; the General Plan Circulation Element (GPA 06-013) and the Bicycle Transportation Plan.

- **April 8, 2009** – Sixth Amendment to the East Otay Mesa Specific Plan (SPA 06-005) was approved by the Board of Supervisors. Included minor amendments to the land use plan, the landscaping plan, and development standards in Subarea 1.

- **September 15, 2010** –Seventh Amendment to the East Otay Mesa Specific Plan (SPA 10-001) was approved by the Board of Supervisors. This amendment recombined Subarea 1 and Subarea 2, modified the Specific Plan boundary in response to a voter initiative, and made minor revisions to the Circulation Plan, Land Use Plan and regulatory provisions.

As of the date of this study the September 15, 2010 East Otay Mesa Specific Plan Amendment (SPA 10-001) is the most current approved amendment, and has thus been utilized as the basis for the analysis within this report. Excerpts from the September 15, 2010 East Otay Mesa Specific Plan Amendment (SPA 10-001) is provided in Appendix B.

SCENARIOS STUDIED

The following traffic scenarios were analyzed in this report:

Existing (Year 2011) Conditions refers to that condition which exists on the ground today, including existing traffic counts and existing lane configurations at intersections and on roadway segments. As previously noted, the existing conditions analysis includes the completion of Phase 1A of the SR-905.

Existing (Year 2011) Plus Phase 1 Project Conditions refers to those conditions which includes the existing traffic volumes and lane configurations plus the traffic generated by Phase 1 of the proposed project.

Existing (Year 2011) Plus Build Out of the Project (Phases 1-2) Conditions refers to those conditions which includes the existing traffic volumes and lane configurations plus the traffic generated by full build out (Phases 1-2) of the proposed project.

Cumulative (Year 2020) with SR-905 [Phases 1A & 1B] With Project Conditions refers to that condition which is anticipated to exist by the year 2020. This condition assumes Phases 1A and 1B of the SR-905 facility are constructed and operational. The traffic forecast for this scenario has been prepared utilizing a SANDAG Series 11 model assuming development within the Otay Mesa area of San Diego County would continue to grow based on the high scenario growth rate per the Economics Research Associates (ERA) *Addendum to Real Estate Market Analysis.* This scenario assesses the cumulative impacts with the development of 11.46% of the Hawano project site. (See Section V for more details on the SANDAG 2020 modeling assumptions.)

Year 2030 Conditions refers to the conditions and traffic volumes that will exist under 2030 conditions without the proposed project. All roadway segments were assumed to be built out to their classifications as identified in the *East Otay Mesa Business Park Specific Plan*, as Amended by SPA 10-001 approved by the County Board of Supervisors on September 15, 2010. Traffic forecasts for the year 2030 were based on the August 12, 2010 *Traffic Impact Analysis [for] East Otay Mesa Specific Plan Amendment SPA 10-001, Log No. 93-19-006MM* prepared by Linscott Law & Greenspan Engineers (LL&G). Since the proposed project is consistent with the EOMSP, the 2030 condition includes the traffic generated by the proposed project. Therefore, project traffic was subtracted to get the 2030 conditions analysis.

Year 2030 with Project Conditions refers to those conditions which includes the 2030 traffic volumes and lane configurations plus the traffic generated by full build out (Phases 1-2) of the proposed project.

LEVEL OF SERVICE

Level of Service (LOS) is a professional industry standard by which the operating conditions of a given roadway segment or intersection is measured. Level of Service is defined on a scale of A to F; where LOS A represents the best operating conditions and LOS F represents the worst operating conditions. LOS A facilities are characterized as having free flowing traffic conditions with no restrictions on maneuvering or operating speeds; traffic volumes are low and travel speeds are high. LOS F facilities are characterized as having forced flow with many stoppages and low operating speeds. Table 1 shows the delay, miles per hour (mph), and ADT ranges that are equivalent to each Level of Service.

Table 1 – Level of Service Ranges				
LOS	Intersections		Roadway Segments[3]	
			Daily	Peak Hour
	Signalized -Delay (sec/veh)[1]	Unsignalized Delay (sec/veh)[1]	Average Daily Traffic (ADT)[2]	Arterial Avg. Travel Speed (mph)
A	Less than or equal to 10.0	Less than or equal to 10.0	Less than 1,900	Greater Than 35
B	10.1 to 20.0	10.1 to 15.0	1,901 to 4,100	Greater Than 28 to 35
C	20.1 to 35.0	15.1 to 25.0	4,101 to 7,100	Greater Than 22 to 28
D	35.1 to 55.0	25.1 to 35.0	7,101 to 10,900	Greater than 17 to 22
E	55.1 to 80.0	35.1 to 50.0	10,901 to 16,200	Greater than 13 to 17
F	Greater than 80.0	Greater than 50.1	Greater than 16,200	Less Than or Equal to 13

[1] The delay ranges shown are based on the 2000 Highway Capacity Manual (HCM)
[2] The volume ranges are based on the County of San Diego Circulation Element of a Light Collector, the average daily volume ranges for the other roadway classifications has been provided in Appendix A.
[3] The average travel speeds shown are based on the 2000 HCM.
LOS = Level of Service; mph = miles per hour; sec/veh=seconds per vehicle;

In general, the region-wide goal for an acceptable Level of Service on all roadway segments and intersections is "D."

According to page XII 4-16 and XII-4-17 of the San Diego County General Plan Public Facility Element "A LOS 'C', which allows for stable traffic flow with room to maneuver, is generally an accepted level to strive for in new development. However, there are some cases where development cannot achieve a LOS 'C' on off-site roadways. For instance, there are areas where the existing development pattern precludes the addition of lanes or other mitigation or when the community is opposed to certain improvements to maintain a LOS 'C'. In these cases a Level of Service 'D' is acceptable on off-site roadways." A copy of excerpts from the County's Public Facility Element can be found in Appendix A.

ANALYSIS METHODOLOGY

Even though the proposed project lies within the County of San Diego, the roadway segments in the vicinity of the proposed project are located in both the jurisdictions of the County and City of San Diego. Therefore, for the purpose of this report, the daily traffic volumes of the roadway segments in the vicinity of the project were compared to the County or City of San Diego Level of Service classification thresholds, depending on whether the roadway segment is located within the County's or City's jurisdiction.

The daily (24 hour) traffic count sheets, a copy of the City of San Diego "Roadway Classifications, Levels of Service, and Average Daily Traffic," and a copy of the "Summary of County of San Diego Public Road Standards" are included in Appendix A.

The arterial roadway segment levels of service analysis for the segments of Interim SR-905 (Otay Mesa Road) were determined using the Synchro, version 6 software. The arterial roadway segment level of service analysis methodology utilized by Synchro is based on the 2000 Highway Capacity Manual (HCM).

The levels of service for the freeways (SR-125, SR-905 south of Otay Mesa Road, and the new SR-905) were determined based on the California Department of Transportation (Caltrans) District 11 procedures. Caltrans determines the level of service for freeways based on the volume-to-capacity ratio which considers the variables such as the peak hour volume of traffic, the number of travel lanes, the directional split of traffic, and percentage of heavy vehicles.

Synchro, version 6, was utilized to analyze the morning and afternoon peak hour conditions of the intersections in the project vicinity. The signalized intersection methodology defines LOS based on delay using variables such as lane configuration, traffic volumes, and signal timings. The unsignalized intersection methodology defines LOS based on the longest delay experienced by any single movement. Since the Synchro program calculates the average delay per vehicle, there may be instances where the Synchro analysis will show a reduction in delay with the addition of more traffic. This phenomenon occurs when the additional traffic is added to a movement that experiences a shorter amount of delay, thereby decreasing the intersection's average delay per vehicle (i.e. a larger amount of vehicles will have to wait a shorter time while only a few vehicles have to wait an extended period of time). It should be noted that the Synchro program is based on the 2000 Highway Capacity Manual (HCM).

It should be noted the Airway Road/Sanyo Avenue intersection is currently an all-way stop-controlled intersection with three (3) westbound approach lanes (1 left, 1 through, and 1 right). The Highway Capacity Manual (HCM) and Synchro software, however, do not currently provide an analysis methodology to analyze an all-way stop-controlled intersection with more than two (2) approach lanes. Therefore, for analysis purposes, the westbound approach was assumed to have one (1) westbound shared left-through lane and one (1) westbound right turn lane. This results in a delay that is slightly larger than what would be experienced in the field.

Since SR-905 and SR-125 are state owned facilities, to meet the requirements of Caltrans, the Intersecting Lane Vehicles (ILV) analysis was utilized to assess the operating conditions of the intersections along Otay Mesa Road (Interim SR-905) between Heritage Road and the SR-905 connector and the intersections of SR-905 at Siempre Viva Road. Since the control/ownership of Otay Mesa Road (Interim SR-905) between Heritage Road and the SR-905 connector will be relinquished to the City of San Diego once Phase 1B of the new SR-905 facility is constructed, the ILV analysis was only completed for these intersections under existing and existing plus project conditions. It should be noted that the ILV analysis is only applicable to signalized intersections.

The Intersecting Lane Vehicle method determines the operating condition of an intersection based upon the number of intersecting vehicles that enter the intersection per lane during the hour (ILV/hr). Where less than 1200 ILV/hr represents stable flow, 1200 to 1500 ILV/hr represents unstable flow with considerable delays possible, and 1500 ILV/hr represents capacity, or stop-and-go operation with severe delay and heavy congestion. Since the upper limits of the ILV analysis is based on the premise of an operating condition of LOS C or better, and since LOS D was considered an acceptable level of service, the ILV analysis was not utilized to determine project significance.

REPORT ORGANIZATION

Following this section, Section II examines the potential trips generated by the proposed project and it defines the trip distribution assumptions. Section III evaluates the existing roadway characteristics and traffic conditions without the project. Section IV provides analysis of project's traffic impacts under existing with project conditions. Section V provides analysis of cumulative (2020) with SR-905 (Phases 1A & 1B) conditions. Section VI describes the 2030 conditions, Section VII addresses the project's access and internal circulation, Section VIII summarizes the direct and cumulative impacts of the project and provides mitigation measures, and Section IX summarizes the report findings and conclusions.

SECTION II – PROJECT RELATED CONDITIONS

TRIP GENERATION

The trip generation potential for the project was based on daily and peak hour trip generation rates obtained from the *(Not So) Brief Guide of Traffic Generators for the San Diego Region* published by the San Diego Association of Governments (SANDAG) in April 2002.

Table 2 summarizes the trip generation for the proposed project. As shown in Table 2, Phase 1 of the proposed project is estimated to generate 6,923 average daily trips (ADT), 831 morning peak hour trips, and 831 afternoon peak hour trips. Full build out the project (Phases 1-2) is estimated to generate 13,639 ADT, 1,637 AM peak hour trips, and 1,637 PM peak hour trips. It should be noted that if there is a future change in the proposed phasing of the project's lot development plan that would impact the phasing of the project, a new traffic impact study may be required to determine how it may impact the project's potential traffic impacts (i.e. the timing of the project impact, or even the scale of the impact may be potentially impacted based on the project's phasing).

Table 2 – Trip Generation Rates and Calculations Summary

Trip Generation Rates

Land Use	Daily	AM Peak Hour			PM Peak Hour		
		Total- % of Daily	%In	%Out	Total – % of Daily	%In	%Out
Business Park	16 Trips /KSF	12%	80%	20%	12%	20%	80%

Trip Generation Calculations

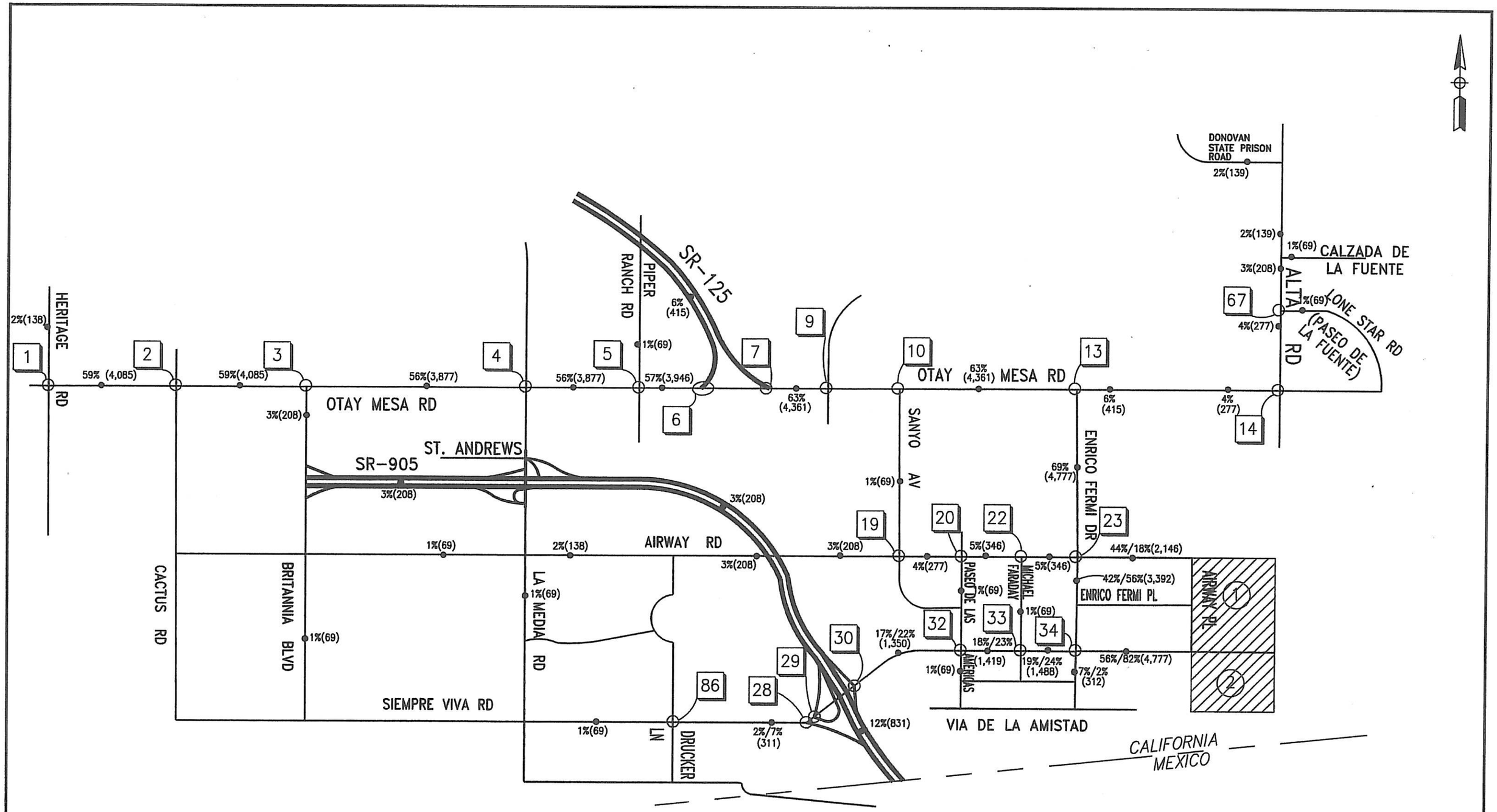
Land Use	Total No Of Units (KSF)	Daily	AM Peak Hour			PM Peak Hour		
			Total	In	Out	Total	In	Out
Phase 1	432.682[(a)]	6,923	831	665	166	831	166	665
Phase 2	419.744[(a)]	6,716	806	645	161	806	161	645
Grand Total Phases 1-2:	**852.426 [(a)]**	**13,639**	**1,637**	**1,310**	**327**	**1,637**	**327**	**1,310**

KSF= 1,000 square feet
(a) Square Footage is estimated based on the Net Acreage of the Project Site (30.0 Net Useable Acres for Phase 1, 28.8 Net Useable Acres for Phase 2, for a Grand Total of 58.8 Net Useable Acres) and a Proposed Floor Area Ratio (FAR) of 0.33
Source: SANDAG's *(Not So) Brief Guide of Traffic Generators for the San Diego Region*, April 2002

TRIP DISTRIBUTION/TRIP ASSIGNMENT

The project trip distribution was estimated for the following scenarios: existing, cumulative (2020) with SR-905 Phases 1A &1B, and 2030 conditions. The trip distribution percentages were estimated based on the SANDAG Select Zone forecast for an adjacent parcel of land with the exact same land use.

The trip distribution percentages and project related traffic under existing roadway conditions for Phase 1 and Phases 1-2 are illustrated in Figures 3-6. Figures 7 -10 illustrate the trip distribution percentages and project related traffic volumes for the Hawano project under cumulative (2020) with SR-905 [1A & 1B] conditions. Since, as discussed later in Section V of this report, the Hawano project is only included in the cumulative (2020) conditions based on 11.46% of its planned development, the project traffic volumes shown in Figures 7 and 8 illustrate what would be generated by only 11.46% of the proposed project while the project traffic volumes shown in Figures 9 and 10 illustrate what would be generated by 100% (or the total of Phases 1-2) of the proposed project. Figure 11 illustrates the trip distribution percentages and project related traffic volumes for Phases 1-2 under 2030 conditions.



LEGEND

- ▨ – PROJECT SITE
- ●VV%/WW% – IN/OUT DISTRIBUTION PERCENTAGE
- ●(Z,ZZZ)– AVERAGE DAILY TRAFFIC
- (XX) – PHASE OF DEVELOPMENT
- [XX] – INTERSECTION ID NUMBERS, SEE FIGURE 4 FOR INTERSECTION DISTRIBUTION PERCENTAGES & AM/PM PEAK HOUR VOLUMES.

NOTE: INTERSECTION NUMBERS ARE NOT SEQUENTIAL

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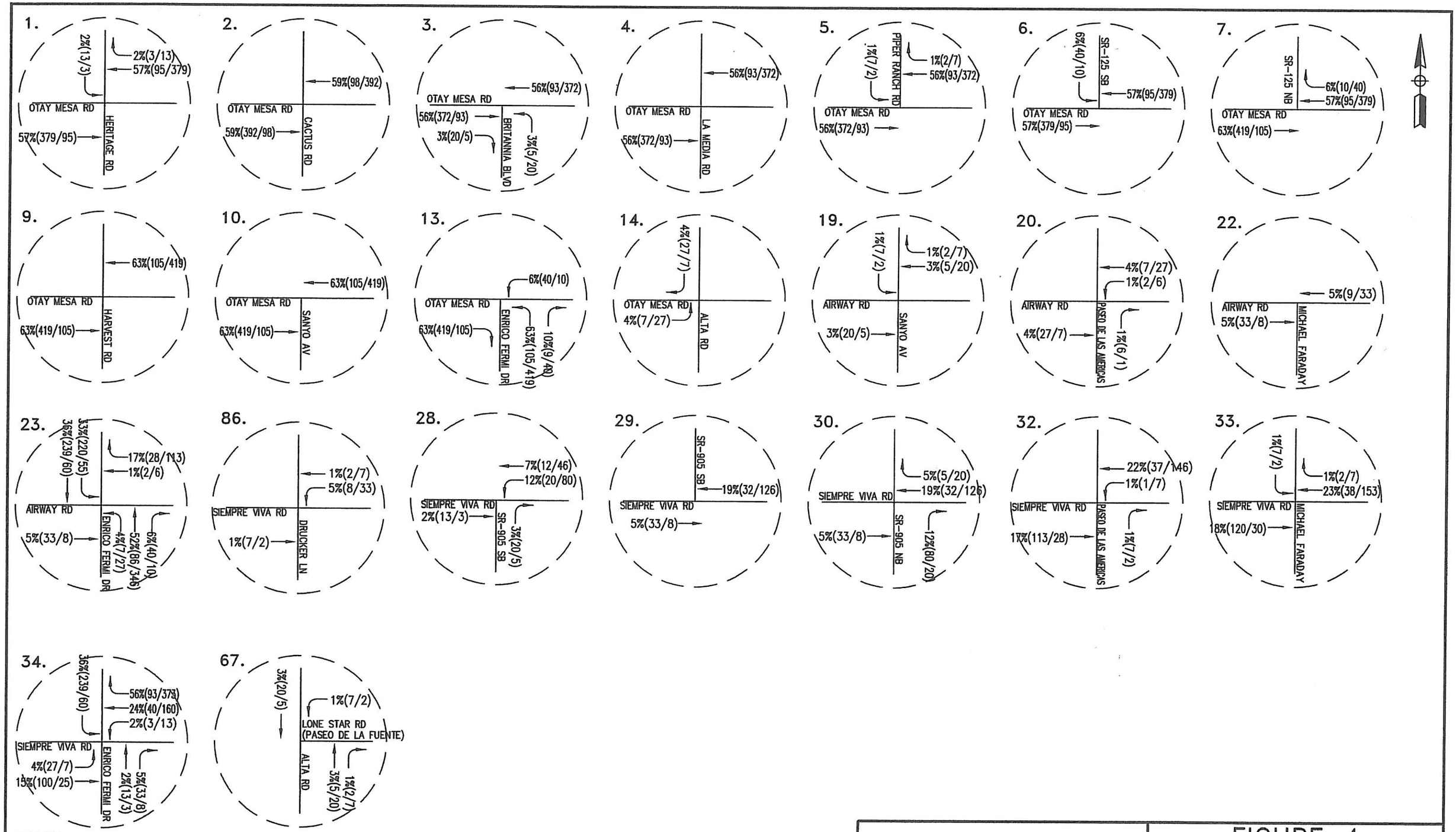
FIGURE 3

DAILY TRIP DISTRIBUTION & PROJECT RELATED TRAFFIC VOLUMES FOR PHASE 1 (EXISTING CONDITIONS)



LEGEND

→ – DIRECTION OF TRAVEL
(XX/YY)– AM/PM PEAK HOUR TRAFFIC VOLUMES
WW% – DISTRIBUTION PERCENTAGE

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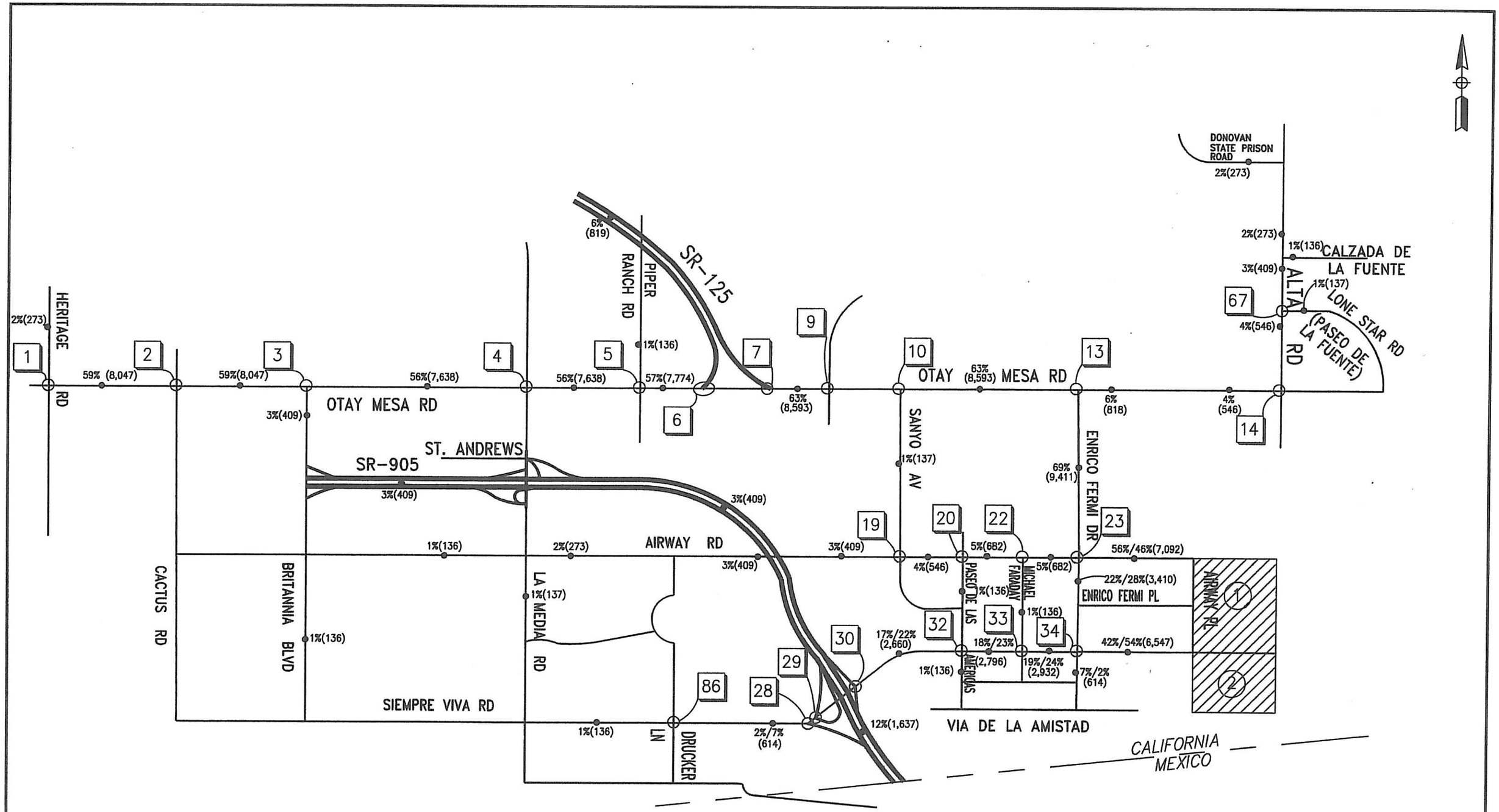
FIGURE 4

PEAK HOUR TRIP DISTRIBUTION & PROJECT RELATED TRAFFIC VOLUMES FOR PHASE 1 (EXISTING CONDITIONS)



LEGEND

- PROJECT SITE
- VV%/WW% – IN/OUT DISTRIBUTION PERCENTAGE
- (Z,ZZZ) – AVERAGE DAILY TRAFFIC
- (XX) – PHASE OF DEVELOPMENT
- XX – INTERSECTION ID NUMBERS, SEE FIGURE 6 FOR INTERSECTION DISTRIBUTION PERCENTAGES & AM/PM PEAK HOUR VOLUMES.

NOTE: INTERSECTION NUMBERS ARE NOT SEQUENTIAL

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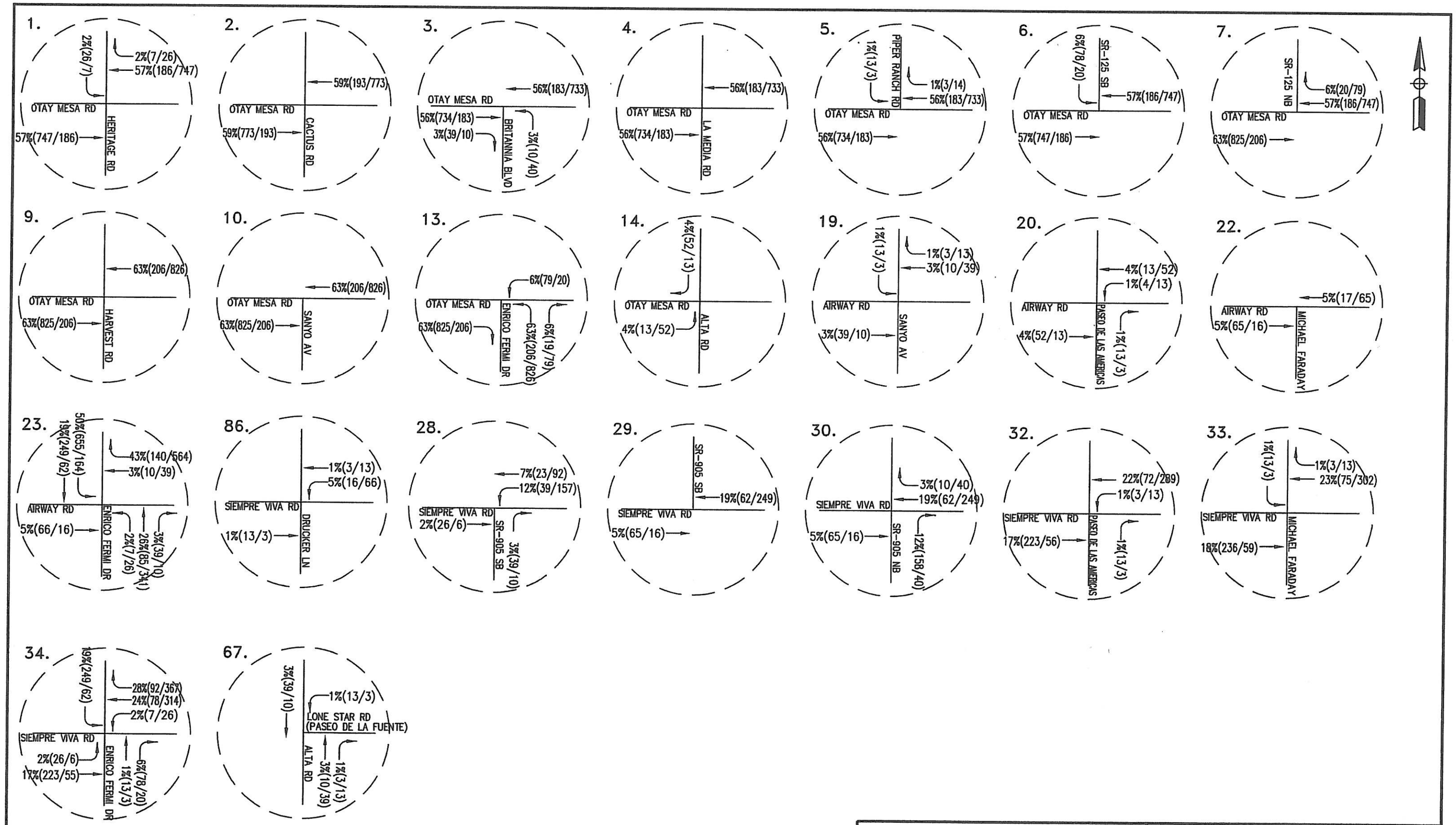
FIGURE 5

DAILY TRIP DISTRIBUTION & PROJECT RELATED TRAFFIC VOLUMES FOR PHASE 1-2 (EXISTING CONDITIONS)



LEGEND

→ – DIRECTION OF TRAVEL
(XX/YY) – AM/PM PEAK HOUR TRAFFIC VOLUMES
WW% – DISTRIBUTION PERCENTAGE

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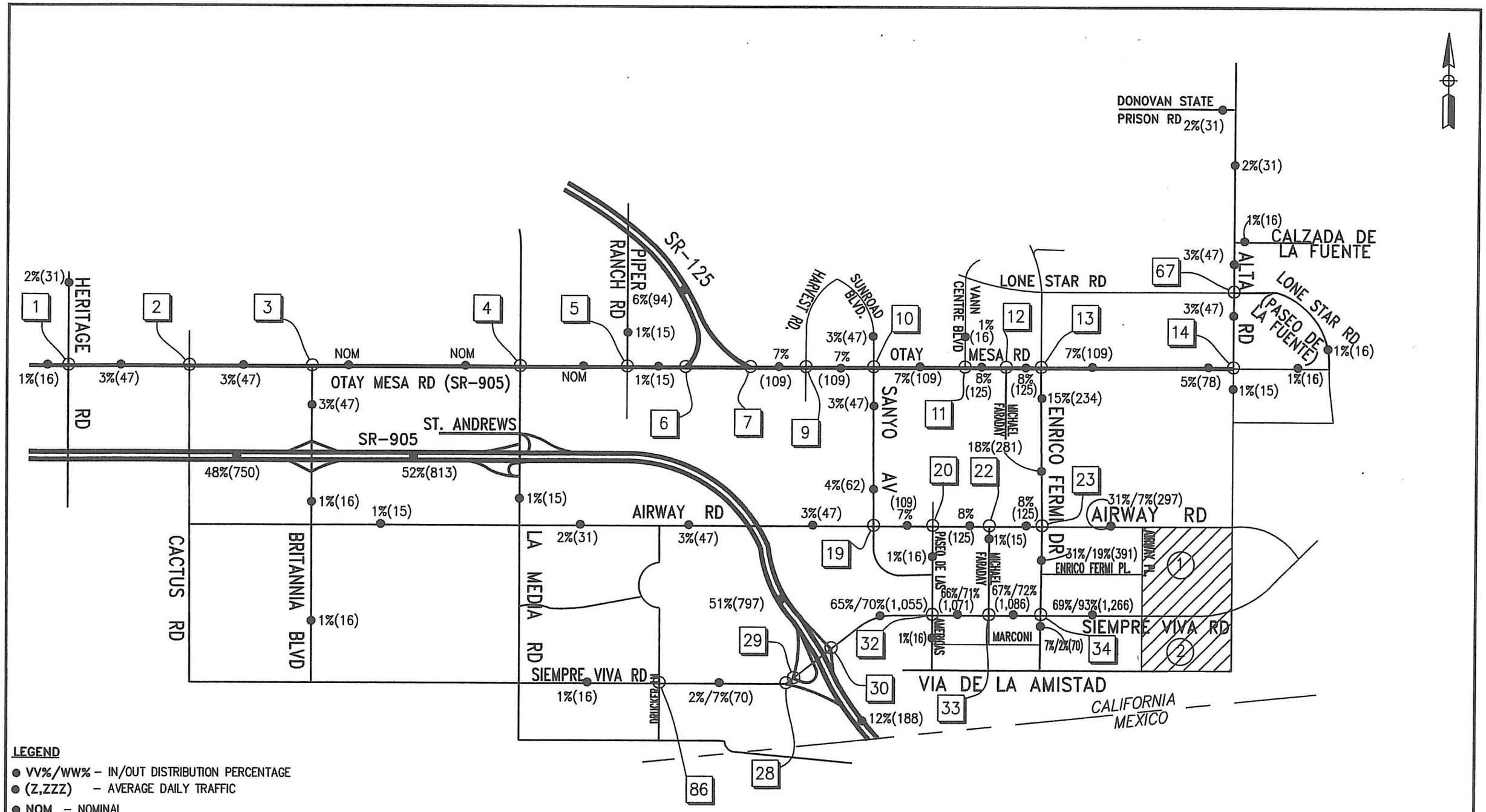
FIGURE 6
PEAK HOUR TRIP DISTRIBUTION & PROJECT RELATED TRAFFIC VOLUMES FOR PHASES 1-2
(EXISTING CONDITIONS)



LEGEND

- VV%/WW% – IN/OUT DISTRIBUTION PERCENTAGE
- (Z,ZZZ) – AVERAGE DAILY TRAFFIC
- NOM – NOMINAL
- XX – INTERSECTION ID NUMBERS, SEE FIGURE 8 FOR INTERSECTION DISTRIBUTION PERCENTAGES & AM/PM PEAK HOUR VOLUMES

NOTE: INTERSECTION NUMBERS ARE NOT SEQUENTIAL

- ▨ – PROJECT SITE
- (XX) – PHASE OF DEVELOPMENT

NOTE: PROJECT TRAFFIC VOLUMES ARE REPRESENTATIVE OF 11.46% OF THE TOTAL (PHASES 1–2) PROJECT TRAFFIC

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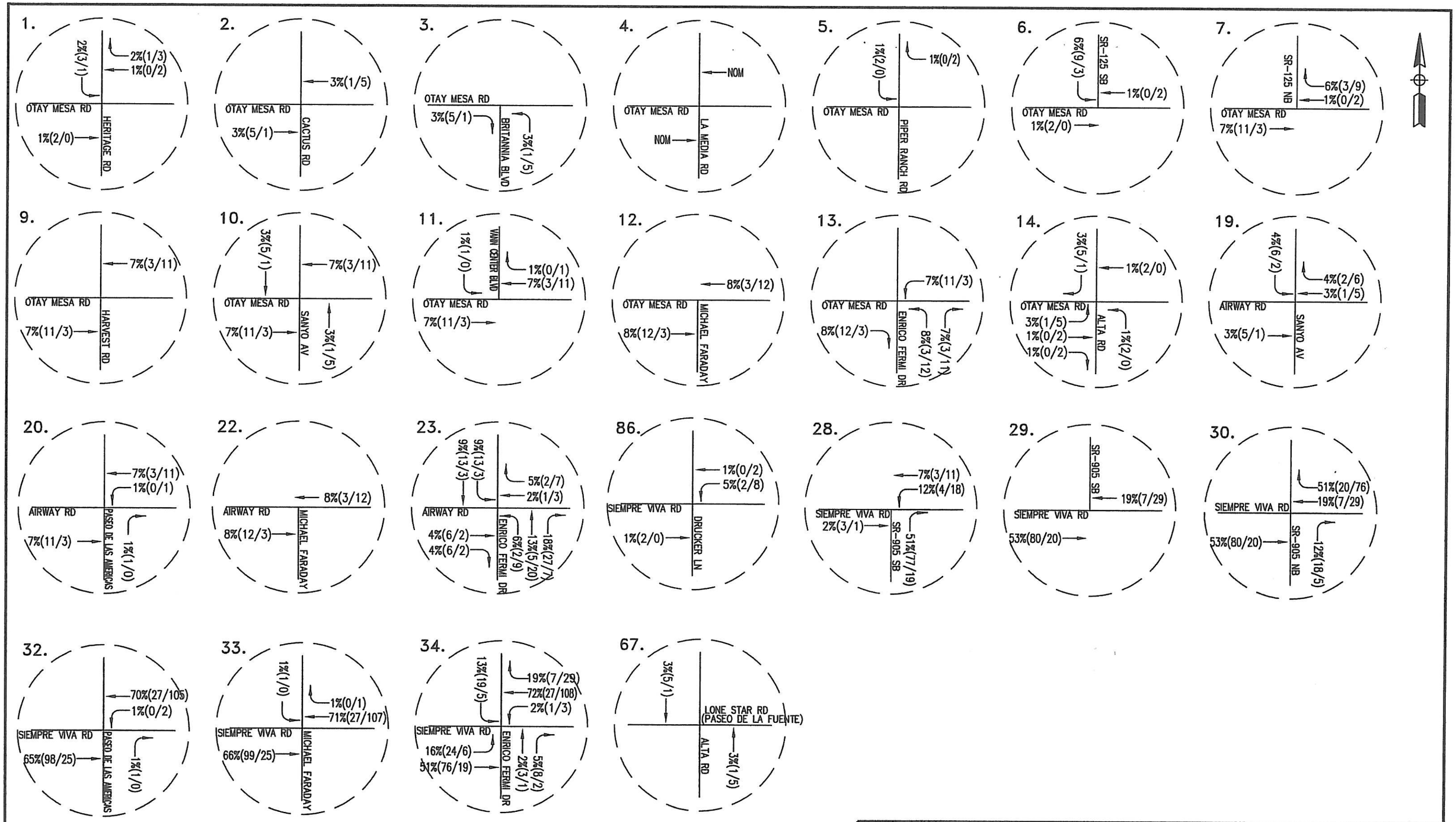
FIGURE 7

DAILY PROJECT TRIP DISTRIBUTION & PROJECT RELATED TRAFFIC [CUMULATIVE (2020) CONDITIONS] – BASED ON 11.46% OF PROJECT TRAFFIC



LEGEND

→ – DIRECTION OF TRAVEL
(XX/YY)– AM/PM PEAK HOUR TRAFFIC VOLUMES
WW% – DISTRIBUTION PERCENTAGE
NOM – NOMINAL

NOTE: PROJECT TRAFFIC VOLUMES ARE REPRESENTATIVE OF 11.46% OF THE TOTAL (PHASES 1–2) PROJECT TRAFFIC

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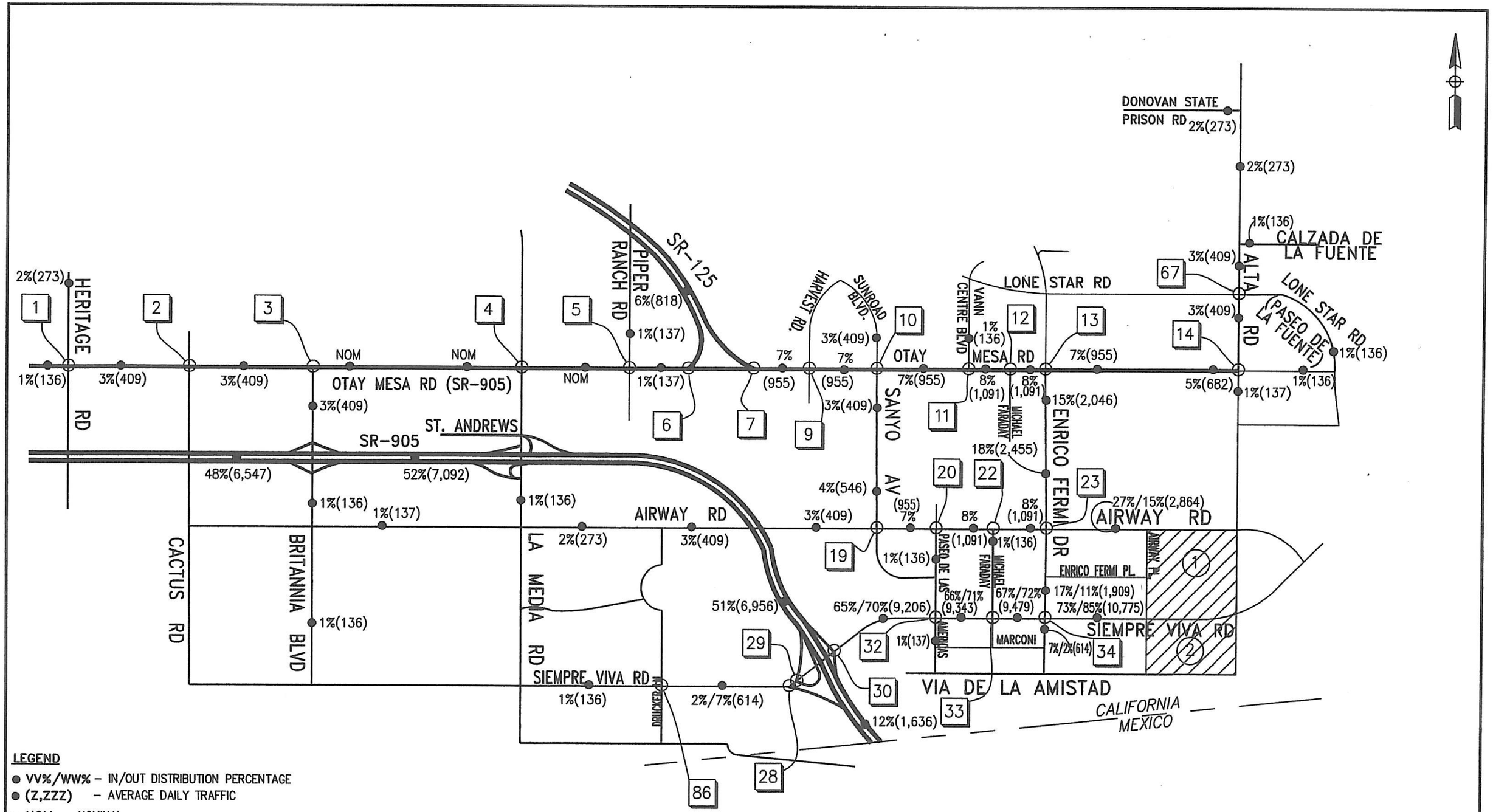
091201EE.dwg 10–31–11 JLB/JMM/SN/JMM

FIGURE 8

PEAK HOUR TRIP DISTRIBUTION & PROJECT RELATED TRAFFIC VOLUMES [CUMULATIVE (2020) CONDITIONS] – BASED ON 11.46% OF PROJECT TRAFFIC



LEGEND

- VV%/WW% – IN/OUT DISTRIBUTION PERCENTAGE
- (Z,ZZZ) – AVERAGE DAILY TRAFFIC
- NOM – NOMINAL
- XX – INTERSECTION ID NUMBERS, SEE FIGURE 10 FOR INTERSECTION DISTRIBUTION PERCENTAGES & AM/PM PEAK HOUR VOLUMES

NOTE: INTERSECTION NUMBERS ARE NOT SEQUENTIAL

- PROJECT SITE
- (XX) – PHASE OF DEVELOPMENT

NOTE: PROJECT TRAFFIC VOLUMES ARE REPRESENTATIVE OF 100% OF THE TOTAL (PHASES 1–2) PROJECT TRAFFIC

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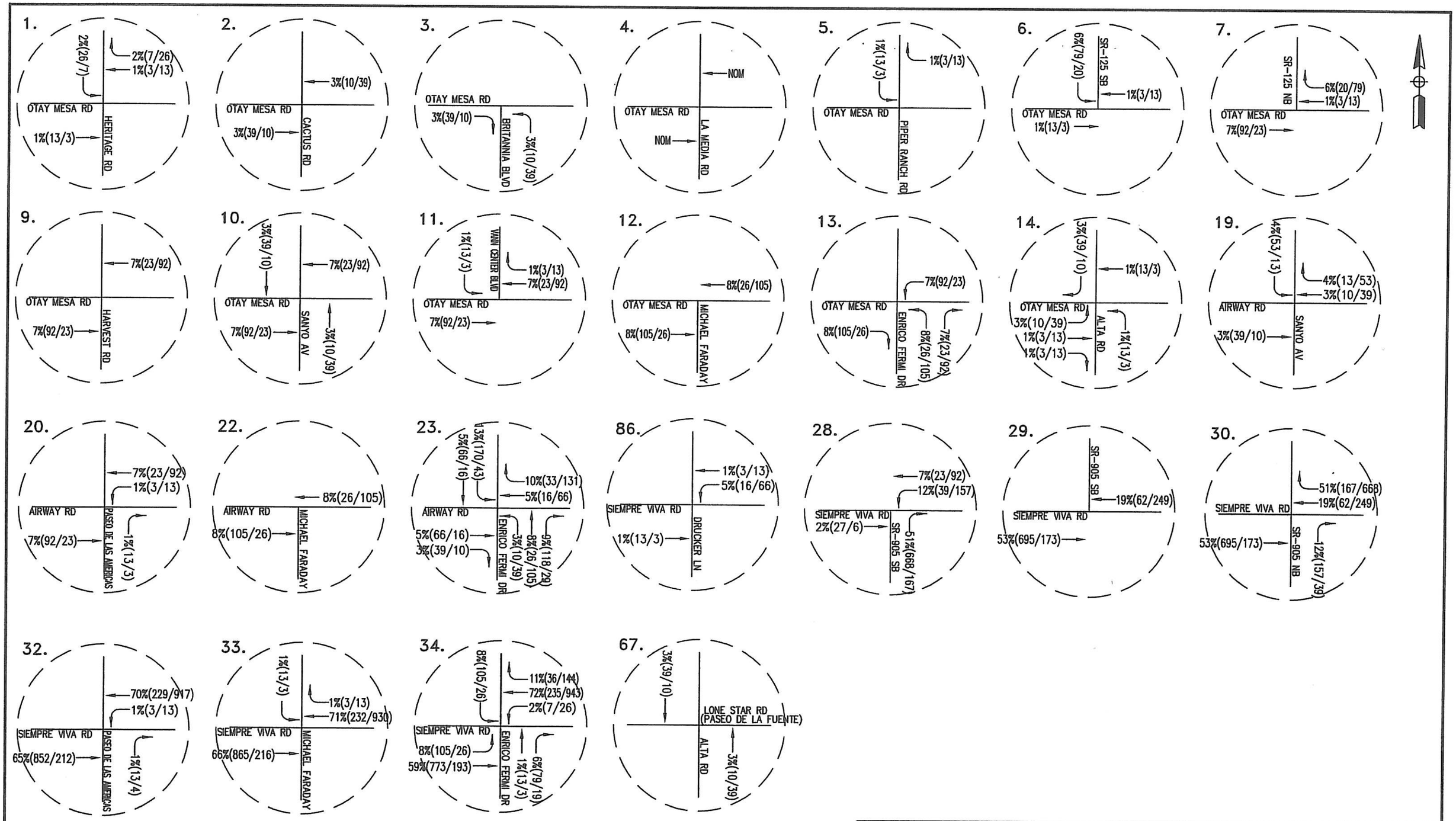
FIGURE 9

DAILY PROJECT TRIP DISTRIBUTION & PROJECT RELATED TRAFFIC FOR PHASES 1–2 [CUMULATIVE (2020) CONDITIONS]– BASED ON 100% OF PROJECT TRAFFIC



LEGEND

→ – DIRECTION OF TRAVEL
(XX/YY)– AM/PM PEAK HOUR TRAFFIC VOLUMES
WW% – DISTRIBUTION PERCENTAGE
NOM – NOMINAL

NOTE: PROJECT TRAFFIC VOLUMES ARE REPRESENTATIVE OF 100% OF THE TOTAL (PHASES 1–2) PROJECT TRAFFIC

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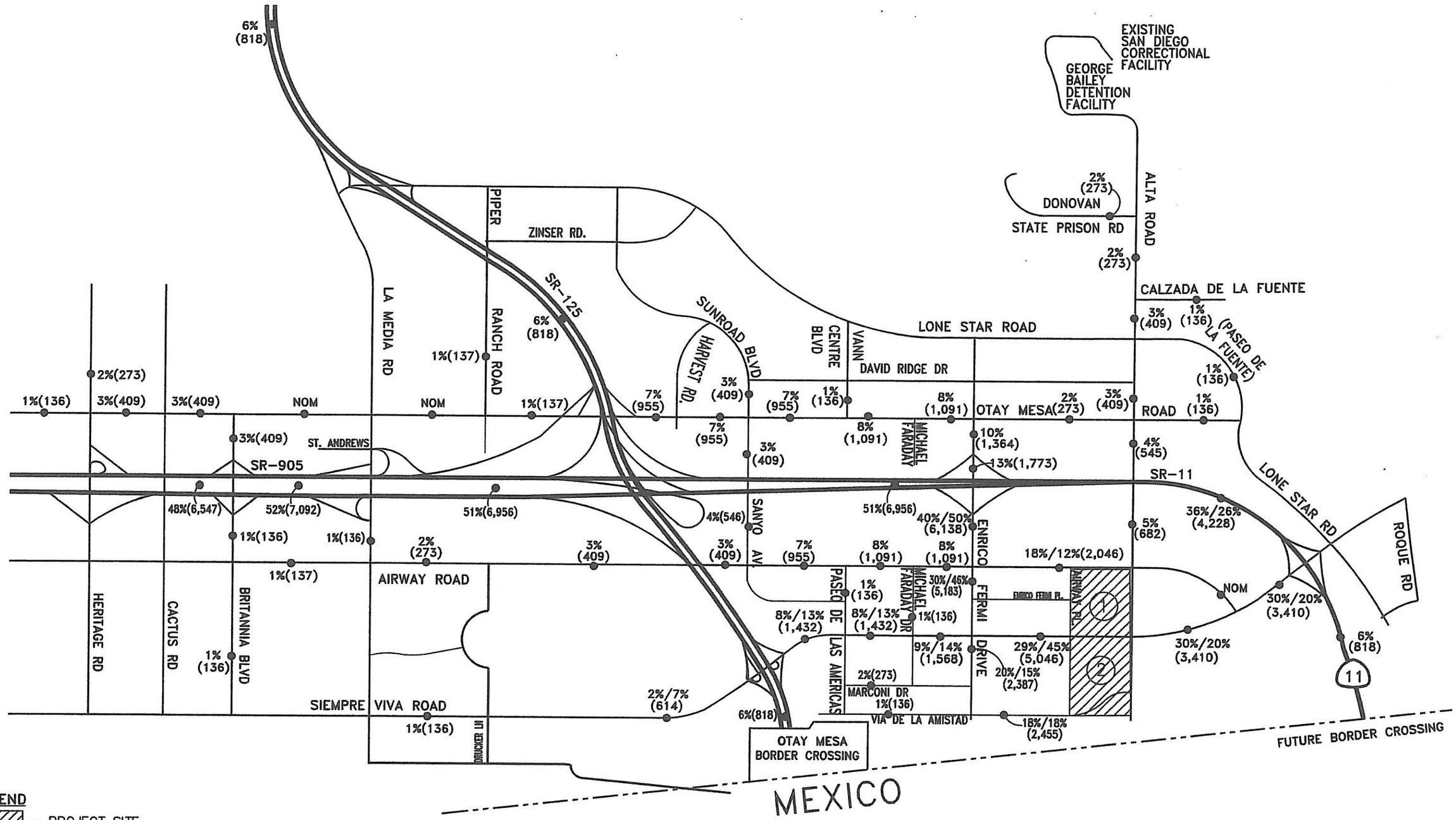
FIGURE 10

PEAK HOUR TRIP DISTRIBUTION & PROJECT RELATED TRAFFIC VOLUMES FOR PHASES 1-2 [CUMULATIVE (2020) CONDITIONS]– BASED ON 100% OF PROJECT TRAFFIC



LEGEND

- ▨ – PROJECT SITE
- NOM – NOMINAL
- ● VV%/WW%– IN/OUT DISTRIBUTION PERCENTAGE
- ● (Z,ZZZ) – AVERAGE DAILY TRAFFIC
- (XX) – PHASE OF DEVELOPMENT

Darnell & ASSOCIATES, INC.

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FIGURE 11

DAILY TRIP DISTRIBUTION PERCENTAGES & PROJECT RELATED TRAFFIC VOLUMES FOR PHASES 1-2 (BUILDOUT YEAR 2030 CONDITIONS)

STUDY AREA

To determine the study area for the project D&A utilized the County of San Diego's criteria which recommends the inclusion of all transportation facilities that receive 25 or more peak hour trips from the proposed project, and the City of San Diego's criteria which requires the analysis of all regionally significant arterial system segments and intersections where the proposed project will add 50 or more peak hour trips in either direction and all mainline freeway locations where the project will add 100 or more two-way peak hour trips. The County or City criteria was utilized dependent on the jurisdiction which the roadway segment or intersection or intersection was located in.

Based on the County and City's criteria and a review of Figures 3-10, the study area for each scenario was determined. Tables 3 and 4 provide a summary of the roadway segments and intersections that need to be included in the analysis for each study scenario.

As illustrated in Tables 3 and 4, the segments and intersections along Otay Mesa Road between Heritage Road and SR-125 only need to be analyzed under existing conditions because once Phases 1A and 1B of the SR-905 are completed, the proposed project will no longer add enough peak hour trips to require analysis. It should be noted that the study area for the cumulative conditions was determined based on the full build out (Phases 1-2) of the proposed project.

Table 3 – Summary of Study Area Roadway Segments by Scenario			
Roadway Segment	Criteria Utilized to Determine Study Area	Peak Hour Trip Threshold	Scenario Where Analysis is Required
Interim SR-905 (Otay Mesa Rd)			
Heritage Rd to Cactus Rd	City	50/direction	E+1, E+1-2
Cactus Rd to Britannia Blvd	City	50/direction	E+1, E+1-2
Britannia Blvd to La Media Rd	City	50/direction	E+1, E+1-2
La Media Rd to Piper Ranch Rd	City	50/direction	E+1, E+1-2
Piper Ranch Rd to SR-125	County	25-two-way	E+1, E+1-2
Otay Mesa Road (Old Otay Mesa Road)			
SR-125 to Harvest Rd	County	25-two-way	E+1, E+1-2, C w/905
Harvest Rd to Sanyo Ave	County	25-two-way	E+1, E+1-2, C w/905
Sanyo Ave to Enrico Fermi Dr	County	25-two-way	E+1, E+1-2, C w/905
Enrico Fermi Dr to Alta Rd	County	25-two-way	E+1, E+1-2, C w/905
Airway Road			
Sanyo Ave to Paseo de Las Americas	City	50/direction	E+1-2, C w/905
Paseo de Las Americas to Michael Faraday	County	25-two-way	E+1, E+1-2, C w/905
Michael Faraday to Enrico Fermi Dr	County	25-two-way	E+1, E+1-2, C w/905
Enrico Fermi Dr to Airway Pl	County	25-two-way	E+1, E+1-2, C w/905
Airway Pl to Alta Rd	County	25-two-way	E+1, E+1-2, C w/905
Siempre Viva Road			
Drucker Ln to SR-905	City	50/direction	E+1-2, C w/905
SR-905 to Paseo de Las Americas	City	50/direction	E+1, E+1-2, C w/905
Paseo de Las Americas to Michael Faraday	City	50/direction	E+1, E+1-2, C w/905
Michael Faraday to Enrico Fermi Dr	City	50/direction	E+1, E+1-2, C w/905
Enrico Fermi Dr to Airway Pl	County	25-two-way	E+1, E+1-2, C w/905
Airway Pl to Alta Rd (a)	County	25-two-way	E+1, E+1-2, C w/905
SR-125			
North of Otay Mesa Rd	SBX	100-two-way	E+1-2, C w/905 (b)
Existing SR-905			
South of Siempre Viva Rd	Caltrans	100-two-way	E+1, E+1-2, C w/905
New SR-905			
West of Britannia Blvd	Caltrans	100-two-way	C w/905
Britannia Blvd to La Media Rd	Caltrans	100-two-way	C w/905
La Media Rd to Siempre Viva Rd	Caltrans	100-two-way	C w/905
Sanyo Avenue			
Otay Mesa Rd to Airway Rd	City	50/direction	C w/905
Enrico Fermi Drive			
Otay Mesa Rd to Airway Rd	County	25-two-way	E+1, E+1-2, C w/905
Airway Rd to Enrico Fermi Pl	City	50/direction	E+1, E+1-2, C w/905
Enrico Fermi Pl to Siempre Viva Rd	City	50/direction	E+1, E+1-2, C w/905
Siempre Viva Rd to Via De La Amistad	City	50/direction	E+1-2, C w/905
Airway Place			
Airway Rd to Enrico Fermi Pl (a)	County	25-two-way	E+1, E+1-2, C w/905
Enrico Fermi Pl to Siempre Viva Rd (a)	County	25-two-way	E+1, E+1-2, C w/905
Alta Road			
Donovan State Prison Rd to Calzada De La Fuente	County	25-two-way	E+1-2, C w/905
Calzada De La Fuente to Lone Star Rd (Paseo De La Fuente)	County	25-two-way	E+1-2, C w/905
Lone Star Rd (Paseo De La Fuente) to Otay Mesa Rd	County	25-two-way	E+1, E+1-2, C w/905
Airway Rd to Siempre Viva Rd (a)	County	25-two-way	E+1, E+1-2, C w/905
Siempre Viva Rd to Via De La Amistad (a)	County	25-two-way	E+1, E+1-2, C w/905

E+1 = Existing + Project Phase 1
E+1-2 = Existing + Project Phases 1-2
C w/905 = Cumulative w/SR-905 Phases 1A & 1B
(a) Segment Located along project frontage and requires analysis regardless of project traffic added
(b) Project actually only adds 99 Peak hour trips to this segment, however since this is just under the threshold it was included in the study area

Table 4 – Summary of Study Area Intersections by Scenario			
Intersection	Criteria Utilized to Determine Study Area	Peak Hour Trip Threshold	Scenario Where Analysis is Required
Interim SR-905 @ Heritage Rd	City	50/direction	E+1, E+1-2
Interim SR-905 @ Cactus Rd	City	50/direction	E+1, E+1-2
Interim SR-905 @ Britannia Blvd	City	50/direction	E+1, E+1-2
Interim SR-905 @ La Media Rd	City	50/direction	E+1, E+1-2
Interim SR-905 @ Piper Ranch Rd	County	25-two-way	E+1, E+1-2
Otay Mesa Rd @ SR125 SB	County	25-two-way	E+1, E+1-2, C w/905
Otay Mesa Rd @ SR 125 NB	County	25-two-way	E+1, E+1-2, C w/905
Otay Mesa Rd @ Harvest Rd	County	25-two-way	C w/905
Otay Mesa Rd @ Sanyo Av	County	25-two-way	E+1, E+1-2, C w/905
Otay Mesa Rd @ Vann Centre Blvd	County	25-two-way	C w/905
Otay Mesa Rd @ Michael Faraday	County	25-two-way	C w/905
Otay Mesa Rd @ Enrico Fermi Dr	County	25-two-way	E+1, E+1-2, C w/905
Otay Mesa Rd @ Alta Rd	County	25-two-way	E+1, E+1-2, C w/905
Airway Rd @ Sanyo Av	City	50/direction	E+1-2, C w/905
Airway Rd @ Paseo De Las Americas	County	25-two-way	E+1, E+1-2, C w/905
Airway Rd @ Michael Faraday	County	25-two-way	E+1, E+1-2, C w/905
Airway Rd @ Enrico Fermi Dr	County	25-two-way	E+1, E+1-2, C w/905
Siempre Viva Rd @ Drucker Ln	City	50/direction	E+1-2, C w/905
SR-905 SB Ramp @ EB Siempre Viva	City	50/direction	E+1, E+1-2, C w/905
SR-905 SB Ramp @ WB Siempre Viva	City	50/direction	E+1, E+1-2, C w/905
SR-905 NB Ramp @ Siempre Viva	City	50/direction	E+1, E+1-2, C w/905
Siempre Viva @ Paseo De Las Americas	City	50/direction	E+1, E+1-2, C w/905
Siempre Viva @ Michael Faraday	City	50/direction	E+1, E+1-2, C w/905
Siempre Viva Rd @ Enrico Fermi Dr	County	25-two-way	E+1, E+1-2, C w/905
Alta Rd @ Lone Star Road (Paseo De La Fuente)	County	25-two-way	E+1, E+1-2, C w/905

E+1 = Existing + Project Phase 1
E+1-2 = Existing + Project Phases 1-2
C w/905 = Cumulative w/SR-905 Phases 1A & 1B

SECTION III – EXISTING CONDITIONS

This section of the traffic study is intended to assess the existing conditions of the roadways within the vicinity of the project to determine travel flow difficulties, if any, that exist prior to adding the traffic generated by the proposed project. The existing conditions analysis establishes a base condition that is used to assess the other scenarios discussed in this report. Darnell & Associates, Inc (D&A) conducted a field review of the area surrounding the project in December 2010. Figures 12 and 13 illustrate the existing roadway and intersection conditions in the project vicinity.

EXISTING ROADWAY CHARACTERISTICS

The key segments analyzed in the study area are identified below:

Interim State Route 905 (SR-905)/Otay Mesa Road (SC-1120) is an east-west six-lane expressway which extends from Interstate 5 to the City of San Diego Otay Mesa Community. Approximately one mile east of Interstate 805, there is a break in the route and SR-905 becomes Otay Mesa Road. The posted speed limit on Otay Mesa Road is 55 miles per hour (mph).

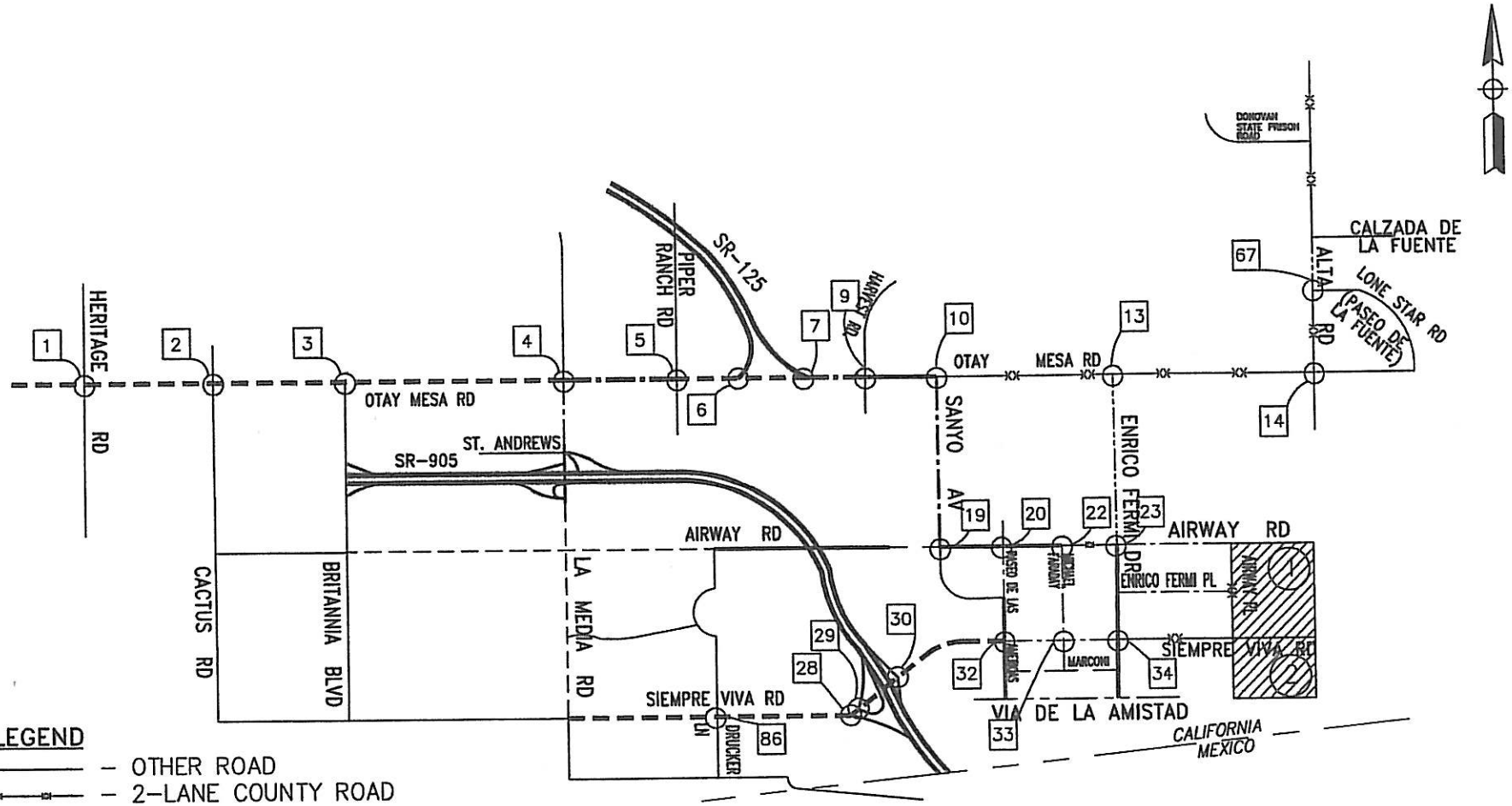
Although Phase 1A of the new SR-905 freeway has been opened, the segment of Otay Mesa Road between Heritage Road and approximately Harvest Road is still under the jurisdiction of Caltrans as well as the City of San Diego and/or County of San Diego, and is thus referred to as Interim SR-905 (Otay Mesa Road) within this report.

Interim SR-905 (Otay Mesa Road) is improved to six lane Prime Arterial standards from west of Caliente Avenue to approximately Piper Ranch Road. Immediately east of Piper Ranch Road, Interim SR-905 (Otay Mesa Road) provides five (5) travel lanes (2 eastbound lanes and 3 westbound lanes), however as it traverses easterly towards the SR-125; Otay Mesa Road widens to provide a total of seven (7) travel lanes (4 eastbound lanes and 3 westbound lanes). For analysis purposes, this segment of Interim SR-905 (Otay Mesa Road) was assumed to have the capacity equivalent to that of a six-lane Prime Arterial. (Copies of Caltrans striping concepts for the segment of Otay Mesa Road between Piper Ranch Road and Harvest Road are provided in Appendix L.)

In the City of San Diego Circulation Element, a six-lane Prime Arterial has a capacity of 60,000 Average Daily Trips (ADT) at Level of Service (LOS) E with a cross section of 102 feet (102') curb to curb and a right-of-way of 122 feet (122'). A four-lane Major Arterial has a capacity of 40,000 ADT at LOS E with a cross section of 78 feet (78') curb to curb and a right-of-way of 98 feet (98'). In the County of San Diego Circulation Element a six-lane Prime Arterial has a capacity of 57,000 ADT at LOS E.

Otay Mesa Road (Old Otay Mesa Road) (SC-1120) is basically an east-west roadway located within the jurisdictions of the County and City of San Diego. The segment from SR-125 to approximately 1,200 feet east of Sanyo Avenue is located within both jurisdictions, with the centerline of the existing road as the boundary. The posted speed limit on this section of Otay Mesa Road is 55 mph.

The segment of Otay Mesa Road (Old Otay Mesa Road) just east of the SR-125 Southbound ramp is currently constructed to provide six (6) travel lanes (2 eastbound lanes and 4 westbound lanes). The segment of Otay Mesa Road (Old Otay Mesa Road) just west of Harvest Road is currently constructed to provide five (5) travel lanes (2 eastbound lanes and 3 westbound lanes). For the purpose of analysis, these segments of Otay Mesa Road (Old Otay Mesa Road) were assumed to have the capacity equivalent to that of a modified 4-lane Major Arterial, approximately 47,000 ADT at LOS E (the half-way point between a 4-lane Major Road and a 6-lane Prime Arterial).



LEGEND

- OTHER ROAD
- 2-LANE COUNTY ROAD
- 2-LANE COLLECTOR
- 3-LANE TOWN COLLECTOR
- 4-LANE COLLECTOR
- 4-LANE MAJOR ARTERIAL
- MODIFIED 4-LANE MAJOR ROAD
- 6-LANE PRIME ARTERIAL
- PROJECT SITE

(XX) - PHASE OF DEVELOPMENT

[XX] - INTERSECTION ID NUMBERS SEE FIGURE 13 FOR INTERSECTION GEOMETRIES

NOTE: INTERSECTION NUMBERS ARE NOT SEQUENTIAL

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FIGURE 12

ROADWAY SEGMENTS CONDITIONS

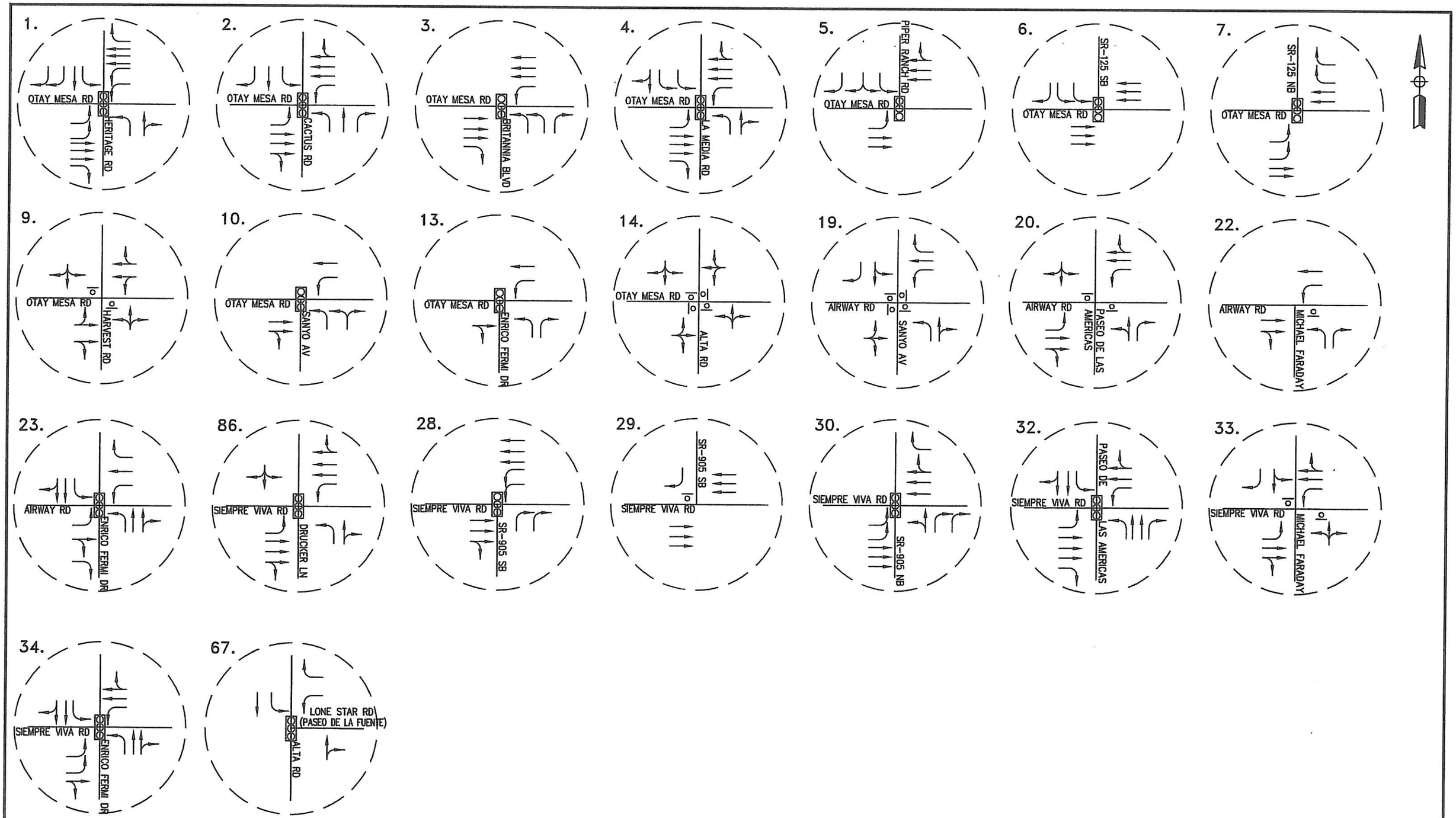

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FIGURE 13
EXISTING CONDITIONS
INTERSECTION GEOMETRICS

The segment of Otay Mesa Road (Old Otay Mesa Road) between Harvest Road and Sanyo Avenue is currently constructed to provide four (4) travel lanes (2 eastbound lanes and 2 westbound lanes). For analysis purposes, this segment of Otay Mesa Road (Old Otay Mesa Road) was assumed to have the capacity equivalent to that of a 4-lane Major Road with a capacity of 37,000 ADT at LOS E.

The segment of Otay Mesa Road between Sanyo Avenue and Alta Road is basically a two-lane undivided roadway. This section of Otay Mesa Road has a varying pavement width of 29 to 58 feet.

The current capacity on the County two-lane segments of (Otay Mesa Road) is estimated to be equivalent to that of a Light Collector, capacity of 16,200 ADT at LOS E. A Light Collector for the County has a cross section of 40 feet (40') curb to curb, and 60 feet (60') of right-of-way.

Based on the East Otay Mesa Specific Plan Amendment (SPA 10-001) approved by the Board of Supervisors September 15, 2010, the ultimate classification of the segment of Otay Mesa Road between Harvest Road and Enrico Fermi Drive is classified as a Prime Arterial. In the East Otay Mesa Specific Plan, this segment is a Prime Arterial with a capacity of 57,000 ADT at LOS E, with a modified cross section of 90 feet (90') curb to curb and 110 feet (110') of right-of-way. Between Enrico Fermi Drive and Alta Road, Otay Mesa Road is classified as a four-lane Major Road. A Major Road has a capacity of 37,000 ADT at LOS E, with a cross section of 78 feet (78') curb to curb and 98 feet (98') of right-of-way.

Airway Road (SC-2300) is an east-west roadway that is located within the jurisdiction of both the City of San Diego (west of Paseo de Las Americas) and the County of San Diego (between Paseo de Las Americas to Enrico Fermi Drive). Airway Road, between La Media Road and Avenida Costa Azul, is a two-lane undivided roadway. Between Avenida Costa Azul and Piper Ranch Road, Airway Road widens to a four-lane roadway with a raised median. East of Piper Ranch Road, for approximately 150 feet, Airway Road provides one (1) eastbound lane and two (2) westbound lanes. From approximately 700 feet west of Harvest Road to approximately 600 feet west of Sanyo Avenue, Caltrans recently improved Airway Road as part of the SR-905 Phase 1A project to the standards equivalent of a 4-lane Major Road. From 600 feet west of Sanyo Avenue to Sanyo Avenue, Airway Road is only striped to provide two travel lanes, however, the westbound lane is approximately 29 feet wide, and the eastbound lane is approximately 25 feet wide. Airway Road between Sanyo Avenue and Michael Faraday Drive has been improved to provide two travel lanes in each direction with a raised median. Between Michael Faraday Drive and Enrico Fermi Drive, Airway Road narrows back down to a two-lane roadway. Just east of Enrico Fermi Drive to its current terminus, Airway Road is currently constructed as a four-lane roadway with a raised median.

For the purpose of analysis, the segment of Airway Road between Sanyo Avenue and Michael Faraday Drive was assumed to have the capacity equivalent to the City's classification of a Major Arterial with a capacity of 40,000 ADT at LOS E. The segment between Michael Faraday Drive and Enrico Fermi Drive was assumed to have the capacity equivalent to that of the County of San Diego's Light Collector with a capacity of 16,200 ADT at LOS E. From Enrico Fermi Drive to its current terminus, Airway Road was assumed to have a capacity of a 4-lane Collector, 34,200 ADT at LOS E. It should be noted that Airway Road no longer has direct access to State Route 905.

Airway Road has the ultimate classification as a four-lane Major facility with a capacity of 40,000 ADT at LOS E for the segment located within the City and a capacity of 37,000 ADT at LOS E for the segment located within the County. The cross section for a four-lane Major facility is 78 feet (78') curb to curb, with 98 feet (98') right-of-way.

Siempre Viva Road is an east-west roadway that is located under the jurisdiction of the City of San Diego. From west of SR-905 to Paseo De Las Americas, Siempre Viva Road is a six-lane facility with a cross-section equivalent to that of a Prime Arterial, capacity of 60,000 ADT at LOS E. Currently, east of Paseo De Las Americas to Enrico Fermi Drive, Siempre Viva Road is a four-lane road with a cross-section equivalent to that of a Collector Road, capacity of 30,000 ADT at LOS E. This segment of Siempre Viva Road is planned as a six-lane facility with a cross-section equivalent to that of a Prime

Arterial, capacity of 60,000 ADT at LOS E. Just east of Enrico Fermi Drive to the CHP facility, Siempre Viva Road is currently constructed to provide one (1) eastbound lane and two (2) westbound travel lanes. From the CHP facility to Airway Place, Siempre Viva Road is constructed to provide two (2) westbound travel lanes. For purposes of analysis, the segment of Siempre Viva Road between Enrico Fermi Drive and Airway Place was assumed to have the capacity equivalent to that of a Light Collector, 16,200 ADT at LOS E.

Sanyo Avenue is a north-south facility that is currently constructed as a four-lane undivided roadway between Otay Mesa Road (Old Otay Mesa Road) and Airway Road. The roadway segment of Sanyo Avenue between Otay Mesa Road (Old Otay Mesa Road) and Airway Road is under the City's jurisdiction and has the classification of a 4 lane Collector, capacity of 30,000 ADT at LOS E.

Enrico Fermi Drive (SA-1105) is constructed as a north-south facility. This roadway segment is split between County and City of San Diego jurisdictions. The segment north of Airway Road is under the County's jurisdiction and exists as a three lane roadway just south of Otay Mesa Road and north of Airway Road. Some portion of this roadway segment currently exists as a two lane roadway. For the purpose of analysis, the roadway segment under County's jurisdiction was analyzed as a Town Collector (capacity of 19,000 ADT at LOS E). The segment of Enrico Fermi Drive, south of Airway Road is under the City's jurisdiction and exists as a 4 lane Major Arterial (capacity of 40,000 ADT at LOS E).

Enrico Fermi Drive has the ultimate classification in the East Otay Mesa Specific Plan Amendment (SPA 10-001) approved by the Board of Supervisors September 15, 2010 as a four-lane Major facility with a capacity of 40,000 ADT at LOS E for the segment located within the City and a capacity of 37,000 ADT at LOS E for the segment located within the County. The cross section for a four-lane Major facility is 78 feet (78') curb to curb, with 98 feet (98') right-of-way. Per the East Otay Mesa Specific Plan Amendment (SPA 10-001) approved by the Board of Supervisors September 15, 2010, the segment of Enrico Fermi Drive between Otay Mesa Road and SR-11 is classified as an Enhanced Major Road Facility that requires additional right-of-way to accommodate turn movements and freeway access from Otay Mesa Road to SR-11.

Airway Place is constructed as a north-south non-circulation element roadway. Airway Place is currently constructed to provide approximately 24 feet of pavement and provides two (2) travel lanes for only the southbound direction of travel. For purposes of analysis, this roadway segment was assumed to have the capacity equivalent to that of a 2-lane Industrial Commercial Collector, 16,200 ADT at LOS E.

Alta Road (SR 1112) is constructed as a north-south facility. The majority of the roadway is generally constructed as a two (2)-lane (one lane each direction) undivided roadway with a capacity of a Light Collector, 16,200 ADT at LOS E. The segment of Alta Road between Lone Star Road (Paseo De La Fuente) and Calzada De La Fuente was widened to provide two (2) northbound travel lanes and one (1) southbound travel lane. This segment of Alta Road has a capacity equivalent to that of a Town Collector, 19,000 ADT at LOS E.

Based on the County Circulation Element, the ultimate classification of Alta Road between Lone Star Road (Paseo De La Fuente) and Otay Mesa Road (Old Otay Mesa Road) is a four-lane Major Road with a bike trail within the east side of roadway, capacity of 37,000 ADT at LOS E. The ultimate classification of Alta Road between Lone Star Road (Paseo De La Fuente) and Donovan State Prison Road is a four-lane Industrial Collector with a center left turn lane, capacity of 34,200 ADT at LOS E with a modified cross section of 62 feet (62') curb to curb and 86 feet (86') of right-of-way. From Donovan State Prison Road north to the Specific Plan Boundary, the roadway segment of Alta Road is classified as a four-lane Industrial Collector, capacity of 34,200 ADT at LOS E with a modified cross section of 58 feet (58') curb to curb and 84 feet (84') of right-of-way.

KEY INTERSECTIONS

Figure 13 provides intersection configurations and traffic control for the key intersections. The key intersections analyzed include:

- Interim SR-905 (Otay Mesa Road)/Heritage Road (signalized);
- Interim SR-905 (Otay Mesa Road)/Cactus Road (signalized);
- Interim SR-905 (Otay Mesa Road)/Britannia Boulevard (signalized);
- Interim SR-905 (Otay Mesa Road)/La Media Road (signalized);
- Interim SR-905 (Otay Mesa Road)/Piper Ranch Road (signalized);
- Otay Mesa Road/SR-125 Southbound Ramp (signalized);
- Otay Mesa Road/SR-125 Northbound Ramp (signalized);
- Otay Mesa Road/Harvest Road (two-way stop-controlled);
- Otay Mesa Road (Old Otay Mesa Road)/Sanyo Avenue (signalized);
- Otay Mesa Road (Old Otay Mesa Road)/Enrico Fermi Drive (signalized);
- Otay Mesa Road (Old Otay Mesa Road)/Alta Road (all-way stop-controlled);
- Airway Road/Sanyo Avenue (all-way stop-controlled);
- Airway Road/Paseo De Las Americas (one-way stop-controlled);
- Airway Road/Michael Faraday Drive (one-way stop-controlled);
- Airway Road/Enrico Fermi Drive (signalized);
- Siempre Viva Road/Drucker Lane (signalized);
- SR-905 Southbound Ramp/Eastbound Siempre Viva Road (signalized);
- SR-905 Southbound Ramp/Westbound Siempre Viva Road (one-way stop-controlled);
- SR-905 Northbound Ramp/Siempre Viva Road (signalized);
- Siempre Viva Road/Paseo De Las Americas (signalized);
- Siempre Viva Road/Michael Faraday Drive (two-way stop-controlled);
- Siempre Viva Road/Enrico Fermi Drive (signalized); and
- Alta Road/Lone Star Road (Paseo De La Fuente) (signalized).

ROADWAY SEGMENT DAILY TRAFFIC

Existing counts for SR-905 south of Siempre Viva Road were obtained from Caltrans website. Twenty-four (24) machine counts were collected on Tuesday, February 15, 2011 for the following key roadway segments: Interim SR-905 (Otay Mesa Road) between Heritage Road and SR-125, Old Otay Mesa Road between SR-125 and Sanyo Avenue; Siempre Viva Road between Drucker Lane and Paseo De Las Americas; Airway Road between Paseo De Las Americas and Enrico Fermi Drive; and Sanyo Avenue between Otay Mesa Road and Airway Road.

Twenty-four (24) hour machine counts were collected on a Tuesday, Wednesday, or Thursday in May or June 2010 at the following key roadway segments: Old Otay Mesa Road between Sanyo Avenue and Alta Road; Airway Road between Enrico Fermi Drive and Airway Place; Siempre Viva Road between Paseo De Las Americas and Airway Place; Enrico Fermi Drive between Otay Mesa Road and Via De La Amistad; and Alta Road between Donovan State Prison Road and Otay Mesa Road.

A review of the 2011 count data for Airway Road between Sanyo Avenue and Enrico Fermi Drive found that there was a 74% to 82% reduction in average daily traffic on these segments of Airway Road when compared to the previous counts collected in March 2008. Therefore, the March 2008 count data (which was collected before the Airway Road connection to SR-905 was removed) was utilized for the segments of Airway Road between Sanyo Avenue and Enrico Fermi Drive to provide a worse-case analysis.

The existing daily traffic volumes utilized within this report are illustrated in Figure 14. Count summary sheets can be found in Appendix A.

INTERSECTION TRAFFIC COUNTS

Morning and afternoon peak hour turn counts for each of the key intersections as summarized below:

- Interim SR-905 (Otay Mesa Rd)/Heritage Rd: Counted on Tuesday February 15, 2011
- Interim SR-905 (Otay Mesa Rd)/Cactus Rd: Counted on Tuesday February 15, 2011
- Interim SR-905 (Otay Mesa Rd)/Britannia Blvd: Counted on Tuesday February 15, 2011
- Interim SR-905 (Otay Mesa Rd)/La Media Rd: Counted on Tuesday February 15, 2011
- Interim SR-905 (Otay Mesa Rd)/Piper Ranch Rd: Counted on Tuesday February 15, 2011
- Otay Mesa Rd/SR-125 SB Ramp: Counted on Tuesday February 15, 2011
- Otay Mesa Rd/SR-125 NB Ramp: Counted on Tuesday February 15, 2011
- Otay Mesa Rd/Harvest Rd: Counted on Tuesday February 15, 2011
- Otay Mesa Rd(Old Otay Mesa Rd)/Sanyo Ave: Counted on Tuesday February 15, 2011
- Otay Mesa Rd(Old Otay Mesa Rd)/Enrico Fermi Dr: Counted on Thursday May 27, 2010
- Otay Mesa Rd(Old Otay Mesa Rd)/Alta Rd: Counted on Thursday May 6, 2010
- Airway Rd/Sanyo Ave: Counted on Tuesday February 15, 2011
- Airway Rd/Paseo De Las Americas: Counted on Wednesday May 26, 2010
- Airway Rd/Michael Faraday Dr: Counted on Wednesday May 26, 2010
- Airway Rd/Enrico Fermi Dr: Counted on Tuesday March 1, 2011
- Siempre Viva Rd/Drucker Ln: Counted on Tuesday February 15, 2011
- SR-905 SB Ramp/EB Siempre Viva Rd: Counted on Tuesday February 15, 2011
- SR-905 SB Ramp/WB Siempre Viva Rd: Counted on Tuesday February 15, 2011
- SR-905 NB Ramp/Siempre Viva Rd: Counted on Tuesday February 15, 2011
- Siempre Viva Rd/Paseo De Las Americas: Counted on Tuesday February 15, 2011
- Siempre Viva Rd/Michael Faraday Dr: Counted on Tuesday May 25, 2010
- Siempre Viva Rd/Enrico Fermi Dr (signalized): Counted on Tuesday May 25, 2010
- Alta Rd/Lone Star Rd (Paseo De La Fuente): Counted on Thursday May 6, 2010

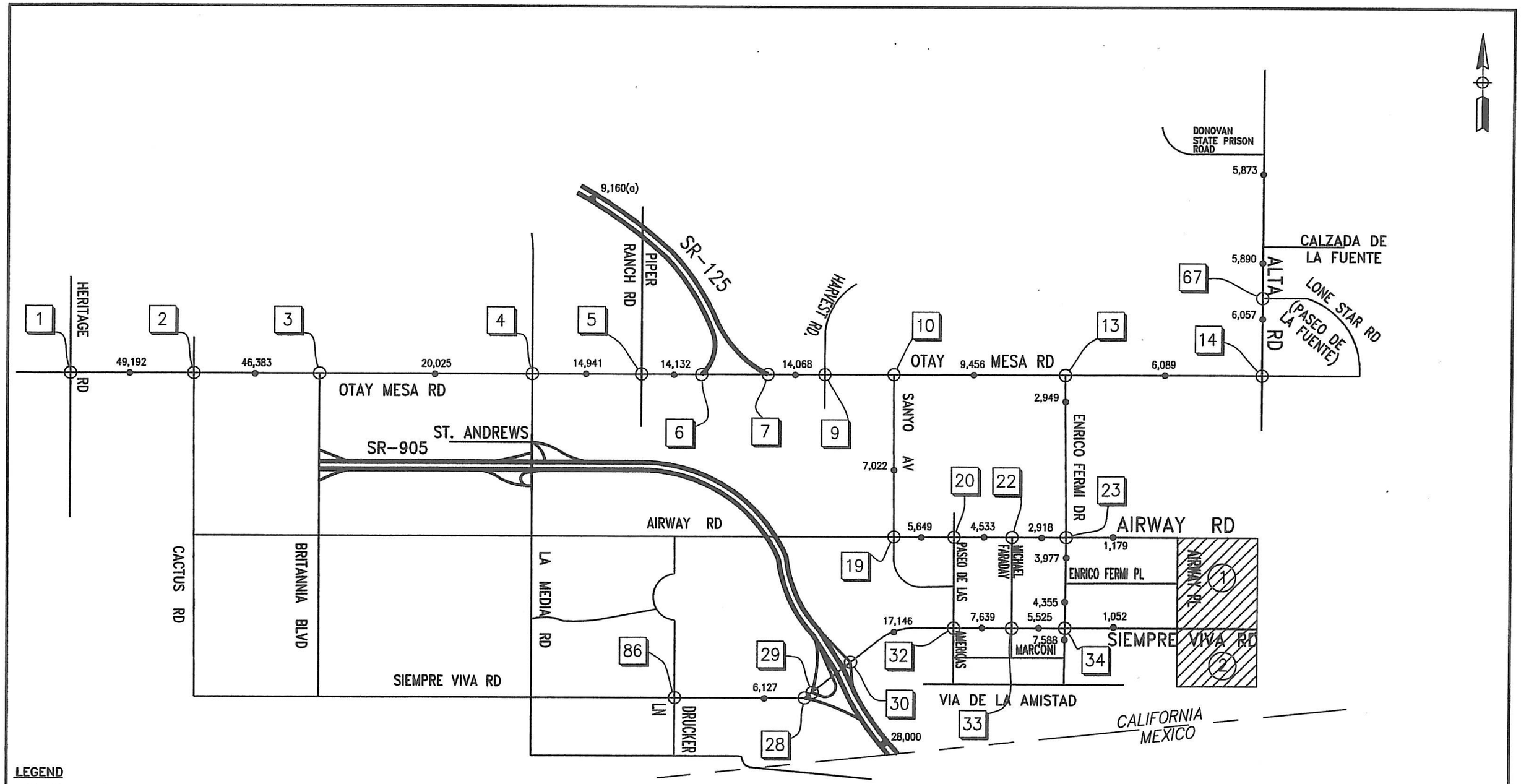
A review of the 2011 count data for Airway Road between Sanyo Avenue and Enrico Fermi Drive found that there was a 74% to 82% reduction in average daily traffic on these segments of Airway Road when compared to the previous counts collected in March 2008. Therefore, the March 2008 count data (which was collected before the Airway Road connection to SR-905 was removed) was utilized for the Airway Road/Paseo De Las Americas and Airway Road/Michael Faraday Drive intersections.

Count summary sheets can be found in Appendix A. Figure 15 presents the existing conditions peak hour traffic volumes used in this analysis.

EXISTING LEVEL OF SERVICE CONDITIONS

Existing – Roadway Segments

Table 5 summarizes the daily segment analysis for the existing conditions. As shown in Table 5, based on average daily conditions all key roadway segments currently operate at an acceptable LOS D or better.



LEGEND

- PROJECT SITE
- Z,ZZZ – AVERAGE DAILY TRAFFIC
- XX – INTERSECTION ID #, SEE FIGURE 15 FOR INTERSECTION PEAK HOUR TURNING VOLUMES
- (XX) – PHASE OF DEVELOPMENT

NOTE: INTERSECTION NUMBERS ARE NOT SEQUENTIAL

(a)– VOLUME WAS ESTIMATED BASED ON PEAK HOUR COUNTS

Darnell & ASSOCIATES, INC.

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FIGURE 14

EXISTING (2011) DAILY TRAFFIC VOLUMES

Table 5 – Existing Conditions Roadway Segment Daily LOS Summary						
Roadway Segment	Jurisdiction	Class	Capacity (LOS E)	ADT	v/c	LOS
Interim SR-905 (Otay Mesa Rd)						
Heritage Rd to Cactus Rd	**City**/Caltrans	6P	60,000	49,192	0.82	C
Cactus Rd to Britannia Blvd	**City**/Caltrans	6P	60,000	46,383	0.77	C
Britannia Blvd to La Media Rd	**City**/Caltrans	6P	60,000	20,025	0.33	A
La Media Rd to Piper Ranch Rd	**City**/Caltrans	4M(m)	45,000 (a)	14,941	0.33	A
Piper Ranch Rd to SR-125	**County**/City/Caltrans	6P	57,000	14,132	0.25	A
Otay Mesa Road (Old Otay Mesa Road)						
SR-125 to Harvest Rd	**County**/City/Caltrans	4M(m)	47,000 (a)	14,068	0.30	A
Harvest Rd to Sanyo Ave	**County**/City/Caltrans	4M	37,000	14,068	0.38	A
Sanyo Ave to Enrico Fermi Dr	**County**/City	LC	16,200	9,456	0.58	D
Enrico Fermi Dr to Alta Rd	County	LC	16,200	6,089	0.38	C
Airway Road						
Sanyo Ave to Paseo de Las Americas	City	4M	40,000	5,649	0.14	A
Paseo de Las Americas to Michael Faraday	**County**/City	4M	37,000	4,533	0.12	A
Michael Faraday to Enrico Fermi Dr	**County**/City	LC	16,200	2,918	0.18	B
Enrico Fermi Dr to Airway Pl	County	4C	34,200	1,179	0.03	A
Siempre Viva Road						
Drucker Ln to SR-905	City	6P	60,000	6,127	0.10	A
SR-905 to Paseo de Las Americas	City	6P	60,000	17,146	0.29	A
Paseo de Las Americas to Michael Faraday	City	4C	30,000	7,639	0.25	A
Michael Faraday to Enrico Fermi Dr	City	4C	30,000	5,525	0.18	A
Enrico Fermi Dr to Airway Pl	County	LC	16,200	1,052	0.06	A
SR-125						
North of Otay Mesa Road	SBX	4-Toll	(b)	9,160	0.10	A
SR-905						
South of Siempre Viva Rd	City/**Caltrans**	4-Fwy	(b)	28,000	0.32	A
Sanyo Avenue						
Otay Mesa Rd to Airway Rd	City	4C	30,000	7,022	0.23	A
Enrico Fermi Drive						
Otay Mesa Rd to Airway Rd	County	TC	19,000	2,949	0.16	A
Airway Rd to Enrico Fermi Pl	City	4M	40,000	3,977	0.10	A
Enrico Fermi Pl to Siempre Viva Rd	City	4M	40,000	4,355	0.11	A
Siempre Viva Rd to Via De La Amistad	City	4M	40,000	7,588	0.19	A
Airway Place						
Airway Rd to Enrico Fermi Pl	County	2-I/C	16,200	50	0.00	A
Enrico Fermi Pl to Siempre Viva Rd	County	2-I/C	16,200	50	0.00	A
Alta Road						
Donovan State Prison Rd to Calzada De La Fuente	County	LC	16,200	5,873	0.36	C
Calzada De La Fuente to Lone Star Rd (Paseo De La Fuente)	County	TC	19,000	5,890	0.31	B
Lone Star Rd (Paseo De La Fuente) to Otay Mesa Rd	County	LC	16,200	6,057	0.37	C

City = Capacity of City segments is based on the upper limits of LOS E per the City of San Diego;
County = Capacity of County segments is based on the upper limits of LOS E per the County of San Diego; SBX = South Bay Expressway
Bold = Jurisdiction which capacity is based on; ADT= Average Daily Traffic; LOS= Level of Service; Class = Roadway Classification
v/c = Volume-to LOS E Capacity Ratio; < C = Operates at LOS C or better; 4-Fwy = 4-Lane Freeway; 4-Toll = 4-Lane Toll Facility;
6P = 6-Lane Prime Arterial; 4M(m) = Modified 4-Lane Major Road; 4M = 4-Lane Major Arterial; 4C = 4-Lane Collector; TC = Town Collector;
LC = Light Collector; 2-I/C = 2-Lane Industrial/Commercial Road;
(a) Additional lanes may be provided to accommodate turning movements and freeway access; hence the roadway capacity 45,000 for City or 47,000 for County at LOS E (half-way between a 4-lane Major & 6-Lane Prime Arterial).
(b) Capacity is 2,300 vehicles per hour per lane, LOS is based on peak hour volumes per Caltrans District 11 & HCM procedures, See Appendix I for LOS calculations

Existing – Arterial Roadway Segments

The level of service analysis based on daily analysis provides an overall average operating condition of the roadway segment over a 24-hour period. However, the daily level of service analysis does not provide any indication as to how a particular roadway segment may operate during the peak hours of travel. Peak hour operation for a roadway segment is particularly useful along arterial roadway segments (such as Interim SR-905/Otay Mesa Road) where there are several signalized intersections that are spaced at one-mile or less intervals. Therefore, in addition to evaluating Interim SR-905/Otay Mesa Road based on daily capacity it was also analyzed based on the Highway Capacity Manual's (HCM) Arterial Segment Methodology utilizing the Synchro software. The arterial segment analysis determines level of service based on the average travel speeds that occur on the roadway. The average travel speeds are significantly impacted by the delay a vehicle experiences as they travel through the signalized intersections. The arterial segment analysis was conducted for the AM and PM peak hours for the segments of Interim SR-905/Otay Mesa Road between Heritage Road and SR-125. The results of the analysis are summarized in Table 6.

Table 6 illustrates the existing conditions arterial level of service summary during the AM and PM peak hours. As shown in Table 6, all arterial roadway segments along Interim SR-905 (Otay Mesa Road) operate at an acceptable LOS C or better under existing conditions. A copy of the Synchro worksheets can be found in Appendix D.

Table 6 – Existing Conditions Arterial LOS Summary

Intersection	Jurisdiction	Direction of Travel	AM Peak Hour		PM Peak Hour	
			Speed (mph)	LOS	Speed (mph)	LOS
Interim SR-905 – Heritage Rd to Cactus Rd	City/Caltrans	Eastbound	34.9	B	30.7	B
		Westbound	33.5	B	26.6	C
Interim SR-905 – Cactus Rd to Britannia Blvd	City/Caltrans	Eastbound	30.7	B	33.7	B
		Westbound	32.7	B	30.4	B
Interim SR-905 – Britannia Blvd to La Media Rd	City/Caltrans	Eastbound	41.7	A	40.4	A
		Westbound	43.2	A	40.1	A
Interim SR-905 – La Media Rd to Piper Ranch Rd	City/Caltrans/County	Eastbound	40.2	A	39.0	A
		Westbound	36.3	A	32.3	B
SR-905 – Piper Ranch Rd to SR-125	City/Caltrans/County	Eastbound	34.7	B	35.1	A
		Westbound	27.0	C	26.5	C

LOS = Level of Service; Speed is measured in miles per hour (mph)

Existing – Intersections

Existing Intersection - Synchro Analysis

Table 7 illustrates the existing intersection levels of service summary under existing conditions. As can be seen from Table 7, all intersections currently operate at LOS D or better during both peak hours under existing conditions. A copy of the Synchro worksheets for the existing conditions can be found in Appendix D.

Existing Intersection - ILV Analysis

Table 8 summarizes the existing conditions ILV analysis. As shown in Table 8, all state-owned intersections currently operate under stable flow during the AM and PM peak hours. A copy of the ILV worksheets can be found in Appendix D.

Table 7 – Existing Conditions Intersection LOS Summary

Intersection	Jurisdiction	Traffic Control	Critical Move	AM Peak		PM Peak	
				Delay	LOS	Delay	LOS
Otay Mesa Rd (E-W) @ Heritage Rd (N-S)	City/Caltrans	Sig	Int.	25.6	C	32.8	C
Otay Mesa Rd (E-W) @ Cactus Rd (N-S)	City/Caltrans	Sig	Int.	11.4	B	16.7	B
Otay Mesa Rd (E-W) @ Britannia Blvd (N-S)	City/Caltrans	Sig	Int.	20.2	C	13.9	B
Otay Mesa Rd (E-W) @ La Media Rd (N-S)	City/Caltrans	Sig	Int.	11.2	B	18.7	B
Otay Mesa Rd (E-W) @ Piper Ranch Rd (N-S)	County/City/Caltrans	Sig	Int.	6.9	A	11.1	B
Otay Mesa Rd (E-W) @ SR-125 SB (N-S)	County/City/SBX	Sig	Int.	10.2	B	4.5	A
Otay Mesa Rd (E-W) @ SR-125 NB (N-S)	County/City/SBX	Sig	Int.	1.6	A	6.9	A
Otay Mesa Rd (E-W) @ Sanyo Av (N-S)	County/City	Sig	Int.	4.7	A	14.6	B
Otay Mesa Rd (E-W) @ Enrico Fermi Dr (N-S)	County	Sig	Int.	11.6	B	12.7	B
Otay Mesa Rd (E-W) @ Alta Rd (N-S)	County	AWSC	EB	14.3	B	8.3	A
			WB	0.0	A	0.0	A
			NB	7.7	A	7.6	A
			SB	8.1	A	8.5	A
			Int.	13.4	B	8.5	A
Airway Rd (E-W) @ Sanyo Av (N-S)	City	AWSC	EB	9.9	A	11.3	B
			WB	8.5	A	8.9	A
			NB	8.2	A	10.4	B
			SB	14.0	B	10.3	B
			Int.	11.8	B	10.1	B
Airway Rd (E-W) @ Paseo De Las Americas (N-S)	County/City	TWSC	NBL-T	11.3	B	11.8	B
			SB	8.8	A	9.2	A
Airway Rd (E-W) @ Michael Faraday (N-S)	County/City	OWSC	NBL	9.6	A	9.6	A
Airway Rd (E-W) @ Enrico Fermi Dr (N-S)	County/City	Sig	Int	14.7	B	16.5	B
Siempre Viva Rd (E-W) @ Drucker Ln (N-S)	City	Sig	Int.	14.1	B	16.2	B
Siempre Viva (E-W) @ SR-905 SB to EB Siempre Viva (N-S)	City/Caltrans	Sig	Int.	3.6	A	6.9	A
Siempre Viva (E-W) @ SR-905 SB to WB Siempre Viva (N-S)	City/Caltrans	OWSC	SB	10.4	B	10.4	B
Siempre Viva (E-W) @ SR-905 NB Ramp (N-S)	City/Caltrans	Sig	Int.	8.8	A	8.0	A
Siempre Viva (E-W) @ Paseo De Las Americas (N-S)	City	Sig	Int.	27.2	C	35.7	D
Siempre Viva (E-W) @ Michael Faraday (N-S)	City	TWSC	NB	10.9	B	13.1	B
			SBL-T	10.7	B	12.5	B
Siempre Viva (E-W) @ Enrico Fermi (N-S)	County/City	Sig	Int	26.3	C	31.6	C
Alta Rd (N-S) @ Lone Star Rd/ Paseo De La Fuente (E-W)	County	Sig	Int	0.8	A	1.9	A

Delay is measured in seconds/vehicle; LOS=Level of Service; Sig=signalized; AWSC = All-Way Stop-Controlled; TWSC = Two-Way Stop-Controlled; OWSC=One Way Stop Controlled; Int = Intersection; NB = Northbound Approach; SB = Southbound Approach; EB = Eastbound Approach; WB = Westbound Approach; NBL = Northbound Left; NBL-T= Shared Northbound Left-Through; SBL-T= Shared Southbound Left-Through; SBX = South Bay Expressway; E-W = East-West Roadway; N-S = North-South Roadway

Table 8 – Existing ILV Analysis				
Intersection	AM Peak		PM Peak	
	ILV/Hr	Operating Condition	ILV/Hr	Operating Condition
Otay Mesa Rd (E-W) @ Heritage Rd (N-S)	1,029	Stable Flow	1,114	Stable Flow
Otay Mesa Rd (E-W) @ Cactus Rd (N-S)	988	Stable Flow	1,083	Stable Flow
Otay Mesa Rd (E-W) @ Britannia Blvd (N-S)	970	Stable Flow	1,018	Stable Flow
Otay Mesa Rd (E-W) @ La Media Rd (N-S)	619	Stable Flow	787	Stable Flow
Otay Mesa Rd (E-W) @ Piper Ranch Rd (N-S)	414	Stable Flow	788	Stable Flow
Otay Mesa Rd (E-W) @ SR-125 SB (N-S)	482	Stable Flow	341	Stable Flow
Otay Mesa Rd (E-W) @ SR-125 NB (N-S)	577	Stable Flow	424	Stable Flow
Siempre Viva Rd (E-W) @ SR-905 SB to EB Siempre Viva Rd (N-S)	275	Stable Flow	330	Stable Flow
Siempre Viva Rd (E-W) @ SR-905 NB (N-S)	339	Stable Flow	394	Stable Flow

ILV/Hr = Intersecting Lane Vehicles per hour; E-W = East-West; N-S = North-South
< 1,200 ILV/Hr = Stable flow;
1,200 – 1,500 ILV/Hr = Unstable Flow;
1,500 ILV/Hr = Capacity;

SECTION IV – EXISTING PLUS PROJECT IMPACTS

PUBLIC FACILITIES ELEMENT IN COUNTY

According to page XII-4-20 of the Public Facility Element for San Diego County, a discretionary project which has a significant impact on roadways will be required, as a condition of approval, to make "improvements or other measures necessary to mitigate traffic impacts to avoid reduction in the existing Level of Service below 'D' on off-site and on-site abutting County of San Diego's Circulation Element roads. New development that would significantly impact congestion on roads at LOS 'E' or 'F', either currently or as a result of the project, will be denied unless improvements are scheduled to increase the LOS to 'D' or better or appropriate mitigation is provided. Appropriate mitigation would include a fair share contribution in the form of road improvements or a fair share contribution to an established program or project. If impacts cannot be mitigated, the project will be denied unless a specific statement of overriding findings is made pursuant to Section 15091(b) and 15093 of the State CEQA Guidelines."

The *Public Facility Element* for the County of San Diego also requires that all on-site County Circulation Element roads operate at Level of Service C or better. If the Level of Service at an on-site County Circulation Element road is reduced below LOS C, the proposed project must provide appropriate mitigation measures. A copy of excerpts from the County's *Public Facility Element* can be found in Appendix A.

LEVELS OF SIGNIFICANCE STANDARDS

The roadway segments and intersections in the vicinity of the proposed project are located in the jurisdiction of both the City and County of San Diego. The criteria for determining project significance depend on whether the roadway segment or intersection is located in the City or the County. Both the City's and the County's significance of impact criteria are discussed below.

City of San Diego

For projects deemed complete on or after January 1, 2007, the City of San Diego has adopted a modification in the significance criteria in the level of service thresholds for facilities operating at LOS E or F. Therefore, the study utilizes the adopted level of significance thresholds to assess the proposed project's traffic impact on the roadway network operating at LOS E or F located within the City's jurisdiction. The City of San Diego's Significance Transportation Impact Measures and significance thresholds per California Environmental Quality Act (CEQA) that the City has adopted in January 2007 and revised in January 2011are summarized in Table 9. A copy of excerpts from the City of San Diego's Significance Determination Thresholds, adopted January 2011 is provided in Appendix A. Since the City of San Diego considers LOS D to be an acceptable level of service, the City of San Diego's Significant Transportation Impact Measures were only applied to the segments and intersections located within the City of San Diego that were found to operate at LOS E or F.

County of San Diego

Although the *Public Facility Element (PFE)* sets standards as to which level of service roadways and intersections must operate within the County (i.e. requires operation of LOS D or better), it does not establish a guideline to evaluate whether a project is significant if it adds traffic to a roadway facility that is currently operating at an unacceptable LOS E or F. Thus, the *County of San Diego Guidelines for Determining Significance, Second Modification August 24, 2011* was developed to evaluate the significance of traffic impacts on roadways and intersections which are currently operating at LOS E or F. A summary of the County's Guidelines is provided in Table 9. Excerpts from the County's Guidelines are provided in Appendix A.

Table 9 – Measures of Significant Project Impacts				
City of San Diego				
LOS w/Project	Allowable Increase/Decrease Due to Project Impacts (for projects deemed complete after January 1, 2007)			
	Intersection		Roadway Segments	
	Delay (sec)		V/C	Speed (mph)
E	2.0		0.02	1.0
F	1.0		0.01	0.5
County of San Diego				
LOS	Allowable Increase on Congested Roads and Intersections			
	Intersections		Road Segments	
	Signalized	Unsignalized	2-Lane Road	4-Lane Road	6-Lane Road
LOS E	Delay of 2 seconds or less	20 or less peak hour trips on a critical movement	200 ADT	400 ADT	600 ADT
LOS F	Either a Delay of 1second, or 5 peak hour trips or less on a critical movement	5 or less peak hour trips on a critical movement	100 ADT	200 ADT	300 ADT
County Notes: – A critical movement is an intersection movement (right turn, left turn, through-movement) that experiences excessive queues, which typically operate at LOS F. Also if a project adds significant volume to a minor roadway approach, a gap study should be provided that details the headways between vehicles on the major roadway. – By adding proposed project trips to all other trips from a list of projects, this same table must be used to determine if total cumulative impacts are significant. If cumulative impacts are found to be significant, each project that contributes additional trips must mitigate a share of the cumulative impacts. – The County may also determine impacts have occurred on roads even when a project's traffic or cumulative impacts do not trigger an unacceptable level of service, when such traffic uses a significant amount of remaining road capacity. – For determining significance at signalized intersection with LOS F conditions, the analysis must evaluate both the delay and the number of trips on a critical movement, exceedance of either criteria result in a significant impact.				
ADT = Average Daily Traffic; LOS = Level of Service, sec = Seconds of Delay per Vehicle				

Roadway Segments

As shown in Table 9, per the County's Guidelines, "[t]raffic volume increases from public or private projects that result in one or more of the following criteria will have a significant traffic volume or level of service traffic impact on a road segment:

- The additional or redistributed ADT generated by the proposed project will significantly increase congestion on a Circulation Element Road or State Highway currently operating at LOS E or LOS F, or will cause a Circulation Element Road or State Highway to operate at a LOS E or LOS F as a result of the proposed project as identified in Table [9], or

- The additional or redistributed ADT generated by the proposed project will cause a residential street to exceed its design capacity."

As discussed on pages 13 and 14 of the *County of San Diego Guidelines for Determining Significance, Second Modification August 24, 2011*, an increase of the daily thresholds established for roadway segments operating at LOS E would result in only one additional car every 2.4 minutes per lane while the thresholds established for roadway segments operating at LOS F would result in only one additional car every 4.8 minutes. Therefore, the thresholds identified in Table 9, in most cases, would result in changes to traffic flow that would not be noticeable to the average driver and would thus not constitute a significant impact on the roadway.

The County guidelines also states that "For large projects, controversial projects and/or projects which are preparing Environmental Impact Reports, more detailed evaluations to verify the applicability of the significance thresholds for the individual project conditions may be necessary. Additional evaluations may include analysis of vehicle headways, speeds, average gaps, queues, delay, and/or other factors."

Two-Lane Highways

Intersection Spacing Over One (1) Mile

In the *County of San Diego Guidelines for Determining Significance, Second Modification August 24, 2011* the County of San Diego established a higher capacity and a higher impact significance level for two-lane highways with signalized intersection spacing over one mile. Table 10 provides a summary of the level of service criteria and guidelines for significance for two-lane highways with intersection spacing over one-mile.

Table 10 – Measures of Significance on 2-Ln Hwys w/ Signalized Intersection Spacing > 1 Mile

Level of Service	LOS Criteria	Impact Significance Level
E	> 16,200 ADT	>325 ADT
F	> 22,900 ADT	>225 ADT

Note: Where detailed data is available, the Director of Public Works may also accept a detailed level of service analysis based upon the two-lane highway analysis procedures provided in the Chapter 20 Highway Capacity Manual

Intersection Spacing Less Than One (1) Mile

"Similar to the experience of drivers in urban areas with closely space intersections, the functionality of two-lane highway conditions with signalized intersection spacing under one-mile becomes constrained not due to the segment capacity but the intersection operations. Therefore the assessment of operates of intersection on two-lane highways shall be guided by a Level of Service standard. Level of Service for purposes of this significance guideline is based upon the overall intersection operations similar - to Urban Street analysis in Chapter 15 Highway Capacity Manual." Impacts for the two-lane highways with signalized intersection under one mile spacing will be determined by evaluating the intersection impact criteria identified in Table 11.

Table 11 – Measures of Significance on 2-Ln Hwys w/ Signalized Intersection Spacing < 1 Mile

Level of Service	Adjacent Signalized Intersection
E	Delay of 2 seconds
F	Delay of 1 second, or 5 peak hour trips on a critical movement

Notes:
– A critical movement is an intersection movement (right turn, left turn, through-movement) that experiences excessive queues which typically operate at LOS F.
– By adding proposed project trips to all other trips from a list of projects, these same tables are used to determine if total cumulative impacts are significant. If cumulative impacts are found to be significant, each project is responsible for mitigating its share of the cumulative impact.
– The County may also determine impacts have occurred on roads even when a project's traffic or cumulative impacts do not trigger an unacceptable level of service, when such traffic uses a significant amount of remaining road capacity.

It should be noted that per the *County of San Diego Guidelines for Determining Significance, Second Modification August 24, 2011,* "[i]mpacts related to operational features on two-lane highways will be evaluated on a case-by-case basis based upon traffic flow patterns, geometrics, available sight distance, accident histories, and other factors."

Signalized Intersections

"Traffic volume increases from public or private projects that result in one or more of the following criteria will have a significant traffic volume or level of service traffic impact on a signalized intersection":

- "The additional or redistributed ADT generated by the proposed project will significantly increase congestion on a signalized intersection currently operating at LOS E or LOS F, or will cause a signalized intersection to operate at a LOS E or LOS F as identified in Table [9]."

- Based upon an evaluation of existing accident rates, the signal priority list, intersection geometrics, proximity of adjacent driveways, sight distance or other factors, the project would significantly impact the operations of the intersection."

As discussed on page 16 of the *County of San Diego Guidelines for Determining Significance, Second Modification August 24, 2011*, an increase in delay of two seconds or less, the threshold established for signalized intersections operating at LOS E, "...is a small fraction of the typical cycle length for a signalized intersection that ranges between 60 and 120 seconds. The likelihood of increased queues forming due to the additional two seconds of delay is low." Thus, the increase in delay of two (2) seconds or less, on average, would result in changes to traffic flow that would not be noticeable to the average driver and would thus not constitute a significant impact. Since small changes and disruptions to the traffic flow at a signalized intersection can have a greater effect on the overall intersection operation when the intersection is operating at LOS F, versus LOS E, a more stringent guideline of one (1) second of delay was established for intersections operating at LOS F.

The five (5)-peak hour trip threshold, established for the critical movement of a signalized intersection operating at LOS F, when spread out over the peak hour, results in an increase of one (1) vehicle every 12 minutes or 720 seconds. This increase would not be noticeable to the average driver because one additional vehicle during a 12-minute interval on average would clear the traffic signal cycles well within the 12-minute period. Further, even if all five (5) additional peak hour vehicles arrived at the same time, these trips would also, on average, clear the traffic cycle and the existing queue lengths would be re-established. Thus, the increase of five (5) peak hour trips to a critical movement at a signalized intersection, on average, would result in changes to traffic flow that would not be noticeable to the average driver and would thus not constitute a significant impact. (See page 17 of the County's *Guidelines for Determining Significance* provided in Appendix A.)

Unsignalized Intersections

"Traffic volume increases from public or private projects that result in one or more of the following criteria will have a significant impact at an unsignalized intersection as listed in Table [9] and described as text below:"

- "The additional or redistributed ADT generated by the proposed project will add 21 or more peak hour trips to a critical movement of an unsignalized intersection, and cause an unsignalized intersection to operate below LOS D, or

- The additional or redistributed ADT generated by the proposed project will add 21 or more peak hour trips to a critical movement of an unsignalized intersection currently operating at LOS E, or

- The additional or redistributed ADT generated by the proposed project will add 6 or more peak hour trips to a critical movement of an unsignalized intersection, and cause the unsignalized intersection to operate at LOS F, or

- The additional or redistributed ADT generated by the proposed project will add 6 or more peak hour trips to a critical movement of an unsignalized intersection currently operating at LOS F, or

- Based upon an evaluation of existing accident rates, the signal priority list, intersection geometrics, proximity of adjacent driveways, sight distance or other factors, the project would significantly impact the operations of the intersection."

As discussed on page 18 of the *County of San Diego Guidelines for Determining Significance, Second Modification August 24, 2011,* the addition of 20 peak hour trips to a critical movement, would result in an increase of one (1) vehicle every 3.0 minutes or 180 seconds. "Assuming the average wait time for a vehicle in the critical movement queue is less than 3.0 minutes, which is typical for LOS E conditions; this would not be noticeable to the average driver and would not be considered a significant impact." Five (5) – trips spread out over an hour would result in an increase of one (1) vehicle every 12.0 minutes or 720 seconds. "This typically exceeds the average wait time in the queue and would not be noticeable to the average driver." (See page 18 of the County's *Guidelines for Determining Significance* provided in Appendix A.)

Regionally Significant Arterials

For Regionally Significant Arterials (RSA), such as Interim SR-905 Caltrans utilizes the *San Diego Traffic Engineers' Council (SANTEC)/Institute of Transportation Engineers (ITE) Guidelines For Traffic Impact studies (TIS) in the San Diego Region* to determine significance. A summary of the SANTEC/ITE Guidelines are provided in Table 12.

Table 12 – SANTEC/ITE Guidelines for Measures of Significant Project Impacts

LOS with Project	Allowable Change due to Project Impact					
	Freeways		Roadway Segments		Signalized Intersections	Ramps with > 15 min. delay
	V/C	Speed (mph)	V/C	Speed (mph)	Delay (sec.)	Delay (min.)
E & F	0.01	1	0.02	1	2	2
V/C = Volume to Capacity Ratio						

It should be noted that although Caltrans utilizes the SANTEC/ITE Guidelines summarized in Table 12 to determine significance on arterial roadway segments based on peak hour operating conditions, the City of San Diego still determines the project significance for the roadway segment based on average daily operating conditions and the change in volume-to-capacity ratio. With further analysis, however, the City of San Diego considers that even if an arterial roadway segment is determined to be impacted based on the average daily operating conditions, the impact would be less than significant and mitigation would not be required if the following conditions are satisfied:

1. The roadway segment is already built out to its community plan classification,

2. The signalized endpoints of the roadway segment operate acceptably, and

3. The HCM arterial analysis for the roadway segment operates acceptably.

Since the segments of Interim SR-905 (Otay Mesa Road) from Heritage Road to La Media Road are currently already built out to their community plan classification of a 6-lane Prime Arterial, and since these roadway segments are currently under the jurisdiction of the City of San Diego as well as Caltrans this traffic study utilizes the City of San Diego's methodology described above to assess whether a project's impact would be considered significant.

It should be noted that the segment of Interim SR-905 (Otay Mesa Road) between La Media Road and Piper Ranch Road is currently only constructed to provide five (5) travel lanes (2 eastbound lanes and 3 westbound lanes) and is thus not yet constructed to its community plan classification of a 8-lane Major.

The segment of Interim SR-905 (Otay Mesa Road) from Piper Ranch Road to the SR-125 is located under the jurisdiction of the County, City, and Caltrans; however, the County of San Diego's roadway capacities and levels of significance have been utilized throughout this report to assess the impacts on this roadway segment. Since this roadway segment is a regionally significant arterial segment, the County considers that if the HCM arterial roadway segment operates acceptably and the signalized endpoints of the roadway segment also operate acceptably, then there is no significant impact and mitigation will not be required.

Consistent with the *Public Facility Element* the criteria described above for roadway segments, intersections, and regionally significant arterials were applied to segments and intersections that operate at LOS E or LOS F. It should be noted that as outlined in the *Public Facility Element*, if the addition of the project reduces an acceptable level of service (LOS D or better) to and unacceptable level (LOS E or F), it is considered to be significant regardless of the volume of traffic it adds to the segment or intersection.

Caltrans

Caltrans Guide for the Preparation of Traffic Impact Studies, December 2002 requires that State highway facilities (i.e., freeway segments, signalized intersections, on-or off-ramps, etc.) maintain a target LOS at the transition between LOS C and LOS D. See Appendix A for excerpts from Caltrans traffic impact guidelines.

Definition of Direct and Cumulative Impact in the City of San Diego and the County of San Diego

The County's *Guidelines for Determining Significance* adopted on August 24, 2011 was developed to evaluate the significance of traffic impacts on roadways and intersections which are currently operating at LOS E or F. It should be noted that the significance guidelines summarized in Table 9 are currently only utilized by the County of San Diego to determine if a project has a significant direct and/or future impact. A project is considered to have a significant cumulative impact if it adds any traffic to a roadway segment and/or intersection that operates at LOS E or F under cumulative conditions and the total cumulative traffic added to the roadway segment and/or intersection exceeds the value identified in Table 9. The City of San Diego defines cumulative traffic impacts as those projected to occur at some point after a proposed development becomes operational, such as when the affected community plan area reaches full planned build out.

Since the project is located in the County of San Diego, the traffic study is prepared in accordance with the guidelines provided by the County of San Diego. However, the City's significance thresholds are utilized in analyzing the roadway segments and intersections located in the City of San Diego. The traffic study classifies direct and cumulative impacts based on CEQA.

The City of San Diego's Methodology

The City of San Diego identifies direct impacts based on a comparison of two scenarios: (1) Existing traffic conditions plus cumulative (approved) projects versus (2) Existing traffic conditions plus cumulative (approved) projects plus the proposed project. The City's methodology is designed to capture impacts from projects that will likely be open by the time the proposed project opens. Compared to the County's methodology, this type of analysis creates a third scenario, a "near-term cumulative," in addition to the County's two standard analyses: (1) Existing plus Project and (2) Cumulative (2020). However, as explained below, the County's Year 2020 Cumulative Impact Analysis is equivalent to (if not more conservative than) the City's "near-term cumulative" impact methodology. The County, however, would require projects contributing to a cumulative impact to mitigate for their contribution to the impact. The City would mitigate those impacts based on their direct impact classification.

The County of San Diego's 2020 Cumulative Analysis

The County's 2020 cumulative analysis includes all impacts that would occur in the City's near-term scenario, and more. The County's 2020 cumulative analysis is more conservative than the City's near-term cumulative analysis because it includes projects that cannot be constructed without first processing additional discretionary permits. For example, the County's 2020 cumulative analysis includes Tentative Map projects (such as TM 5405, TM 5505, and TM 5549) that are not approved and, once approved, cannot apply for building permits without first recording a Final Map and processing a Site Plan permit, as required by the East Otay Mesa Specific Plan. Thus, application for a Site Plan (or Major Use Permit), not a Tentative Map, is a more appropriate threshold for a near-term cumulative project. To account for this factor, in the cumulative 2020 analysis, traffic for projects with a Site Plan are counted at 100% and a reduction factor is used to estimate 2020 traffic for Tentative Maps using marketing data prepared for the City of San Diego. In a straight near-term analysis, the Tentative Maps would not be included at all.

The County's East Otay Mesa cumulative analysis methodology uses expected development conditions as of the year 2020, thus it assumes SR-905 Phases 1A and 1B are completed. Phase 1A is now open to traffic and Phase 1B is scheduled to open to traffic in 2012. Normally, future road improvements would not be assumed in a near-term analysis. However, in this case it is reasonable to assume completion of Phases 1A and 1B because they are fully funded, Phase 1A is complete, and construction of Phase 1B has already begun. In addition, no project that requires Phase 1A or 1B of the SR-905 for mitigation will be able to obtain a Final Map (for subdivisions) or a Building Permit (for other permits) before Phases 1A *and* 1B are open to traffic, as is further explained below.

Near Term Cumulative Conditions

The County's analysis found the potential for impacts on the Interim SR-905 (Otay Mesa Road) caused by "near-term" cumulative projects to be less than significant. Specifically, there are nine near-term cumulative projects: California Crossings, CCA (a correctional facility), COPART, FEDEX, Salvage Yards, Sunroad Interim Uses, Travel Plaza, Vulcan Materials, and Otay Hills. Together, those projects produce 38,357 ADT, which is less than one-third (28%) of the trips included in the County's 2020 cumulative analysis. Of the 38,357 ADT, the majority of the trips (59%) are from one project, California Crossings. California Crossings, which produces 22,785 trips, is located very close to the City/County of San Diego boundary, so it is more likely to affect City streets than most of the other near-term cumulative projects. Nonetheless, California Crossings does not require SR-905 Phase 1B for mitigation. California Crossings does rely on the completion of SR-905 Phase 1A, but this is not a development constraint because Phase 1A is now completed. It is also unlikely that the project would open before completion of Phase 1B for three reasons:

1. The project is not expected to get Site Plan approval (let alone building permits) until late 2011;

2. The EIR for California Crossings says construction is expected to take 14 months and tenant improvements would take another 6 months, putting the estimated opening day for California Crossings in 2013; and

3. Phase 1B is expected to be completed a year earlier (mid 2012) than the estimated opening day for California Crossings.

The second-largest project, Travel Plaza, produces 5,116 trips, and its traffic study indicated no direct traffic impacts west of the SR-125. Salvage Yards, which produces 2,408 trips, has no impacts within the City. CCA, which is located at the eastern edge of East Otay Mesa, produces 2,323 trips and does not rely on any phase of SR-905 for mitigation. Otay Hills produces 2,189 trips, and although the traffic study has not yet been completed for this project the first phase of this project is not anticipated to come on-line until around 2014 which is after the completion of Phase 1B of the SR-905. FedEx, with 1,598 trips, had only one direct impact within the City and the mitigation has already been completed. The three smallest projects (Vulcan, Copart, and Sunroad Interim Uses) identified no direct impacts.

For the reasons cited above, it's reasonable to assume that the Project, when evaluated in conjunction with near-term cumulative projects in East Otay Mesa, will not have significant impacts on the City of San Diego segments of Otay Mesa Road (Interim SR-905) before the freeway SR-905 Phases 1A and 1B are completed.

Traffic impacts identified on other City roads and intersections will require mitigation and construction of improvements, or should the City establish a fee mitigation program, a fair-share payment mechanism. As with any other outside jurisdiction, should impacts occur; the project will be responsible for mitigation measures based on CEQA and coordination with the City of San Diego.

For the Project, the cumulative traffic impacts in the City following completion of SR-905 occur at the following locations:

- Airway Road/Sanyo Avenue intersection; and the
- Siempre Viva Road/Michael Faraday Drive intersection.

Mitigation for these impacts is proposed and discussed in detail in Section VIII of this report.

EXISTING + PHASE 1 PROJECT LEVEL OF SERVICE CONDITIONS

This scenario analyzes the traffic impacts of Phase 1 of the proposed project under existing conditions. Figures 16 and 17 illustrate the existing plus Phase 1 project traffic volumes.

As illustrated in Figures 3-9 (previously provided in Section II), one of the primary access routes to the project site is via Siempre Viva Road. The segment of Siempre Viva Road between the CHP facility access east of Enrico Fermi Drive to Airway Place; however, is currently only constructed to provide two (2) westbound travel lanes. Therefore, in order to provide access to the project site, as part of the development of Phase 1 the applicant will be required to widen the south side of the segment of Siempre Viva Road between the CHP facility access east of Enrico Fermi Drive to Airway Place to provide one (1) eastbound travel lane with the appropriate transitions such that the improved facility can accommodate one (1) travel lane in each direction.

In addition, the segment of Airway Place between Airway Road and Siempre Viva Road will also be modified as part of Phase 1 of the project to accommodate two (2)-way traffic with the cross-section equivalent to that of a two (2)-lane Industrial/Commercial Road, capacity of 16,200 ADT at LOS E.

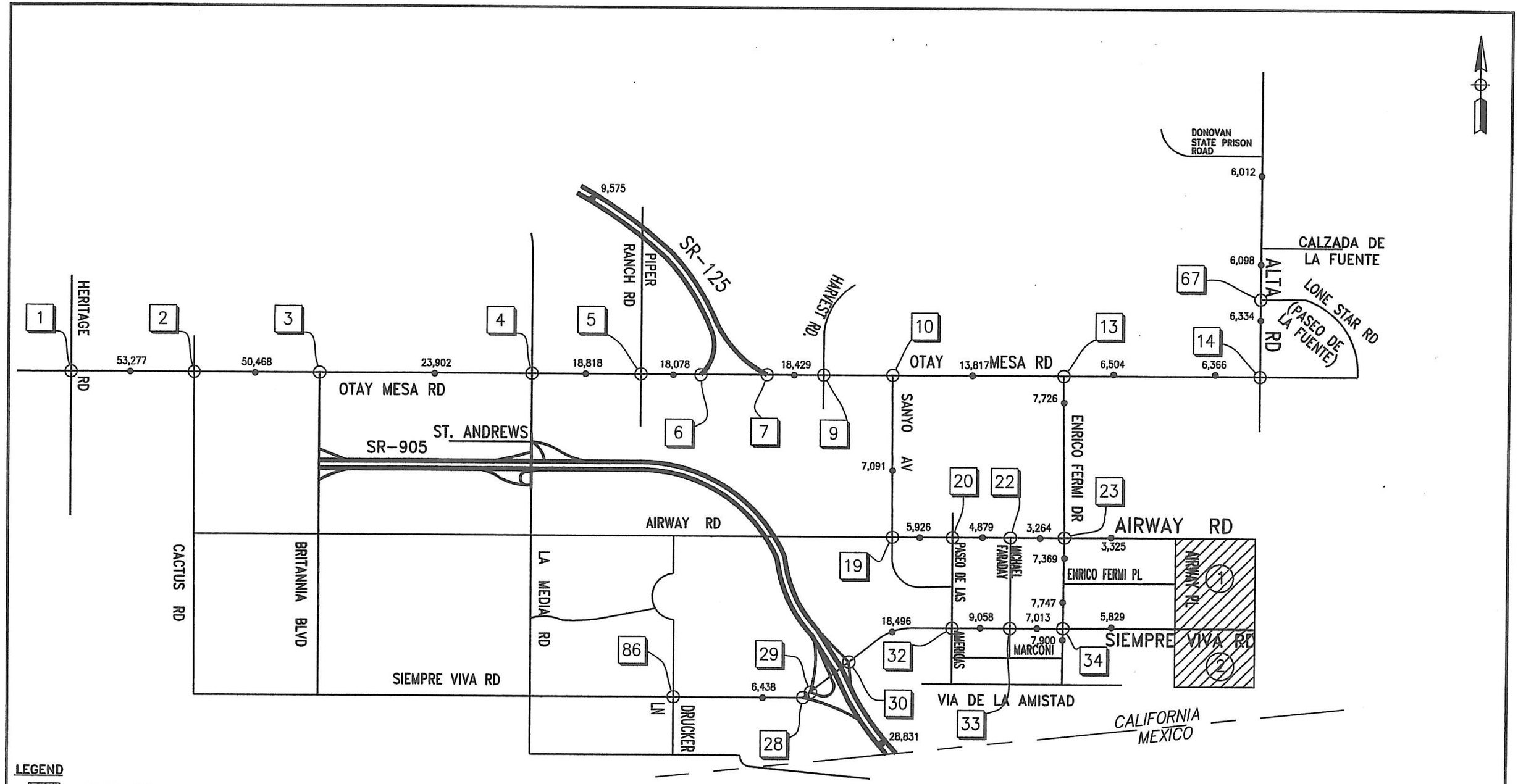
For analysis purposes, under existing plus Phase 1 conditions the segment of Siempre Viva Road between Enrico Fermi Drive and Airway Place was assumed to have the capacity equivalent to that of a Light Collector Road, 16,200 ADT at LOS E.

Existing + Phase 1 Project – Roadway Segments

Table 13 summarizes the daily roadway segment level of service analysis under the existing without and with Phase 1 project conditions. As shown in Table 13, based on average daily conditions the following roadway segment operates at an unacceptable LOS E under existing plus Phase 1 project conditions:

- Otay Mesa Road (Old Otay Mesa Rd) between Sanyo Avenue and Enrico Fermi Drive (LOS D without the project and LOS E with Phase 1 of the project).

All other roadway segments continue to operate at LOS D or better under existing plus Phase 1 of the proposed project conditions.



LEGEND

- ▨ – PROJECT SITE
- ● Z,ZZZ – AVERAGE DAILY TRAFFIC
- [XX] – INTERSECTION ID #, SEE FIGURE 17 FOR INTERSECTION PEAK HOUR TURNING VOLUMES
- (XX) – PHASE OF DEVELOPMENT

NOTE: INTERSECTION NUMBERS ARE NOT SEQUENTIAL

Darnell & ASSOCIATES, INC.

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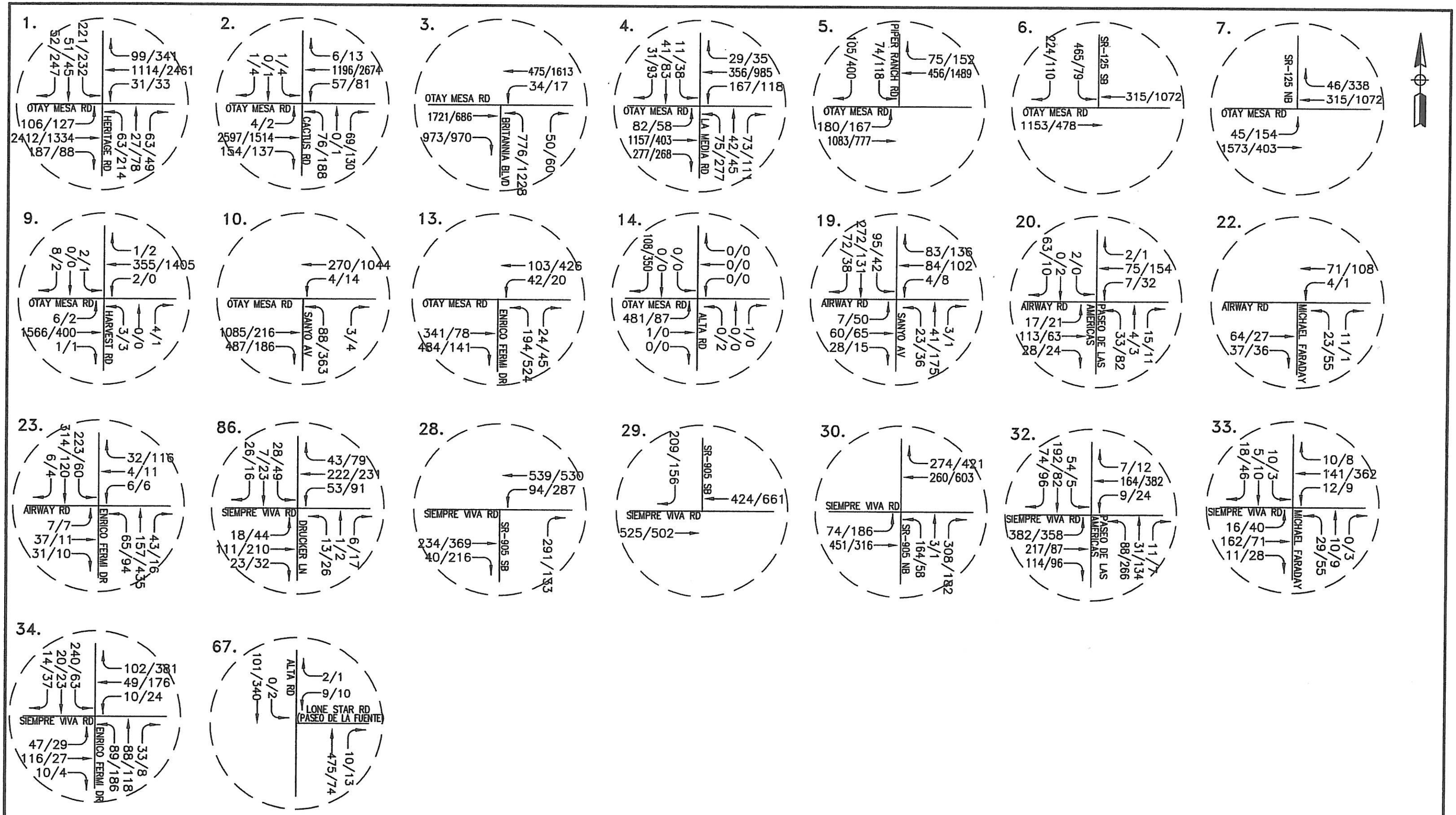
FIGURE 16

EXISTING + PROJECT PHASE 1 DAILY TRAFFIC VOLUMES



LEGEND

→ – DIRECTION OF TRAVEL

XX/YY – AM/PM PEAK HOUR TURN VOLUMES

Darnell & ASSOCIATES, INC.

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FIGURE 17

EXISTING + PROJECT PHASE 1
PEAK HOUR TRAFFIC VOLUMES

Table 13 – Existing + Project Phase 1 Conditions Roadway Segment Daily LOS Summary

Roadway Segment	Jurisdiction	Class	Capacity (LOS E)	Existing			Existing + Project Phase 1					
				ADT	V/C	LOS	Proj. Tr	ADT	V/C	LOS	ΔV/C	Sig
Interim SR-905 (Otay Mesa Rd)												
Heritage Rd to Cactus Rd	City/Caltrans	6P	60,000	49,192	0.82	C	4,085	53,277	0.89	D	0.07	No
Cactus Rd to Britannia Blvd	City/Caltrans	6P	60,000	46,383	0.77	C	4,085	50,468	0.84	D	0.07	No
Britannia Blvd to La Media Rd	City/Caltrans	6P	60,000	20,025	0.33	A	3,877	23,902	0.40	A	0.07	No
La Media Rd to Piper Ranch Rd	City/Caltrans	4M(m)	45,000(a)	14,941	0.33	A	3,877	18,818	0.42	B	0.09	No
Piper Ranch Rd to SR-125	County/City/Caltrans	6P	57,000	14,132	0.25	A	3,946	18,078	0.32	A	0.07	No
Otay Mesa Road (Old Otay Mesa Road)												
SR-125 to Harvest Rd	County/City/Caltrans	4M(m)	47,000(a)	14,068	0.30	A	4,361	18,429	0.39	A	0.09	No
Harvest Rd to Sanyo Ave	County/City/Caltrans	4M	37,000	14,068	0.38	A	4,361	18,429	0.50	B	0.12	No
Sanyo Ave to Enrico Fermi Dr	County/City	LC	16,200	9,456	0.58	D	**4,361**	**13,817**	**0.85**	**E**	**0.27**	**Yes**
Enrico Fermi Dr to Alta Rd	County	LC	16,200	6,089	0.38	C	415	6,504	0.40	C	0.02	No
Airway Road												
Sanyo Ave to Paseo de Las Americas	City	4M	40,000	5,649	0.14	A	277	5,926	0.15	A	0.01	No
Paseo de Las Americas to Michael Faraday	County/City	4M	37,000	4,533	0.12	A	346	4,879	0.13	A	0.01	No
Michael Faraday to Enrico Fermi Dr	County/City	LC	16,200	2,918	0.18	B	346	3,264	0.20	B	0.02	No
Enrico Fermi Dr to Airway Pl	County	4C	34,200	1,179	0.03	A	2,146	3,325	0.10	A	0.07	No
Siempre Viva Road												
Drucker Ln to SR-905	City	6P	60,000	6,127	0.10	A	311	6,438	0.11	A	0.01	No
SR-905 to Paseo de Las Americas	City	6P	60,000	17,146	0.29	A	1,350	18,496	0.31	A	0.02	No
Paseo de Las Americas to Michael Faraday	City	4C	30,000	7,639	0.25	A	1,419	9,058	0.30	A	0.05	No
Michael Faraday to Enrico Fermi Dr	City	4C	30,000	5,525	0.18	A	1,488	7,013	0.23	A	0.05	No
Enrico Fermi Dr to Airway Pl	County	LC	16,200	1,052	0.06	A	4,777	5,829	0.36	C	0.30	No
SR-125												
North of Otay Mesa Rd	SBX	4-Toll	(b)	9,160	0.10	A	415	9,575	0.10	A	0.00	No
Existing SR-905												
South of Siempre Viva Rd	City/Caltrans	4-Fwy	(b)	28,000	0.32	A	831	28,831	0.33	A	0.01	No
Sanyo Avenue												
Otay Mesa Rd to Airway Rd	City	4C	30,000	7,022	0.23	A	69	7,091	0.24	A	0.01	No
Enrico Fermi Drive												
Otay Mesa Rd to Airway Rd	County	TC	19,000	2,949	0.16	A	4,777	7,726	0.41	C	0.25	No
Airway Rd to Enrico Fermi Pl	City	4M	40,000	3,977	0.10	A	3,392	7,369	0.18	A	0.08	No
Enrico Fermi Pl to Siempre Viva Rd	City	4M	40,000	4,355	0.11	A	3,392	7,747	0.19	A	0.08	No
Siempre Viva Rd to Via De La Amistad	City	4M	40,000	7,588	0.19	A	312	7,900	0.20	A	0.01	No
Airway Place (c)												
Airway Rd to Enrico Fermi Pl	County	2-I/C	16,200	50	0.00	A	173	223	0.01	A	0.01	No
Enrico Fermi Pl to Siempre Viva Rd	County	2-I/C	16,200	50	0.00	A	173	223	0.01	A	0.01	No
Alta Road												
Donovan State Prison Rd to Calzada De La Fuente	County	LC	16,200	5,873	0.36	C	139	6,012	0.37	C	0.01	No
Calzada De La Fuente to Lone Star Rd (Paseo De La	County	TC	19,000	5,890	0.31	B	208	6,098	0.32	C	0.01	No
Lone Star Rd (Paseo De La Fuente) to Otay Mesa Rd	County	LC	16,200	6,057	0.37	C	277	6,334	0.39	C	0.02	No

City = Capacity of City segments is based on the upper limits of LOS E per the City of San Diego; County = Capacity of County segments is based on the upper limits of LOS E per the County of San Diego;
Bold = Jurisdiction which capacity is based on; ADT= Average Daily Traffic; LOS= Level of Service; Class = Roadway Classification; v/c = Volume-to LOS E Capacity Ratio; < C = Operates at LOS C or better;
SBX = South Bay Expressway; 4-Fwy = 4-Lane Freeway;4-Toll = 4-Lane Toll Facility; 6P = 6-Lane Prime Arterial; 4M(m) = Modified 4-Lane Major Road; 4M = 4-Lane Major Arterial; 4C = 4-Lane Collector;
TC = Town Collector; LC = Light Collector; 2-I/C = 2-Lane Industrial/Commercial Road;
(a) Additional lanes may be provided to accommodate turning movements and freeway access; hence the roadway capacity 45,000 for City or 47,000 for County at LOS E (half-way between a 4-lane Major & 6-Lane Prime Arterial).
(b) Capacity is 2,300 vehicles per hour per lane, LOS is based on peak hour volumes per Caltrans District 11 & HCM procedures, See Appendix I for LOS calculations
(c) Roadway is constructed as a 2-lane, one-way non-circulation element roadway under existing conditions and as a 2-lane, 2-way Industrial Commercial Collector under Existing Plus Project Conditions

The segment of Otay Mesa Road (Old Otay Mesa Road) between Sanyo Avenue and Enrico Fermi Drive operates at LOS D under existing conditions. With the addition of 4,361 ADT from Phase 1 of the proposed project, this segment of Otay Mesa Road (Old Otay Mesa Road) will operate at LOS E. Per the PFE a significant impact will occur if the project reduces an acceptable level of service (LOS D or better) to and unacceptable level (LOS E or F). Since Phase 1 of the project lowers the existing level of service from LOS D to LOS E, based on average daily conditions, Phase 1 of the project is considered to have a significant direct impact on the segment of Otay Mesa Road (Old Otay Mesa Road) between Sanyo Avenue and Enrico Fermi Drive. See Section VIII for a discussion on how the developer will mitigate its significant direct impact.

Existing + Phase 1 – Arterial Roadway Segments

The level of service analysis based on daily analysis provides an overall average operating condition of the roadway segment over a 24-hour period. However, the daily level of service analysis does not provide any indication as to how a particular roadway segment may operate during the peak hours of travel. Peak hour operation for a roadway segment is particularly useful along arterial roadway segments (such as Interim SR-905/Otay Mesa Road) where there are several signalized intersections that are spaced at one-mile or less intervals. Therefore, in addition to evaluating Interim SR-905/Otay Mesa Road based on daily capacity it was also analyzed based on the Highway Capacity Manual's (HCM) Arterial Segment Methodology utilizing the Synchro software. The arterial segment analysis determines level of service based on the average travel speeds that occur on the roadway. The average travel speeds are significantly impacted by the delay a vehicle experiences as they travel through the signalized intersections. The arterial segment analysis was conducted for the AM and PM peak hours for the segments of Interim SR-905/Otay Mesa Road between Heritage Road and SR-125. The results of the analysis are summarized in Table 14.

Table 14 illustrates the existing conditions arterial level of service summary during the AM and PM peak hours. As shown in Table 14, all arterial roadway segments along Interim SR-905 (Otay Mesa Road) operate at an acceptable LOS C or better under existing plus Phase 1 conditions. A copy of the Synchro worksheets can be found in Appendix D and E.

Table 14 – Existing + Project Phase 1 Arterial LOS Summary						
AM Peak Hour						
Roadway Segments	Jurisdiction	Direction of Travel	Existing		Existing + Phase 1	
			Speed (mph)	LOS	Speed (mph)	LOS
Interim SR-905 – Heritage Rd to Cactus Rd	City/Caltrans	Eastbound	34.9	B	33.0	B
		Westbound	33.5	B	34.5	B
Interim SR-905 – Cactus Rd. to Britannia Blvd.	City/Caltrans	Eastbound	30.7	B	28.6	B
		Westbound	32.7	B	38.3	A
Interim SR-905 – Britannia Blvd. to La Media Rd.	City/Caltrans	Eastbound	41.7	A	40.6	A
		Westbound	43.2	A	43.5	A
Interim SR-905 – La Media Rd. to Piper Ranch Rd.	City/Caltrans/County	Eastbound	40.2	A	38.7	A
		Westbound	36.3	A	36.4	A
Interim SR-905 – Piper Ranch Rd to SR125	City/Caltrans/County	Eastbound	34.7	B	34.1	B
		Westbound	27.0	C	25.7	C
PM Peak Hour						
Roadway Segments	Jurisdiction	Direction of Travel	Existing		Existing + Phase 1	
			Speed (mph)	LOS	Speed (mph)	LOS
Interim SR-905 – Heritage Rd to Cactus Rd	City/Caltrans	Eastbound	30.7	B	30.4	B
		Westbound	26.6	C	24.6	C
Interim SR-905 – Cactus Rd. to Britannia Blvd.	City/Caltrans	Eastbound	33.7	B	33.6	B
		Westbound	30.4	B	29.9	B
Interim SR-905 – Britannia Blvd. to La Media Rd.	City/Caltrans	Eastbound	40.4	A	40.3	A
		Westbound	40.1	A	39.6	A
Interim SR-905 – La Media Rd. to Piper Ranch Rd.	City/Caltrans/County	Eastbound	39.0	A	38.8	A
		Westbound	32.3	B	30.7	B
Interim SR-905 – Piper Ranch Rd to SR125	City/Caltrans/County	Eastbound	35.1	A	34.7	B
		Westbound	26.5	C	25.8	C
LOS=Level of Service; Speed is measured in miles per hour (mph)						

Existing + Phase 1 – Intersections

Existing + Phase 1 Intersections - Synchro Analysis

Table 15 summarizes the existing plus Phase 1 project conditions intersection level of service summary during the AM and PM peak hours. (A copy of the Synchro worksheets for existing plus Phase 1 conditions can be found in Appendix E.) As shown in Table 15, all intersections operate at an acceptable LOS D or better under existing plus Phase 1 project conditions.

Table 15 – Existing + Project Phase 1 Intersection LOS Summary

Intersections	Jurisdiction	Traffic Control	Critical Move	Existing				Existing + Project Phase 1									
				AM Peak		PM Peak		AM Peak					PM Peak				
				Delay	LOS	Delay	LOS	Delay	LOS	Proj. Trips	Δ Delay	Sig.	Delay	LOS	Proj. Trips	Δ Delay	Sig.
Otay Mesa Rd (E-W) @ Heritage Rd (N-S)	**City**/Caltrans	Sig	Int	25.6	C	32.8	C	28.9	C	490	3.3	No	34.7	C	490	1.9	No
Otay Mesa Rd (E-W) @ Cactus Rd(N-S)	**City**/Caltrans	Sig	Int	11.4	B	16.7	B	11.4	B	490	0.0	No	17.3	B	490	0.6	No
Otay Mesa Rd (E-W) @ Britannia Blvd (N-S)	**City**/Caltrans	Sig	Int	20.2	C	13.9	B	20.7	C	490	0.5	No	14.0	B	490	0.1	No
Otay Mesa Rd (E-W) @ La Media Rd (N-S)	**City**/Caltrans	Sig	Int	11.2	B	18.7	B	11.2	B	465	0.0	No	18.7	B	465	0.0	No
Otay Mesa Rd (E-W) @ Piper Ranch Rd (N-S)	**County**/City/ Caltrans	Sig	Int	6.9	A	11.1	B	7.3	A	474	0.4	No	11.5	B	474	0.4	No
Otay Mesa Rd (E-W) @ SR-125 SB (N-S)	**County**/City SBX	Sig	Int	10.2	B	4.5	A	10.2	A	514	0.0	No	6.2	A	484	1.7	No
Otay Mesa Rd (E-W) @ SR-125 NB (N-S)	**County**/City SBX	Sig	Int	1.6	A	6.9	A	1.6	A	524	0.0	No	4.3	A	524	(2.6)	No
Otay Mesa Rd (E-W) @ Sanyo Av (N-S)	County/City	Sig	Int	4.7	A	14.6	B	8.4	A	524	3.7	No	14.9	B	524	0.3	No
Otay Mesa Rd (E-W) @ Enrico Fermi Dr (N-S)	County	Sig	Int	11.6	B	12.7	B	52.5	D	573	40.9	No	52.5	D	574	39.8	No
Otay Mesa Rd (E-W) @ Alta Rd (N-S)	County	AWSC	EB	14.3	B	8.3	A	15.0	C	7	0.7	No	8.6	A	27	0.3	No
			WB	0.0	A	0.0	A	0.0	A	0	0.0		0.0	A	0	0.0	
			NB	7.7	A	7.6	A	7.8	A	0	0.1		7.7	A	0	0.1	
			SB	8.1	A	8.5	A	8.4	A	27	0.3		8.8	A	7	0.3	
			Int	13.4	B	8.5	A	13.8	B	34	0.4		8.7	A	34	0.2	
Airway Rd (E-W) @ Sanyo Av (N-S)	City	AWSC	EB	9.9	A	11.3	B	10.4	B	20	0.5	No	11.5	B	5	0.2	No
			WB	8.5	A	8.9	A	8.7	A	7	0.2		9.3	A	27	0.4	
			NB	8.2	A	10.4	B	8.4	A	0	0.2		10.7	B	0	0.3	
			SB	14.0	B	10.3	B	14.9	B	7	0.9		10.6	B	2	0.3	
			Int	11.8	B	10.1	B	12.4	B	34	0.6		10.4	B	34	0.3	
Airway Rd (E-W) @ Paseo De Las Americas (N-S)	**County**/City	TWSC	NBL-T	11.3	B	11.8	B	11.7	B	0	0.4	No	12.3	B	0	0.5	No
			SB	8.8	A	9.2	A	8.9	A	0	0.1		9.4	A	0	0.2	
Airway Rd (E-W) @ Michael Faraday (N-S)	**County**/City	OWSC	NBL	9.6	A	9.6	A	9.9	A	0	0.3	No	10.0	A	0	0.4	No
Airway Rd (E-W) @ Enrico Fermi Dr (N-S)	**County**/City	Sig	Int	14.7	B	16.5	B	18.6	B	655	3.9	No	14.3	B	625	(2.2)	No

LOS=Level of Service; Delay is measured in seconds/vehicle; Sig=signalized; AWSC=All Way Stop Controlled; TWSC = Two-Way Stop-Controlled; OWSC=One Way Stop Controlled;
Int = Intersection; NB = Northbound Approach; SB = Southbound Approach; EB = Eastbound Approach; WB = Westbound Approach; NBL = Northbound Left;
NBL-T = Shared Northbound Left-Through; SBL-T = Shared Southbound Left-Through; SBX = South Bay Expressway; E-W = East-West Roadway; N-S = North-South Roadway;
Bold = Jurisdiction which significance criteria is based on; Δ Delay = Increase (decrease) in delay; Occasionally adding traffic to a critical movement optimizes the intersection resulting in a decrease in delay

Table 15 (Continued) – Existing + Project Phase 1 Intersection LOS Summary

Intersections	Jurisdiction	Traffic Control	Critical Move	Existing				Existing + Project Phase 1									
				AM Peak		PM Peak		AM Peak					PM Peak				
				Delay	LOS	Delay	LOS	Delay	LOS	Proj. Trips	Δ Delay	Sig.	Delay	LOS	Proj. Trips	Δ Delay	Sig.
Siempre Viva Rd (E-W) @ Drucker Ln (N-S)	**City**	Sig	Int	14.1	B	16.2	B	14.2	B	17	0.1	No	17.5	B	42	1.3	No
Siempre Viva Rd (E-W) @ SR-905 SB to EB Siempre Viva (N-S)	City/**Caltrans**	Sig	Int	3.6	A	6.9	A	4.0	A	65	0.4	No	8.5	A	134	1.6	No
Siempre Viva Rd (E-W) @ SR-905 SB to WB Siempre Viva (N-S)	City/**Caltrans**	OWSC	SB	10.4	B	10.4	B	10.6	B	0	0.2	No	10.8	B	0	0.4	No
Siempre Viva Rd (E-W) @ SR-905 NB Ramp (N-S)	City/**Caltrans**	Sig	Int	8.8	A	8.0	A	8.8	A	150	0.0	No	8.0	A	174	0.0	No
Siempre Viva Rd (E-W) @ Paseo De Las Americas (N-S)	City	Sig	Int	27.2	C	35.7	D	25.0	C	158	(2.2)	No	35.7	D	183	0.0	No
Siempre Viva Rd (E-W) @ Michael Faraday (N-S)	City	TWSC	NB	10.9	B	13.1	B	13.0	B	0	2.1	No	15.7	C	0	2.6	No
			SBL-T	10.7	B	12.5	B	12.2	B	7	1.5		15.3	C	2	2.8	
Siempre Viva Rd (E-W) @ Enrico Fermi Dr (N-S)	**County**/City	Sig	Int	26.3	C	31.6	C	26.4	C	548	0.4	No	20.3	C	649	(11.3)	No
Alta Rd (N-S) @ Lone Star Rd/Paseo De La Fuente (E-W)	County	Sig	Int	0.8	A	1.9	A	1.2	A	34	0.4	No	2.0	A	34	0.1	No

LOS=Level of Service; Delay is measured in seconds/vehicle; Sig=signalized; AWSC=All Way Stop Controlled; TWSC = Two-Way Stop-Controlled; OWSC=One Way Stop Controlled;
Int = Intersection; NB = Northbound Approach; SB = Southbound Approach; EB = Eastbound Approach; WB = Westbound Approach; NBL = Northbound Left;
NBL-T = Shared Northbound Left-Through; SBL-T = Shared Southbound Left-Through; SBX = South Bay Expressway; E-W = East-West Roadway; N-S = North-South Roadway;
Bold = Jurisdiction which significance criteria is based on; Δ Delay = Increase (decrease) in delay; Occasionally adding traffic to a critical movement optimizes the intersection resulting in a decrease in delay

Existing + Phase 1 Intersections - ILV Analysis

Table 16 summarizes the existing without and with Phase 1 project conditions intersection ILV analysis. As shown in Table 16, the Otay Mesa Road/Heritage Road and Otay Mesa Road/Cactus Road intersections operates under stable flow during the AM peak hour and under unstable flow during the PM peak hour under existing plus Phase 1 project conditions. All other intersections operate under stable flow during the AM and PM peak hours under existing without and with Phase 1 project conditions. A copy of the ILV worksheets for existing plus Phase 1 conditions can be found in Appendix E.

Table 16 – Existing Plus Phase 1 – ILV Analysis

Intersection	Existing				Existing + Phase 1			
	AM Peak Hour		PM Peak Hour		AM Peak		PM Peak	
	ILV/Hr	Operating Condition	ILV/Hr	Operating Condition	ILV/Hr	Operating Condition	ILV/Hr	Operating Condition
Otay Mesa Rd (E-W) @ Heritage Rd (N-S)	1,029	Stable Flow	1,114	Stable Flow	1,168	Stable Flow	1,244	Unstable Flow
Otay Mesa Rd (E-W) @ Cactus Rd (N-S)	988	Stable Flow	1,083	Stable Flow	1,119	Stable Flow	1,214	Unstable Flow
Otay Mesa Rd (E-W) @ Britannia Blvd (N-S)	970	Stable Flow	1,018	Stable Flow	990	Stable Flow	1,152	Stable Flow
Otay Mesa Rd (E-W) @ La Media Rd (N-S)	619	Stable Flow	787	Stable Flow	743	Stable Flow	911	Stable Flow
Otay Mesa Rd (E-W) @ Piper Ranch Rd (N-S)	414	Stable Flow	788	Stable Flow	602	Stable Flow	914	Stable Flow
Otay Mesa Rd (E-W) @ SR-125 SB (N-S)	482	Stable Flow	341	Stable Flow	618	Stable Flow	468	Stable Flow
Otay Mesa Rd (E-W) @ SR-125 NB (N-S)	577	Stable Flow	424	Stable Flow	787	Stable Flow	613	Stable Flow
Siempre Viva Rd (E-W) @SR-905 SB to EB Siempre Viva Rd (N-S)	275	Stable Flow	330	Stable Flow	279	Stable Flow	373	Stable Flow
Siempre Viva Rd (E-W) @ SR-905 NB (N-S)	339	Stable Flow	394	Stable Flow	341	Stable Flow	440	Stable Flow

ILV/Hr = Intersecting Lane Vehicles per hour; < 1,200 ILV/Hr = Stable flow; 1,200 – 1,500 ILV/Hr = Unstable Flow; 1,500 ILV/Hr = Capacity; E-W = East-West; N-S = North-South

EXISTING + PHASES 1 - 2 PROJECT LEVEL OF SERVICE CONDITIONS

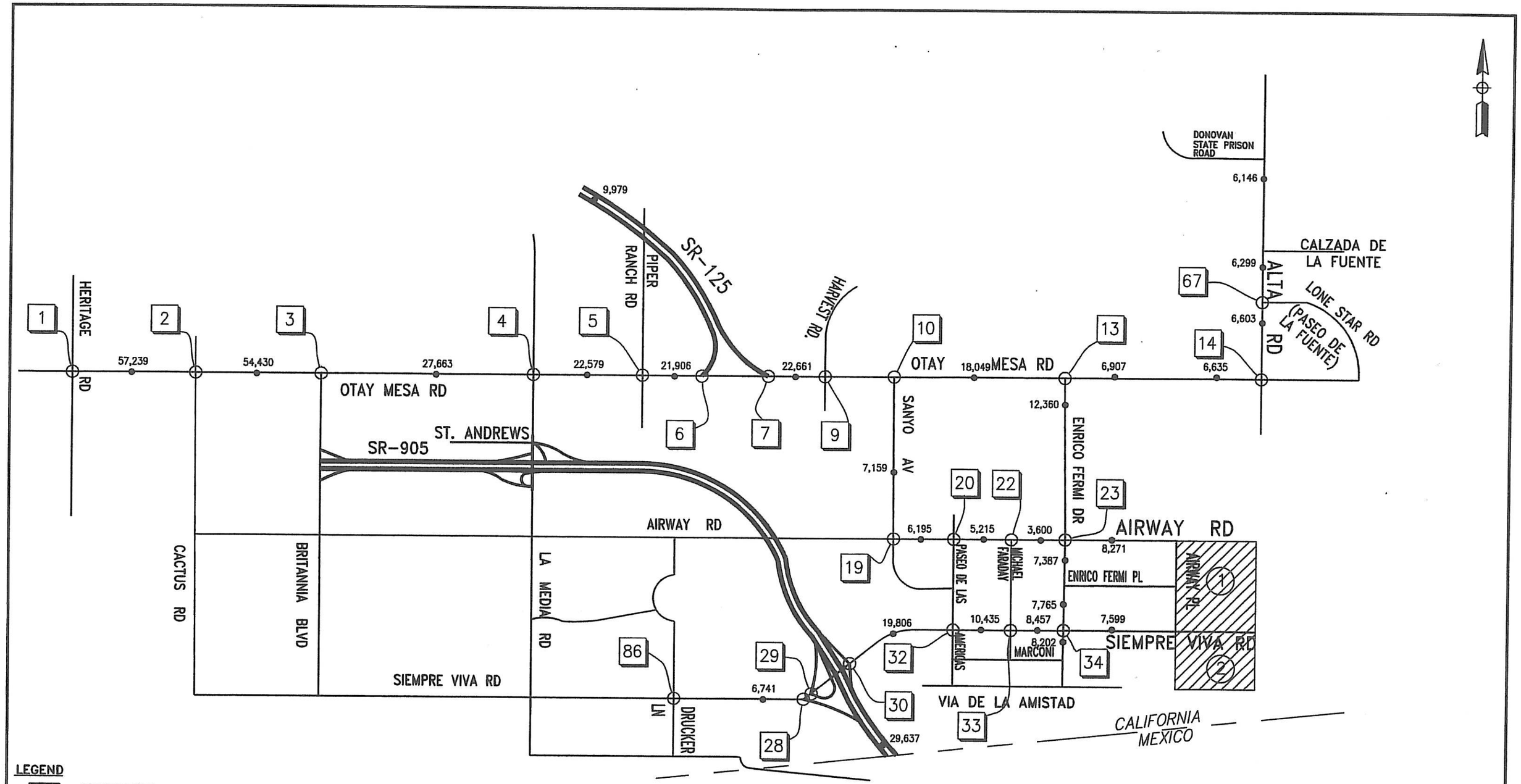
This scenario analyzes the traffic impact of Phases 1-2 of the proposed project under existing conditions. Figures 18 and 19 illustrate the existing plus Phases 1-2 project traffic volumes.

Existing + Phases 1 - 2 Project – Roadway Segments

Table 17 summarizes the daily roadway segment level of service analysis under the existing without and with Phases 1-2 project conditions. As shown in Table 17, based on average daily conditions the following roadway segments operate at an unacceptable LOS E or F under existing plus Phases 1-2 project conditions:

- Interim SR-905 (Otay Mesa Rd) between Heritage Road and Cactus Road (LOS C without the project and LOS E with Phases 1-2 of the project); and
- Otay Mesa Road (Old Otay Mesa Rd) between Sanyo Avenue and Enrico Fermi Drive (LOS D without the project and LOS F with Phases 1-2 of the project).

All other roadway segments continue to operate at LOS D or better under existing plus Phases 1-2 of the proposed project conditions.



Darnell & ASSOCIATES, INC.

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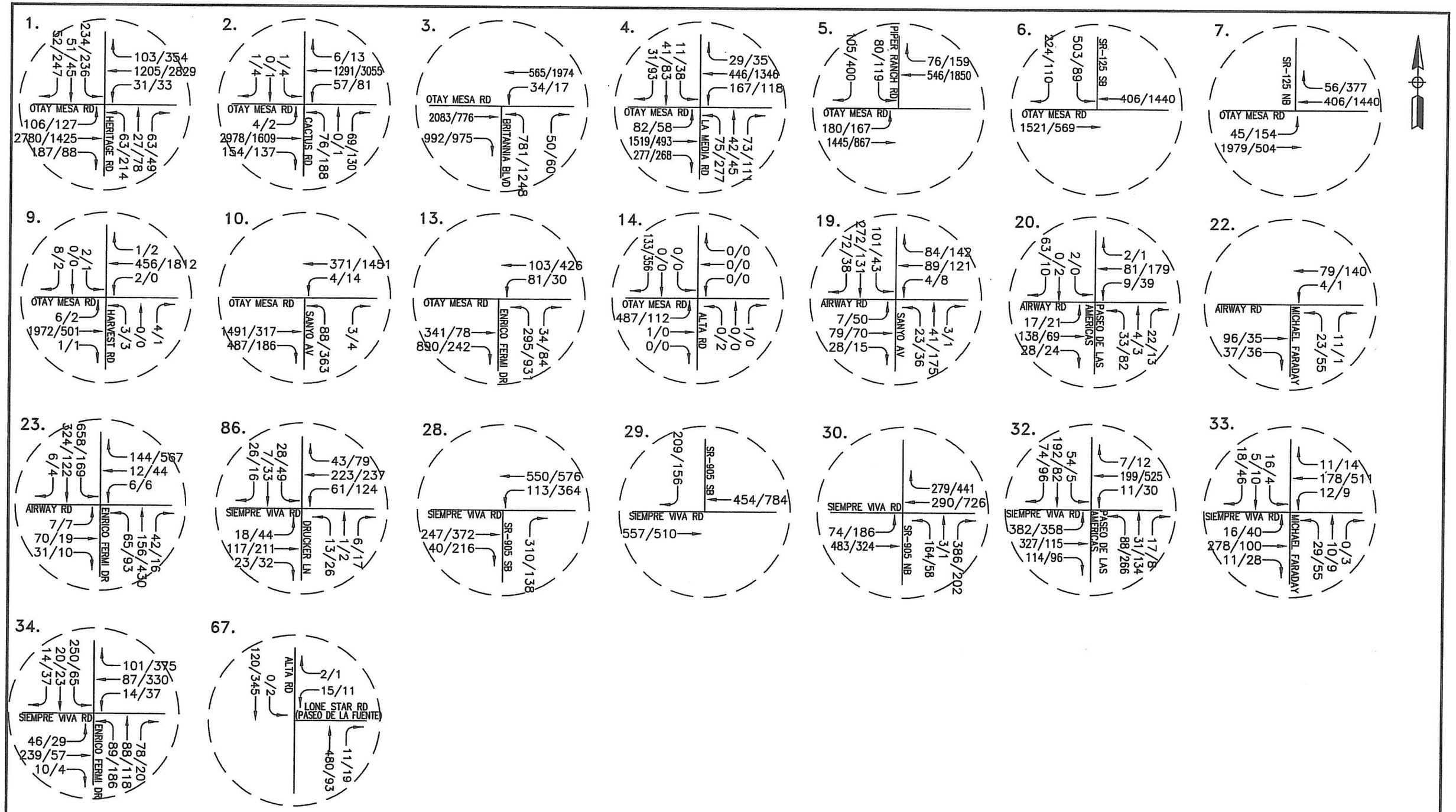
FIGURE 18

EXISTING + PROJECT PHASES 1-2 DAILY TRAFFIC VOLUMES



LEGEND

→ – DIRECTION OF TRAVEL

XX/YY – AM/PM PEAK HOUR TURN VOLUMES

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FIGURE 19

EXISTING + PROJECT PHASES 1-2

PEAK HOUR TRAFFIC VOLUMES

Table 17 – Existing + Project Phases 1-2 Conditions Roadway Segment Daily LOS Summary

Roadway Segment	Jurisdiction	Class	Capacity (LOS E)	Existing			Existing + Project Phases 1-2					
				ADT	V/C	LOS	Proj. Tr	ADT	V/C	LOS	ΔV/C	Sig
Interim SR-905 (Otay Mesa Rd)												
Heritage Rd to Cactus Rd	**City**/Caltrans	6P	60,000	49,192	0.82	C	**8,047**	**57,239**	**0.95**	**E**	**0.13**	**Yes (d)**
Cactus Rd to Britannia Blvd	**City**/Caltrans	6P	60,000	46,383	0.77	C	8,047	54,430	0.91	D	0.14	No
Britannia Blvd to La Media Rd	**City**/Caltrans	6P	60,000	20,025	0.33	A	7,638	27,663	0.46	B	0.13	No
La Media Rd to Piper Ranch Rd	**City**/Caltrans	4M(m)	45,000(a)	14,941	0.33	A	7,638	22,579	0.50	B	0.17	No
Piper Ranch Rd to SR-125	**County**/City/Caltrans	6P	57,000	14,132	0.25	A	7,774	21,906	0.38	A	0.13	No
Otay Mesa Road (Old Otay Mesa Road)												
SR-125 to Harvest Rd	**County**/City/Caltrans	4M(m)	47,000(a)	14,068	0.30	A	8,593	22,661	0.48	B	0.18	No
Harvest Rd to Sanyo Ave	**County**/City/Caltrans	4M	37,000	14,068	0.38	A	8,593	22,661	0.61	B	0.23	No
Sanyo Ave to Enrico Fermi Dr	**County**/City	LC	16,200	9,456	0.58	D	**8,593**	**18,049**	**1.11**	**F**	**0.53**	**Yes**
Enrico Fermi Dr to Alta Rd	County	LC	16,200	6,089	0.38	C	818	6,907	0.43	C	0.05	No
Airway Road												
Sanyo Ave to Paseo de Las Americas	City	4M	40,000	5,649	0.14	A	546	6,195	0.15	A	0.01	No
Paseo de Las Americas to Michael Faraday	**County**/City	4M	37,000	4,533	0.12	A	682	5,215	0.14	A	0.02	No
Michael Faraday to Enrico Fermi Dr	**County**/City	LC	16,200	2,918	0.18	B	682	3,600	0.22	B	0.04	No
Enrico Fermi Dr to Airway Pl	County	4C	34,200	1,179	0.03	A	7,092	8,271	0.24	A	0.21	No
Siempre Viva Road												
Drucker Ln to SR-905	City	6P	60,000	6,127	0.10	A	614	6,741	0.11	A	0.01	No
SR-905 to Paseo de Las Americas	City	6P	60,000	17,146	0.29	A	2,660	19,806	0.33	A	0.04	No
Paseo de Las Americas to Michael Faraday	City	4C	30,000	7,639	0.25	A	2,796	10,435	0.35	B	0.10	No
Michael Faraday to Enrico Fermi Dr	City	4C	30,000	5,525	0.18	A	2,932	8,457	0.28	A	0.10	No
Enrico Fermi Dr to Airway Pl	County	LC	16,200	1,052	0.06	A	6,547	7,599	0.47	D	0.41	No
SR-125												
North of Otay Mesa Rd	SBX	4-Toll	(b)	9,160	0.10	A	819	9,979	0.11	A	0.01	No
Existing SR-905												
South of Siempre Viva Rd	City/**Caltrans**	4-Fwy	(b)	28,000	0.32	A	1,637	29,637	0.34	A	0.02	No
Sanyo Avenue												
Otay Mesa Rd to Airway Rd	City	4C	30,000	7,022	0.23	A	137	7,159	0.24	A	0.01	No
Enrico Fermi Drive												
Otay Mesa Rd to Airway Rd	County	TC	19,000	2,949	0.16	A	9,411	12,360	0.65	D	0.49	No
Airway Rd to Enrico Fermi Pl	City	4M	40,000	3,977	0.10	A	3,410	7,387	0.18	A	0.08	No
Enrico Fermi Pl to Siempre Viva Rd	City	4M	40,000	4,355	0.11	A	3,410	7,765	0.19	A	0.08	No
Siempre Viva Rd to Via De La Amistad	City	4M	40,000	7,588	0.19	A	614	8,202	0.21	A	0.02	No
Airway Place (c)												
Airway Rd to Enrico Fermi Pl	County	2-I/C	16,200	50	0.00	A	341	391	0.02	A	0.02	No
Enrico Fermi Pl to Siempre Viva Rd	County	2-I/C	16,200	50	0.00	A	341	391	0.02	A	0.02	No
Alta Road												
Donovan State Prison Rd to Calzada De La Fuente	County	LC	16,200	5,873	0.36	C	273	6,146	0.38	C	0.02	No
Calzada De La Fuente to Lone Star Rd (Paseo De La Fuente)	County	TC	19,000	5,890	0.31	B	409	6,299	0.33	C	0.02	No
Lone Star Rd (Paseo De La Fuente) to Otay Mesa Rd	County	LC	16,200	6,057	0.37	C	546	6,603	0.41	C	0.04	No

City = Capacity of City segments is based on the upper limits of LOS E per the City of San Diego; County = Capacity of County segments is based on the upper limits of LOS E per the County of San Diego;
Bold = Jurisdiction which capacity is based on; ADT= Average Daily Traffic; LOS= Level of Service; Class = Roadway Classification; v/c = Volume-to LOS E Capacity Ratio; < C = Operates at LOS C or better;
SBX = South Bay Expressway; 4-Fwy = 4-Lane Freeway;4-Toll = 4-Lane Toll Facility; 6P = 6-Lane Prime Arterial; 4M(m) = Modified 4-Lane Major Road; 4M = 4-Lane Major Arterial; 4C = 4-Lane Collector;
TC = Town Collector; LC = Light Collector; 2-I/C = 2-Lane Industrial/Commercial Road;
(a) Additional lanes may be provided to accommodate turning movements and freeway access; hence the roadway capacity 45,000 for City or 47,000 for County at LOS E (half-way between a 4-lane Major & 6-Lane Prime Arterial).
(b) Capacity is 2,300 vehicles per hour per lane, LOS is based on peak hour volumes per Caltrans District 11 & HCM procedures, See Appendix I for LOS calculations
(c) Roadway is constructed as a 2-lane, one-way non-circulation element roadway under existing conditions and as a 2-lane, 2-way Industrial Commercial Collector under Existing Plus Project Conditions
(d) Table 18 of the Arterial Roadway Segment analysis shows that the roadway segment does not have a significant impact.

The segment of Interim SR-905 (Otay Mesa Road) between Heritage Road and Cactus Road operates at an acceptable LOS C under existing conditions. With the addition of 8,047 ADT from Phases 1-2 of the project, the v/c ratio will be increased by 0.13 and the level of service on this segment of Interim SR-905 (Otay Mesa Road) will degrade to LOS E. The increase in v/c exceeds the 0.02 allowed per the City of San Diego' thresholds for significance for a roadway segment operating at LOS E, thus, based on average daily conditions Phases 1-2 of the project has a significant direct impact on this segment of Interim SR-905 (Otay Mesa Road). The arterial roadway segment analysis for the segment of Interim SR-905 (Otay Mesa Road) between Heritage Road and Cactus Road found it to operate at an acceptable LOS D or better during both peak hours. (See the arterial roadway segment section for more details.) Further, as discussed later under the intersection analysis both the Interim SR-905 (Otay Mesa Road)/Heritage Road and Interim SR-905 (Otay Mesa Road)/Cactus Road intersections operate at LOS D or better during both peak hours. Therefore, per the City of San Diego's policy, since the segment of Interim SR-905 (Otay Mesa Road) between Heritage Road and Cactus Road is currently already built out to its ultimate classification of a 6-lane Prime Arterial, the proposed project's Phases 1-2 is not considered to have a significant direct impact and mitigation will not be required.

The segment of Otay Mesa Road (Old Otay Mesa Road) between Sanyo Avenue and Enrico Fermi Drive operates at LOS D under existing conditions. With addition of 8,593 ADT from Phases 1-2 of the proposed project, this segment of Otay Mesa Road (Old Otay Mesa Road) will operate at LOS F. Per the PFE a significant impact will occur if the project reduces an acceptable level of service (LOS D or better) to and unacceptable level (LOS E or F). Since Phases 1-2 of the project lowers the existing level of service from LOS D to LOS F, based on average daily conditions, Phases 1-2 of the project is considered to have a significant direct impact on the segment of Otay Mesa Road (Old Otay Mesa Road) between Sanyo Avenue and Enrico Fermi Drive. See Section VIII for a discussion on how the developer will mitigate its significant direct impacts.

Existing + Phases 1-2 – Arterial Roadway Segments

The level of service analysis based on daily analysis provides an overall average operating condition of the roadway segment over a 24-hour period. However, the daily level of service analysis does not provide any indication as to how a particular roadway segment may operate during the peak hours of travel. Peak hour operation for a roadway segment is particularly useful along arterial roadway segments (such as Interim SR-905/Otay Mesa Road) where there are several signalized intersections that are spaced at one-mile or less intervals. Therefore, in addition to evaluating Interim SR-905/Otay Mesa Road based on daily capacity it was also analyzed based on the Highway Capacity Manual's (HCM) Arterial Segment Methodology utilizing the Synchro software. The arterial segment analysis determines level of service based on the average travel speeds that occur on the roadway. The average travel speeds are significantly impacted by the delay a vehicle experiences as they travel through the signalized intersections. The arterial segment analysis was conducted for the AM and PM peak hours for the segments of Interim SR-905/Otay Mesa Road between Heritage Road and SR-125. The results of the analysis are summarized in Table 18.

Table 18 illustrates the existing conditions arterial level of service summary during the AM and PM peak hours. As shown in Table 18, all arterial roadway segments along Interim SR-905 (Otay Mesa Road) operate at an acceptable LOS D or better under existing plus Phases 1-2 project conditions. A copy of the Synchro worksheets can be found in Appendix D and F.

Table 18 – Existing + Project Phases 1-2 Arterial LOS Summary						
AM Peak Hour						
Roadway Segments	Jurisdiction	Direction of Travel	Existing		Existing + Phases 1-2	
			Speed (mph)	LOS	Speed (mph)	LOS
Interim SR-905 – Heritage Rd to Cactus Rd	City/Caltrans	Eastbound	34.9	B	20.4	D
		Westbound	33.5	B	33.8	B
Interim SR-905 – Cactus Rd. to Britannia Blvd.	City/Caltrans	Eastbound	30.7	B	25.5	C
		Westbound	32.7	B	38.1	A
Interim SR-905 – Britannia Blvd. to La Media Rd.	City/Caltrans	Eastbound	41.7	A	37.1	A
		Westbound	43.2	A	43.6	A
Interim SR-905 – La Media Rd. to Piper Ranch Rd.	City/Caltrans/County	Eastbound	40.2	A	35.3	A
		Westbound	36.3	A	36.6	A
Interim SR-905 – Piper Ranch Rd to SR125	City/Caltrans/County	Eastbound	34.7	B	31.4	B
		Westbound	27.0	C	26.1	C
PM Peak Hour						
Roadway Segments	Jurisdiction	Direction of Travel	Existing		Existing + Phases 1-2	
			Speed (mph)	LOS	Speed (mph)	LOS
Interim SR-905 – Heritage Rd to Cactus Rd	City/Caltrans	Eastbound	30.7	B	30.0	B
		Westbound	26.6	C	17.4	D
Interim SR-905 – Cactus Rd. to Britannia Blvd.	City/Caltrans	Eastbound	33.7	B	33.5	B
		Westbound	30.4	B	24.7	C
Interim SR-905 – Britannia Blvd. to La Media Rd.	City/Caltrans	Eastbound	40.4	A	40.2	A
		Westbound	40.1	A	34.3	B
Interim SR-905 – La Media Rd. to Piper Ranch Rd.	City/Caltrans/County	Eastbound	39.0	A	38.7	A
		Westbound	32.3	B	27.2	C
Interim SR-905 – Piper Ranch Rd to SR125	City/Caltrans/County	Eastbound	35.1	A	34.7	B
		Westbound	26.5	C	24.8	C
LOS=Level of Service; Speed is measured in miles per hour (mph)						

Existing + Phases 1-2 – Intersections

Existing + Phases 1-2 Intersections - Synchro Analysis

Table 19 summarizes the existing plus Phases 1-2 project conditions intersection level of service summary during the AM and PM peak hours. (A copy of the Synchro worksheets for existing plus Phases 1-2 project conditions can be found in Appendix F.) As shown in Table 19, the following intersection operates at LOS F during the AM and PM peak hours under existing plus Phases 1-2 project conditions:

- Otay Mesa Road (Old Otay Mesa Road)/Enrico Fermi Drive (LOS B without project and LOS F during AM and PM peak hours with Phases 1-2 of project).

All other intersections continue to operate at LOS D or better under existing plus Phases 1-2 project conditions.

Table 19 – Existing + Project Phases 1-2 Intersection LOS Summary

Intersections	Jurisdiction	Traffic Control	Critical Move	Existing				Existing + Project Phases 1-2									
				AM Peak		PM Peak		AM Peak					PM Peak				
				Delay	LOS	Delay	LOS	Delay	LOS	Proj. Trips	Δ Delay	Sig.	Delay	LOS	Proj. Trips	Δ Delay	Sig.
Otay Mesa Rd (E-W) @ Heritage Rd (N-S)	**City/Caltrans**	Sig	Int	25.6	C	32.8	C	40.3	D	966	14.7	No	49.4	D	966	16.6	No
Otay Mesa Rd (E-W) @ Cactus Rd(N-S)	**City/Caltrans**	Sig	Int	11.4	B	16.7	B	33.6	C	966	22.2	No	25.2	C	966	8.5	No
Otay Mesa Rd (E-W) @ Britannia Blvd (N-S)	**City/Caltrans**	Sig	Int	20.2	C	13.9	B	23.7	C	966	3.5	No	19.3	B	966	5.4	No
Otay Mesa Rd (E-W) @ La Media Rd (N-S)	**City/Caltrans**	Sig	Int	11.2	B	18.7	B	14.9	B	917	3.7	No	21.1	C	916	2.4	No
Otay Mesa Rd (E-W) @ Piper Ranch Rd (N-S)	**County/City/ Caltrans**	Sig	Int	6.9	A	11.1	B	9.1	A	933	2.2	No	12.4	B	933	1.3	No
Otay Mesa Rd (E-W) @ SR-125 SB (N-S)	**County/City SBX**	Sig	Int	10.2	B	4.5	A	10.6	B	1,011	0.4	No	5.9	A	953	1.4	No
Otay Mesa Rd (E-W) @ SR-125 NB (N-S)	**County/City SBX**	Sig	Int	1.6	A	6.9	A	3.3	A	1,031	1.7	No	4.2	A	1,032	(2.7)	No
Otay Mesa Rd (E-W) @ Sanyo Av (N-S)	County/City	Sig	Int	4.7	A	14.6	B	14.0	B	1,031	9.3	No	53.6	D	1,032	39.0	No
Otay Mesa Rd (E-W) @ Enrico Fermi Dr (N-S)	County	Sig	Int	11.6	B	12.7	B	**249.3**	**F**	**1,129**	**237.7**	**YES**	**251.8**	**F**	**1,131**	**239.1**	**YES**
Otay Mesa Rd (E-W) @ Alta Rd (N-S)	County	AWSC	EB	14.3	B	8.3	A	15.8	C	13	1.5	No	8.9	A	52	0.6	No
			WB	0.0	A	0.0	A	0.0	A	0	0.0		0.0	A	0	0.0	
			NB	7.7	A	7.6	A	7.8	A	0	0.1		7.8	A	0	0.2	
			SB	8.1	A	8.5	A	8.7	A	52	0.6		9.0	A	13	0.5	
			Int	13.4	B	8.5	A	14.3	B	65	0.9		9.0	A	65	0.5	
Airway Rd (E-W) @ Sanyo Av (N-S)	City	AWSC	EB	9.9	A	11.3	B	10.8	B	39	0.9	No	11.8	B	10	0.5	No
			WB	8.5	A	8.9	A	8.9	A	13	0.4		9.6	A	52	0.7	
			NB	8.2	A	10.4	B	8.5	A	0	0.3		10.9	B	0	0.5	
			SB	14.0	B	10.3	B	15.9	C	13	1.9		10.9	B	3	0.6	
			Int	11.8	B	10.1	B	13.0	B	65	1.2		10.6	B	65	0.5	
Airway Rd (E-W) @ Paseo De Las Americas (N-S)	**County/City**	TWSC	NBL-T	11.3	B	11.8	B	12.2	B	0	0.9	No	12.9	B	0	1.1	No
			SB	8.8	A	9.2	A	8.9	A	0	0.1		9.6	A	0	0.4	
Airway Rd (E-W) @ Michael Faraday (N-S)	**County/City**	OWSC	NBL	9.6	A	9.6	A	10.3	B	0	0.7	No	10.4	B	0	0.8	No
Airway Rd (E-W) @ Enrico Fermi Dr (N-S)	**County/City**	Sig	Int	14.7	B	16.5	B	38.8	D	1,251	24.1	No	22.7	C	1,222	6.2	No

LOS=Level of Service; Delay is measured in seconds/vehicle; Sig=signalized; AWSC=All Way Stop Controlled; TWSC = Two-Way Stop-Controlled; OWSC=One Way Stop Controlled;
Int = Intersection; NB = Northbound Approach; SB = Southbound Approach; EB = Eastbound Approach; WB = Westbound Approach; NBL = Northbound Left;
NBL-T = Shared Northbound Left-Through; SBL-T = Shared Southbound Left-Through; SBX = South Bay Expressway; E-W = East-West Roadway; N-S = North-South Roadway;
Bold = Jurisdiction which significance criteria is based on; Δ Delay = Increase (decrease) in delay; Occasionally adding traffic to a critical movement optimizes the intersection resulting in a decrease in delay

Table 3 (Continued) – Existing + Project Phases 1-2 Intersection LOS Summary

Intersections	Jurisdiction	Traffic Control	Critical Move	Existing				Existing + Project Phases 1-2									
				AM Peak		PM Peak		AM Peak					PM Peak				
				Delay	LOS	Delay	LOS	Delay	LOS	Proj. Trips	Δ Delay	Sig.	Delay	LOS	Proj. Trips	Δ Delay	Sig.
Siempre Viva Rd (E-W) @ Drucker Ln (N-S)	**City**	Sig	Int	14.1	B	16.2	B	14.6	B	32	0.5	No	18.8	B	82	2.6	No
Siempre Viva Rd (E-W) @ SR-905 SB to EB Siempre Viva (N-S)	City/**Caltrans**	Sig	Int	3.6	A	6.9	A	4.4	A	127	0.8	No	9.8	A	265	2.9	No
Siempre Viva Rd (E-W) @ SR-905 SB to WB Siempre Viva (N-S)	City/**Caltrans**	OWSC	SB	10.4	B	10.4	B	10.7	B	0	0.3	No	11.3	B	0	0.9	No
Siempre Viva Rd (E-W) @ SR-905 NB Ramp (N-S)	City/**Caltrans**	Sig	Int	8.8	A	8.0	A	8.8	A	295	0.0	No	8.0	A	345	0.0	No
Siempre Viva Rd (E-W) @ Paseo De Las Americas (N-S)	City	Sig	Int	27.2	C	35.7	D	23.4	C	311	(3.8)	No	35.7	D	361	0.0	No
Siempre Viva Rd (E-W) @ Michael Faraday (N-S)	City	TWSC	NB	10.9	B	13.1	B	16.0	C	0	5.1	No	19.3	C	0	6.2	No
			SBL-T	10.7	B	12.5	B	14.1	B	13	3.4		19.1	C	3	6.6	
Siempre Viva Rd (E-W) @ Enrico Fermi Dr (N-S)	**County**/City	Sig	Int	26.3	C	31.6	C	24.4	C	766	(1.9)	No	19.3	B	854	(12.3)	No
Alta Rd (N-S) @ Lone Star Rd/Paseo De La Fuente (E-W)	County	Sig	Int	0.8	A	1.9	A	1.5	A	65	0.7	No	2.1	A	65	0.2	No

LOS=Level of Service; Delay is measured in seconds/vehicle; Sig=signalized; AWSC=All Way Stop Controlled; TWSC = Two-Way Stop-Controlled; OWSC=One Way Stop Controlled;
Int = Intersection; NB = Northbound Approach; SB = Southbound Approach; EB = Eastbound Approach; WB = Westbound Approach; NBL = Northbound Left;
NBL-T = Shared Northbound Left-Through; SBL-T = Shared Southbound Left-Through; SBX = South Bay Expressway; E-W = East-West Roadway; N-S = North-South Roadway;
Bold = Jurisdiction which significance criteria is based on; Δ Delay = Increase (decrease) in delay; Occasionally adding traffic to a critical movement optimizes the intersection resulting in a decrease in delay

The Otay Mesa Road (Old Otay Mesa Road)/Enrico Fermi Drive intersection operates at LOS B during the both the AM and PM peak hours under existing conditions. With the addition of 1,129 AM peak hour trips from Phases 1-2 of the project, the AM peak hour delay will be increased by 237.7 seconds degrading the existing LOS to LOS F. With the addition of 1,131 PM peak hour trips from Phases 1-2 of the project, the PM peak hour delay will be increased by 239.1 seconds degrading the existing LOS to LOS F. Per the PFE a significant impact will occur if the project reduces an acceptable level of service (LOS D or better) to and unacceptable level (LOS E or F). Since the proposed project lowers the existing level of service during the AM and PM peak hours from an acceptable LOS B to an unacceptable LOS F, Phases 1-2 of the proposed project is considered to have a significant direct impact at the Otay Mesa Road (Old Otay Mesa Road)/Enrico Fermi Drive intersection. See Section VIII for a discussion on how the developer will mitigate its significant direct impacts.

Existing + Phases 1-2 Intersections - ILV Analysis

Table 20 summarizes the existing without and with Phases 1-2 project conditions intersection ILV analysis. As shown in Table 20, the Otay Mesa Road/Heritage Road and Otay Mesa Road/Cactus Road intersections operate under unstable flow during both the AM and PM peak hours, and the Otay Mesa Road/Britannia Boulevard intersection operates under stable flow during the AM peak hour and under unstable flow during the PM peak hour under existing plus Phases 1-2 project conditions. All other intersections operate under stable during the AM and PM peak hours with Phases 1-2 project conditions. A copy of the ILV worksheets for existing plus Phases 1-2 conditions can be found in Appendix F.

Table 20 – Existing Plus Phases 1-2 – ILV Analysis

Intersection	Existing				Existing + Phases 1-2			
	AM Peak Hour		PM Peak Hour		AM Peak		PM Peak	
	ILV/Hr	Operating Condition	ILV/Hr	Operating Condition	ILV/Hr	Operating Condition	ILV/Hr	Operating Condition
Otay Mesa Rd (E-W) @ Heritage Rd (N-S)	1,029	Stable Flow	1,114	Stable Flow	1,304	Unstable Flow	1,370	Unstable Flow
Otay Mesa Rd (E-W) @ Cactus Rd (N-S)	988	Stable Flow	1,083	Stable Flow	1,246	Unstable Flow	1,341	Unstable Flow
Otay Mesa Rd (E-W) @ Britannia Blvd (N-S)	970	Stable Flow	1,018	Stable Flow	1,103	Stable Flow	1,282	Unstable Flow
Otay Mesa Rd (E-W) @ La Media Rd (N-S)	619	Stable Flow	787	Stable Flow	864	Stable Flow	1,032	Stable Flow
Otay Mesa Rd (E-W) @ Piper Ranch Rd (N-S)	414	Stable Flow	788	Stable Flow	785	Stable Flow	1,037	Stable Flow
Otay Mesa Rd (E-W) @ SR-125 SB (N-S)	482	Stable Flow	341	Stable Flow	759	Stable Flow	590	Stable Flow
Otay Mesa Rd (E-W) @ SR-125 NB (N-S)	577	Stable Flow	424	Stable Flow	990	Stable Flow	797	Stable Flow
Siempre Viva Rd (E-W) @ SR-905 SB to EB Siempre Viva Rd (N-S)	275	Stable Flow	330	Stable Flow	282	Stable Flow	413	Stable Flow
Siempre Viva Rd (E-W) @ SR-905 NB (N-S)	339	Stable Flow	394	Stable Flow	375	Stable Flow	486	Stable Flow

ILV/Hr = Intersecting Lane Vehicles per hour; < 1,200 ILV/Hr = Stable flow; 1,200 – 1,500 ILV/Hr = Unstable Flow; 1,500 ILV/Hr = Capacity; E-W = East-West; N-S = North-South

SECTION V – CUMULATIVE (YEAR 2020) CONDITIONS

In discussions with the County of San Diego, it was determined that the impacts of cumulative development, caused by placing all cumulative trips on the network at one time, exceeded the rate of the real estate market to potentially absorb developed industrial land. The County's decision was based on a review of the December 15, 2006 *Addendum to Real Estate Market Analysis*, which was prepared by Economics Research Associates (ERA) for the City of San Diego during the preparation of the Otay Mesa Community Plan. The percentage of development that could be expected by the year 2020 was estimated by taking the total industrial acreage forecast for the unincorporated County portion of the East Otay Mesa area between 2006 and 2020, based on the high scenario growth rate (or 135 acres), divided by the total acreage of industrial subdivisions proposed in the County (or 1,177.7 acres). A copy of excerpts from the ERA market forecast is provided in Appendix A.

In the unincorporated County of San Diego, there are nineteen (19) cumulative projects, including many large-scale subdivisions and the proposed project, which are located in the Otay Mesa Specific Plan Area. The methodology used to apply the ERA market analysis was as follows:

- Traffic generated by projects processed as Major Use Permits, Interim Use Permits, and Site Plans would be applied at 100% of their planned development capacity by the year 2020. Nine (9) of the nineteen (19) approved/pending projects met that criteria and marketing assumptions in the ERA analysis and were applied to this group of projects.

- Traffic generated by projects processed as subdivisions (Tentative Maps, Tentative Parcel Maps) would be applied at a reduced percentage of the planned development capacity by the year 2020. The reduced percentage was based on market absorption data in the ERA market study. This group included the remaining ten (10) approved/pending projects. The County estimated that these ten (10) projects, based on the market absorption factors described above, could reasonably develop a calculated percentage of the total acreage available for future development. This percentage was determined to be approximately 13% of their total development capacity by the year 2020 without the inclusion of the Hawano and Rabago projects and approximately 11.46% of their total development capacity by the year 2020 with the inclusion of the Hawano and Rabago projects. Since the traffic model was completed prior to applications being filed for the Hawano and Rabago projects; the Hawano and Rabago projects were included at 11.46% while all others were included at 13%.

This methodology presents a more reasonable approach to cumulative traffic analysis by recognizing the real-estate/market-absorption factors that influence the rate at which industrial land is subdivided and made fully operational by development and therefore the cumulative traffic impacts realized. This methodology also takes into consideration the fact that developers must process a second permit, called a Site Plan, before development can occur within subdivisions located in the East Otay Mesa Specific Plan Area. The County will monitor market trends and the level of development in the East Otay Mesa area to ensure that the assumptions utilized above remain valid and reasonable. In addition, the cumulative project list will be updated, as appropriate, when Site Plans are submitted to the County. Traffic generated by projects with Site Plans would then be applied at 100%.

Table 21 summarizes the list of approved/pending projects and identifies which ones were assumed by the County of San Diego to be developed at 100%, 13% or 11.46% of its planned development by the year 2020. Figure 20 illustrates the location of the approved/pending projects in the Otay Mesa area of the County of San Diego. As shown in Table 21, the approved/pending projects within the County of San Diego are estimated to generate a total of approximately 174,720 average daily trips, of which, approximately 55,743 ADT are anticipated to be added to the roadway network by the year 2020.

Table 21 - Summary of Approved/Pending Projects in County of San Diego

Map ID #	Project Name	County Project #	Project Location	# Acres	Land Use	Trip Generation: Total ADT	Trip Generation: % Cumulative Traffic applied to year 2020	
							%	ADT
Project's Processing Site Plans								
1	California Crossings	P06-102 TPM 21046	NW Corner of Otay Mesa Rd & Harvest Rd	29.6 Acres	325.502 ksf Community Shopping Ctr	22,785	100%	22,785
2	CCA San Diego Correctional Facility	SPA 06-005 P 06-074	n/o Calzada De La Fuente, e/o Alta Rd	37.0 Acres	2,132 Bed Correctional Detention Facility	2,323	100%	2,323
3	COPART County Sales Yard Time Extension (a)	P 88-020W1	SW Corner of Otay Mesa Rd & Alta Rd	38.2 Acres	Auto Auction	846	100%	846
4	FEDEX Site Plan	S08-018	NE Corner of Airway Rd & Paseo De Las Americas	20.0 Acres	FEDEX Distribution Center	1,598	100%	1,598
5	Salvage Yards/ National Enterprises Recycling	P 98-001	East & West Side of Alta Rd, n/o Otay Mesa Rd	161.0 Acres	Auto Recycling & Salvage Yards	2,408	100%	2,408
6	Sunroad Interim Uses -Sunroad Centre I Harvest Ranch Nursery	P 09-009 P 09-005	n/o Otay Mesa Rd btwn Harvest Rd & Vann Centre Blvd	138.0 Acres	Nursery	14	100%	14
7	Travel Plaza	P 98-024W1 TPM 20414	e/o Enrico Fermi Drive, btwn Otay Mesa Rd & Airway Rd	83.0 Acres	Truck Stop	5,116	100%	5,116
8	Vulcan	S 07-038	NE quadrant of Lone Star Rd (Paseo De La Fuente) & Otay Mesa Rd	12.7 Acres	Asphalt & Concrete Plant	1,078	100%	1,078
9	Otay Hills	P 04-004	e/o Alta Rd btwn Otay Mesa Rd & Calzada De La Fuente	112.1 Acres	Hard Rock Quarry on 433.9 total ac. w/112.1 ac. developed	2,189	100%	2,189
			Sub-Total:	**631.6 Acres**		**38,357**	**100%**	**38,357**
Project's Processing Tentative Maps								
10	International Industrial Park	TM 5549	n/o Lone Star Rd btwn Vann Centre Blvd & e/o Enrico Fermi Dr	161.1 Acres	113.6 Net Acres Business/Tech. Park	10,201	13%	1,327
11	OMC Properties	TPM 21140	NE Corner of Otay Mesa Rd & Alta Rd	49.8 Acres	30.1 Acres Tech. Business Park & 8.4 Acres Commercial Retail	6,972	13%	906
12	Otay Business Park	TM 5505	s/o Airway Rd, East of Alta Rd	161.6 Acres	2092.9 ksf of Ind./Business Park	33,486	13%	4,353
13	Otay Crossings Commerce Park	TM 5405 SPA 04-006	SE Quadrant of Otay Mesa Rd & Alta Rd	311.5 Acres	Mixed Industrial & Temporary Truck Parking	21,279	13%	2,766
14	Sunroad/Otay Tech Centre	SPA 07-003 TM 5538	n/o Otay Mesa Rd btwn Harvest Rd & Vann Centre Blvd	253.1 Acres	130 Acres Tech. Business Park & 27 Acres Commercial Retail	30,566	13%	3,974
15	Piper Otay Park	TM 5527	NE Corner of Otay Mesa Rd & Piper Ranch Rd	25.0 Acres	Light Industrial	1,612	13%	210
16	S. County Commerce Centre	TM 5394R	SW Corner of Otay Mesa Rd & Enrico Fermi Dr	81.2 Acres	Industrial	7,486	13%	973
17	Saeed Revised Map	TM 5304R	n/o Airway Rd btwn Paseo De Las Americas & Michael Faraday Dr	20.6 Acres	Industrial	2,602	13%	338
18	Hawano	TM 5566	e/o Airway Pl, w/o Alta Rd, s/o Airway Rd, & n/o Via De La Amistad	58.8 Acres	852.426 ksf of Ind./Business Park	13,639	11.46%	1,563
19	Rabago	TM 5568	NW Corner of Otay Mesa Rd & Enrico Fermi Dr	55.0 Acres	55.0 Net Acres Ind./Business Park on 71 Gross Acres	8,520	11.46%	976
			Sub-Total:	**1,177.7 Acres**		**136,363**	**11.46%**	**17,386**
			Grand-Total:	**1,809.3 Acres**		**174,720**	**-**	**55,743**

(a) Existing Interim Use processing a time Extension
NW = Northwest; NE = Northeast; SW = Southwest; SE = Southeast; n/o = north of; s/o = south of; e/o = East of; btwn = between

LIST OF CUMMULATIVE PROJECTS

PROJECT'S THAT ARE PROCESSING SITE PLANS

1. CALIFORNIA CROSSINGS
2. CCA SAN DIEGO CORRECTIONAL FACILITY
3. COPART COUNTY SALES YARD
4. FEDEX SITE PLAN
5. SALVAGE YARDS/NATIONAL ENTERPRISE RECYCLING
6. SUNROAD CENTRE I HARVEST RANCH NURSERY
7. TRAVEL PLAZA
8. VULCAN
9. OTAY HILLS

PROJECT'S THAT ARE PROCESSING TENTATIVE MAPS

10. INTERNATIONAL INDUSTRIAL PARK
11. OMC PROPERTIES
12. OTAY BUSINESS PARK
13. OTAY CROSSINGS COMMERCE PARK
14. SUNROAD/OTAY TECH CENTRE
15. PIPER OTAY PARK
16. SOUTH COUNTY COMMERCE CENTRE
17. SAEED REVISED MAP
18. HAWANO
19. RABAGO

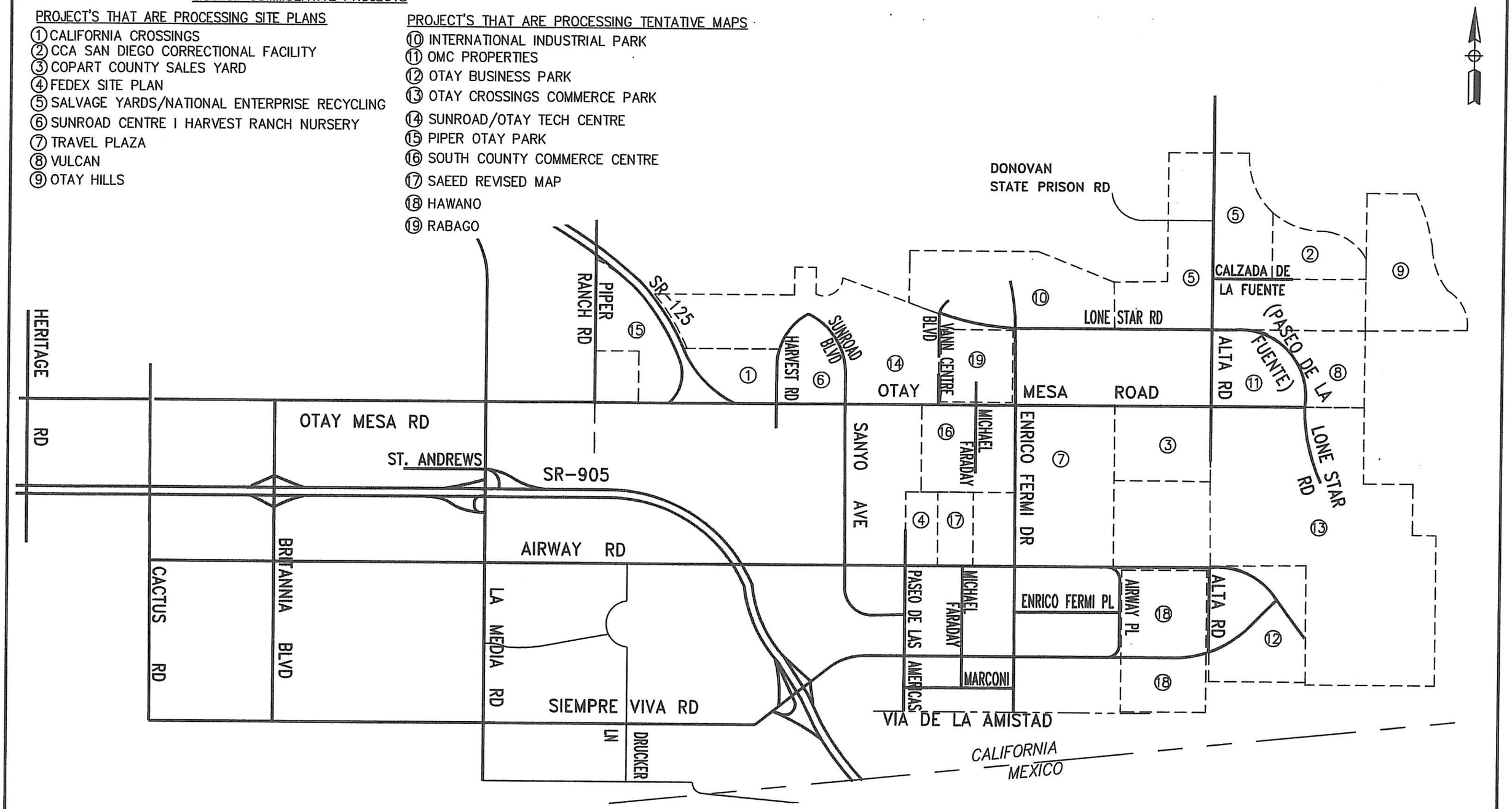

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FIGURE 20

LOCATION OF APPROVED/PENDING PROJECT IN EAST OTAY MESA

APPROVED/PENDING PROJECTS ACCESS

Three (3) of the approved/pending projects listed in Table 21: (1) International Industrial Park, TM 5549 (2) Otay Business Park, TM 5505; and (3) Otay Crossings Commerce Park, TM 5405 do not have project frontage along existing roadways. Thus, in order to include the traffic generated by these projects in the cumulative analysis some assumptions have to be made as to how the traffic associated with each of these projects would get to/from the existing roadway network. Figure 21 provides an illustration of the assumed points of access for each of these projects.

Each project's traffic will be assigned to the network presented on Figure 21. As each project is processed it will identify the facilities needed to accommodate its development and pay the County's Traffic Impact Fees (TIF) to mitigate cumulative impacts. It should be noted, that as illustrated in Figure 21, the extension of Airway Road and Siempre Viva Road east of Airway Place that are needed to provide access to the Otay Business Park (TM 5505) project are also the frontage roads/internal circulation roads for the Hawano project (the proposed project).

CUMULATIVE (YEAR 2020) WITH SR-905 1A &1B ROADWAY CONDITIONS

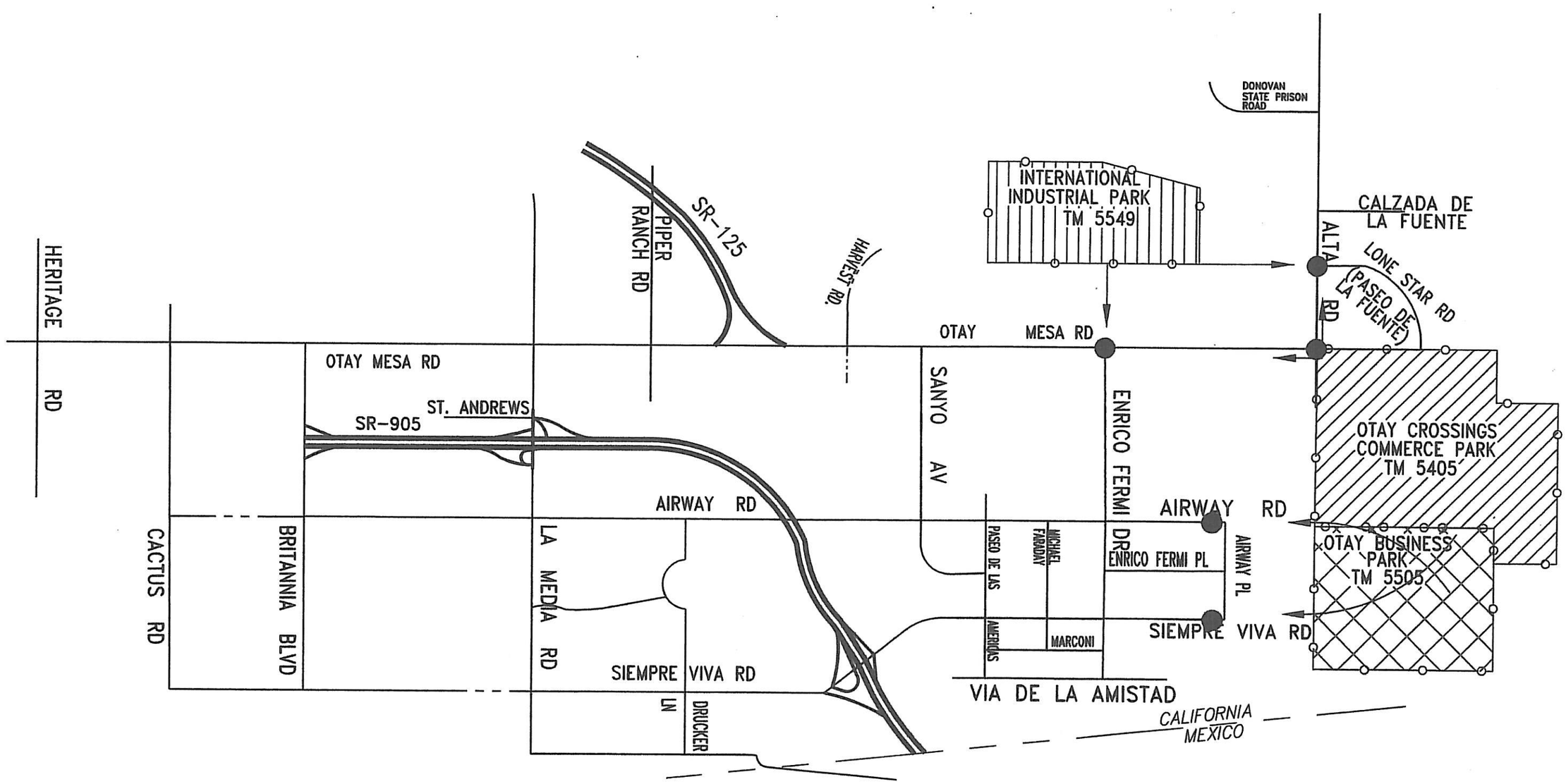
In addition to the roads that will be required to be constructed to provide access to the (1) International Industrial Park, TM 5549; (2) Otay Business Park, TM 5505; and (3) Otay Crossings Commerce Park, TM 5405 projects as described above, the development of several of the approved/pending projects listed in Table 21 will also result in the construction/modifications of existing intersections or roadway improvements in order to provide access to the project site. It is reasonable to assume the completion of the intersections modifications and roadway improvements because the cumulative projects associated with the improvements could not open without the completion of the assumed improvements. Since all the cumulative projects were assumed to be constructed by the year 2020, the following new roadway facilities and intersection modifications within the County of San Diego were assumed to be constructed under the cumulative conditions. The roadway conditions listed here are based on the pending projects constructing facilities required for their development.

- SR-905 Phases 1A & 1B were assumed to be completed and operational. See Section I for more details on the description of Phases 1A &1B of SR-905.

- Old Otay Mesa Road between Alta Road and Lone Star Road (Paseo De La Fuente) (currently a dirt road) will be built to the standards of a Light Collector (provides access for the following cumulative projects: Vulcan Materials [cumulative traffic assumed at 100%], OMC Properties [cumulative traffic assumed at 13%], and Otay Crossing Commerce Park [cumulative traffic assumed at 13%]);

- Airway Road between Airway Place (currently does not exist) and Alta Road will be built to the standards of a Light Collector (provides access for the following cumulative projects: Otay Business Park [cumulative traffic assumed at 13%] and Hawano [cumulative traffic assumed at 11.46%]);

- Airway Road between Alta Road and Siempre Viva Road (currently does not exist) will be built to the standards of a Light Collector (provides internal circulation for the following cumulative project: Otay Business Park [cumulative traffic assumed at 13%]);



LEGEND

- ● – CONNECTION POINT FOR CUMULATIVE PROJECTS
- – EXISTING DIRT ROAD
- – EXISTING PAVED ROADWAY FACILITY
- – CUMULATIVE PROJECTS BOUNDARY

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FIGURE 21

PROPOSED METHOD OF CONNECTING CUMULATIVE PROJECT TRAFFIC TO EXISTING CIRCULATION SYSTEM

- Siempre Viva Road between the CHP entrance east of Enrico Fermi Drive and Airway Place (currently only provides 2 westbound travel lanes) will be improved to the standards of a Light Collector Road (provides access for the following cumulative projects: Otay Business Park [cumulative traffic assumed at 13%] and Hawano [cumulative traffic assumed at 11.46%]);

- Siempre Viva Road between Airway Place and Alta Road (currently does not exist) will be built to the standards of a Light Collector Road (provides access for the following cumulative projects: Otay Business Park [cumulative traffic assumed at 13%] and Hawano [cumulative traffic assumed at 11.46%]);

- Siempre Viva Road between Alta Road and Siempre Viva Road (currently does not exist) will be built to the standards of a Light Collector Road (provides internal circulation for the following cumulative project: Otay Business Park [cumulative traffic assumed at 13%]);

- Harvest Road between Old Otay Mesa Road and Sunroad Boulevard (currently a dirt road) will be built to the standards of a Modified 4-Lane Industrial/Commercial Collector to accommodate a painted median and turn lanes at intersections (provides access for the following cumulative projects: California Crossings [cumulative traffic assumed at 100%] and Otay Tech Centre [Sunroad] [cumulative traffic assumed at 13%]);

- The Otay Mesa Road (SR-905)/Piper Ranch Road intersection has been modified to a four (4) legged intersection (south leg does not currently exist, provides access for the following cumulative projects: Interstate Industrial Centre [cumulative traffic assumed at 13%]); and Sunroad Otay Park [cumulative traffic assumed at 13%]);

- The Old Otay Mesa Road/Sanyo Avenue-Sunroad Boulevard intersection has been constructed as a four (4) legged intersection (north leg does not currently exist, provides access for the following cumulative project: Otay Tech Centre [cumulative traffic assumed at 13%]);

- The Old Otay Mesa Road/Vann Centre Boulevard intersection has been constructed as a T-intersection (Vann Centre Boulevard does not currently exist, provides access for the following cumulative projects: Otay Tech Centre [cumulative traffic assumed at 13%] and International Industrial Park[cumulative traffic assumed at 13%]);

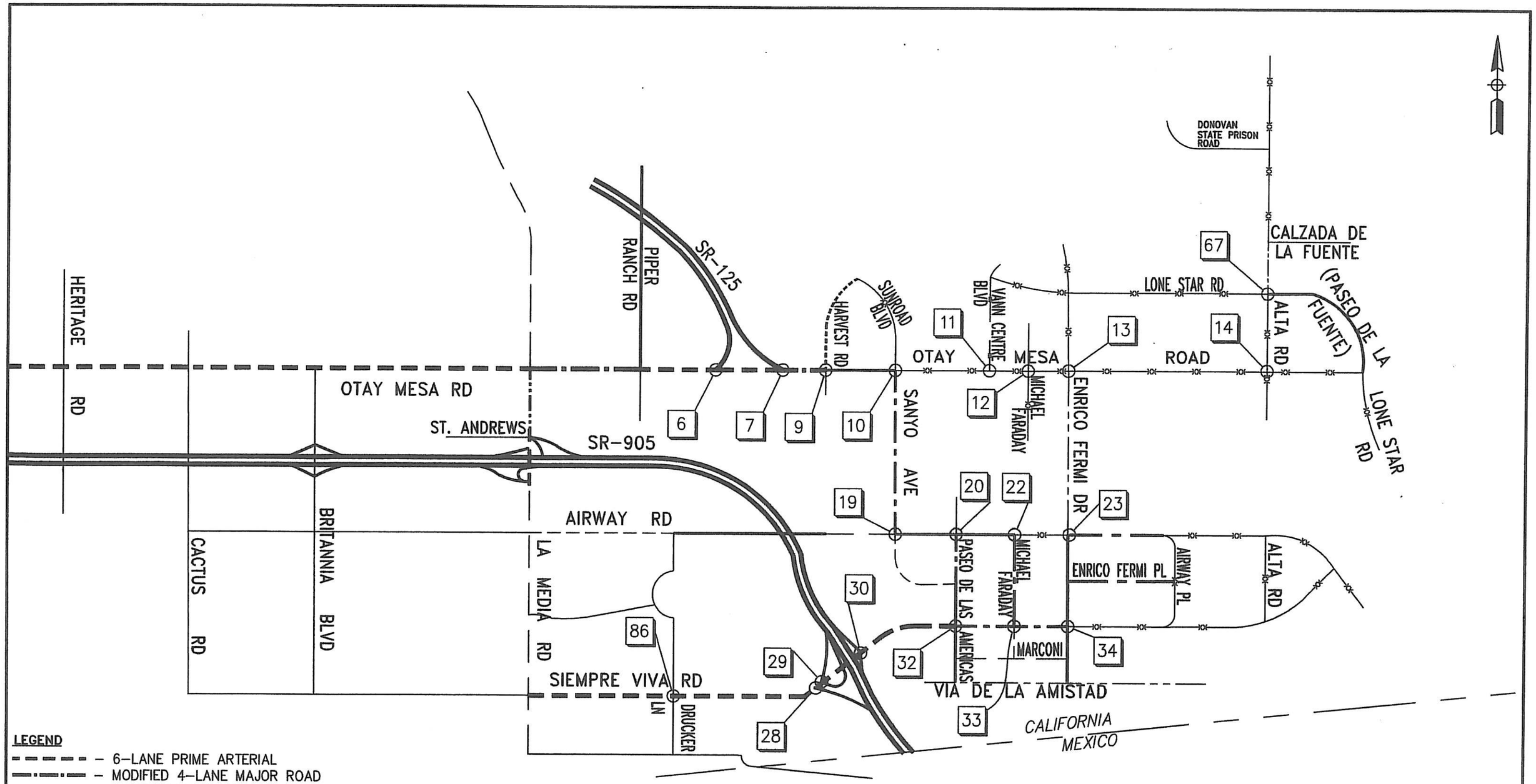
- The Old Otay Mesa Road/Michael Faraday intersection was assumed to be constructed as a 4-legged intersection (Michael Faraday does not currently exist at Otay Mesa Road, provides access for the following cumulative projects: South County Commerce Center [cumulative traffic assumed at 13%] and Rabago [cumulative traffic assumed at 11.46%]);

- The Old Otay Mesa Road/Enrico Fermi Drive intersection has been modified to a four (4) legged intersection (north leg does not currently exist access, provides access for the following cumulative projects: International Industrial Park [cumulative traffic assumed at 13%] and Rabago [cumulative traffic assumed at 11.46%]);

- The Alta Road/Lone Star Road (Paseo De La Fuente) intersection has been modified to a four (4) legged intersection (west leg currently does not exist, provides access for the following cumulative projects: International Industrial Park [cumulative traffic assumed at 11.46%] and Salvage Yards/National Enterprises Recycling [cumulative traffic assumed at 100%]);

- The Old Otay Mesa Road/Harvest Road intersection was assumed to be signalized (signalization of this intersections is required to provide access for the following cumulative project: California Crossings [cumulative traffic assumed at 100%]);

All other roadway segments and intersections were assumed to have the same lane configuration and traffic control as what currently exists (See Figures 12 and 13 in Section III). Figures 22 and 23 illustrate the cumulative (2020) with SR-905 1A & 1B roadway conditions.



LEGEND

- 6-LANE PRIME ARTERIAL
- MODIFIED 4-LANE MAJOR ROAD
- 4-LANE MAJOR ARTERIAL
- 4-LANE COLLECTOR
- 3-LANE TOWN COLLECTOR
- 2-LANE COLLECTOR
- 2-LANE COUNTY ROAD
- OTHER ROAD
- MODIFIED 4-LANE INDUSTRIAL/COMMERCIAL COLLECTOR
- MODIFIED 4-LANE COLLECTOR

XX – INTERSECTION ID #, SEE FIGURE 23 FOR INTERSECTION LANE CONFIGURATIONS

NOTE: INTERSECTION NUMBERS ARE NOT SEQUENTIAL

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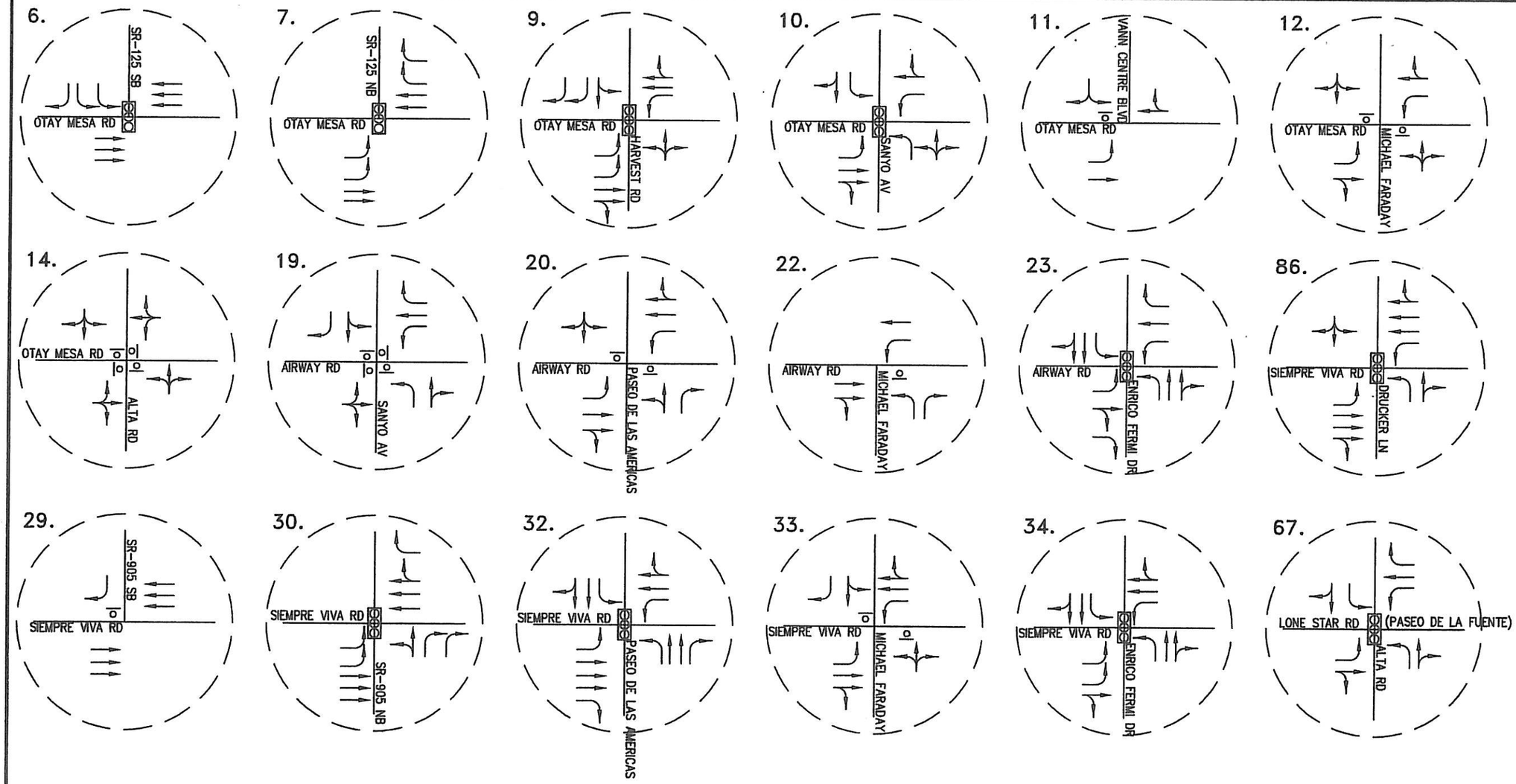
FIGURE 22

CUMULATIVE (2020) W/ SR-905 [PHASES 1A&1B] ROADWAY SEGMENT CONDITIONS



LEGEND

- TRAVEL LANE
- TRAFFIC SIGNAL
- STOP SIGN

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FIGURE 23

CUMULATIVE (2020) W/ SR-905 [PHASES 1A&1B]

INTERSECTION GEOMETRICS

CUMULATIVE (YEAR 2020) WITH SR-905 1A &1B TRAFFIC FORECASTS

The traffic forecast for cumulative (2020) with SR-905 Phases 1A and 1B was prepared by SANDAG based on the Series 11 model. The SANDAG 2020 model included 51,015 ADT for the approved/pending projects within the County of San Diego. This number was generated based on 100% of the development of the Site Plan projects 1-8 listed in Table 21 and 13% of the development of the Tentative Map projects 10-17 listed in Table 21. (The 13% was the absorption rate previously calculated by the County without the inclusion of Hawano or Rabago.) With the addition of the Hawano and Rabago projects the County reevaluated the percentage of absorption for industrial development and estimated that the pending Tentative Maps would each add 11.46% of their total traffic to the roadway network by 2020. To present a worse-case assessment, the County requested that 11.46% of the traffic generated by Hawano and Rabago be added to the 51,015 ADT that was included in the SANDAG 2020 forecasts. In addition, the Otay Hills project began processing its project after the initial SANDAG model was completed. Therefore, the 2,189 ADT generated by 100% development of the Otay Hills project (this project is processing an MUP and therefore needs to be included at 100%) was manually added on top of the SANDAG 2020 forecasts.

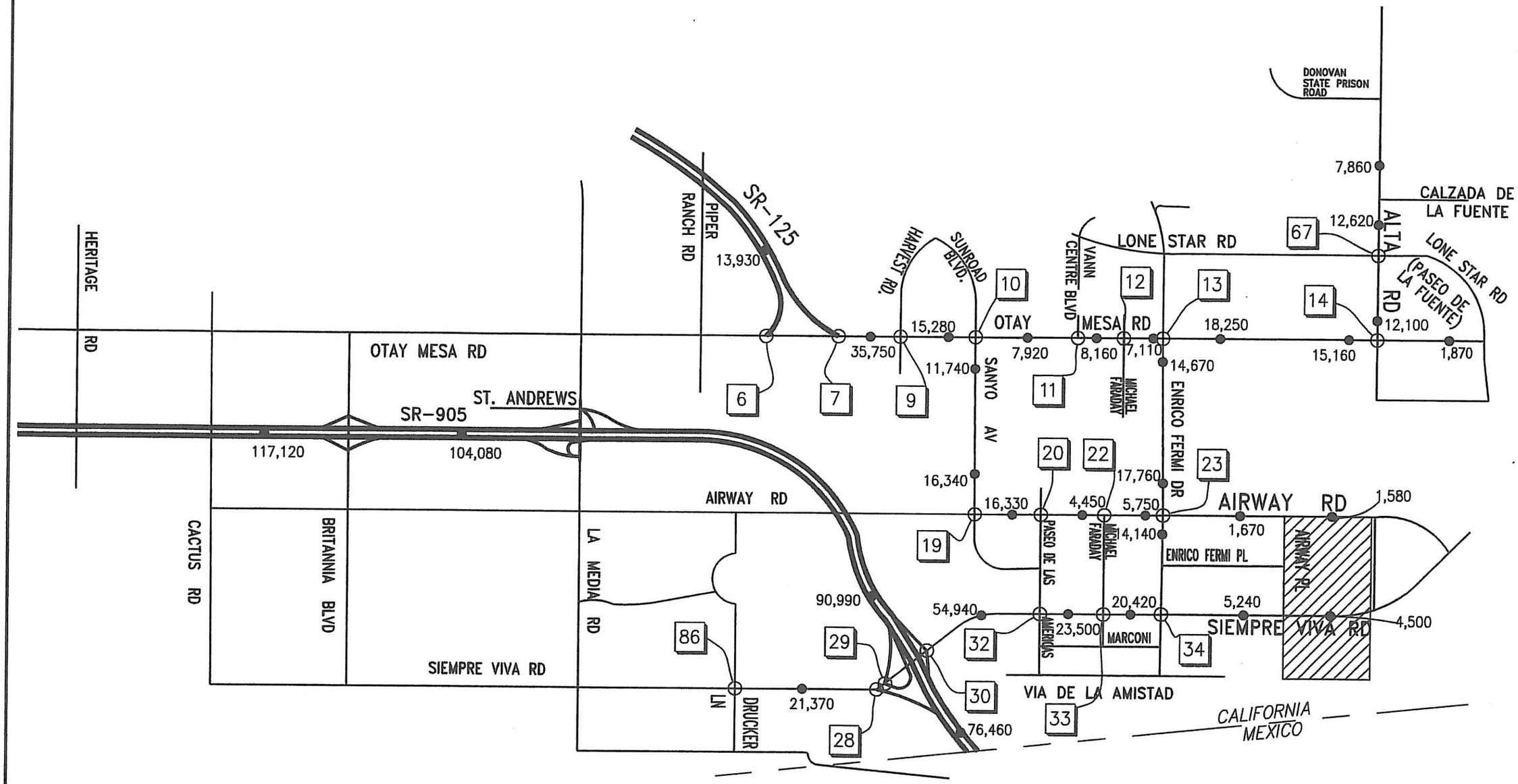
To make sure that the SANDAG 2020 model included potential growth within the City of San Diego, the City of San Diego provided SANDAG with proposed intensity of development that would occur by the year 2020 for the area of Otay Mesa located within the City's jurisdiction.

The roadway network assumptions included in the SANDAG model forecasts for the year 2020 were based on the assumptions previously described and illustrated in Figures 22 and 23. A copy of a map illustrating the roadway network assumptions utilized in the SANDAG 2020 model forecasts along with a copy of the SANDAG 2020 forecast are provided in Appendix B.

The trip distribution for the California Crossings project was based on a *Retail Site Selection Analysis* prepared by CBRE rather than a Select Zone distribution assignment generated by SANDAG. The *Retail Site Selection Analysis* estimated that approximately 70% of the customer base for California Crossings would come from cross border traffic from Mexico, while the SANDAG Select Zone forecast only estimated that 14% of the customer base for California Crossings would come from Mexico. Therefore, the results obtained from the SANDAG 2020 model forecast were modified to adjust the distribution for the California Crossings Project to reflect the findings of the *Retail Site Selection Analysis.*

Figures 24 and 25 provide the cumulative (2020) with SR-905 Phases 1A & 1B with project traffic volumes utilized in this analysis.

As previously discussed in Section II, the study area for cumulative (2020) conditions was based on the County of San Diego's criteria which recommends the inclusion of all transportation facilities that receive 25 or more peak hour trips from the proposed project, and the City of San Diego's criteria which requires the analysis of all regionally significant arterial system segments and intersections where the proposed project will add 50 or more peak hour trips in either direction and all mainline freeway locations where the project will add 100 or more peak hour trips in either direction. Since the proposed project adds less than 50 peak hour trips to the segments and intersections along Otay Mesa Road between Heritage Road and Piper Ranch Road, which are under the jurisdiction of the City of San Diego and less than 25 peak hour trips to the segments and intersections along Otay Mesa Road between Piper Ranch Road and SR-125 which is under the jurisdiction of the County of San Diego these roadway segments and intersections are not included in the cumulative (2020) analysis. (See Figures 8 and 10 provided in Section II for an illustration of the project's peak hour traffic volume assignment under cumulative conditions.)



LEGEND

● Z,ZZZ – AVERAGE DAILY TRAFFIC

▨ – PROJECT SITE

XX – INTERSECTION ID #, SEE FIGURE 25 FOR INTERSECTION PEAK HOUR TURNING VOLUMES

NOTE: INTERSECTION NUMBERS ARE NOT SEQUENTIAL

Darnell & ASSOCIATES, INC.

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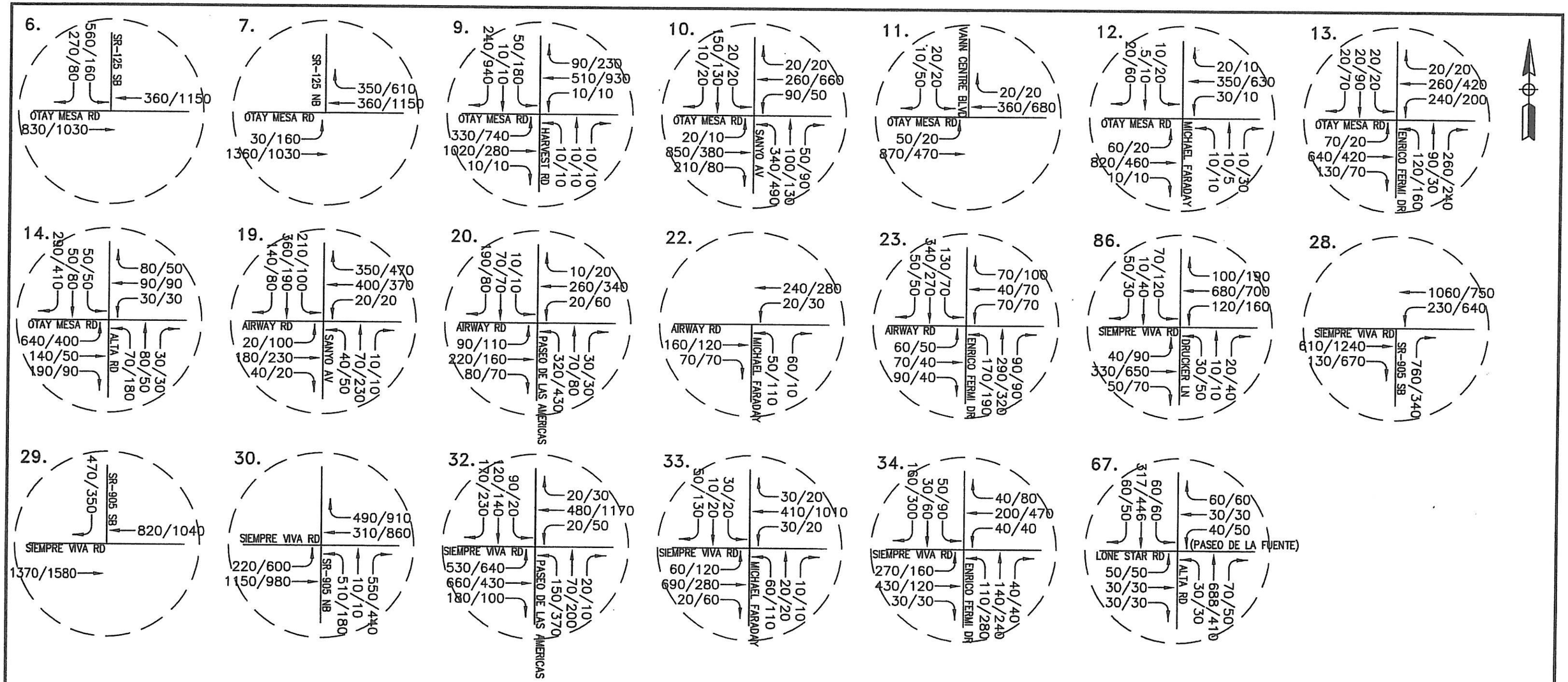
FIGURE 24

CUMULATIVE (2020) W/ SR-905 [PHASES 1A&1B] W/ PROJECT DAILY VOLUMES



LEGEND

→ – DIRECTION OF TRAVEL

XX/YY – AM/PM PEAK HOUR TRAFFIC VOLUMES

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FIGURE 25

CUMULATIVE (2020) W/ SR-905 [PHASES 1A&1B] W/ PROJECT PEAK HOUR TRAFFIC VOLUMES

CUMULATIVE (YEAR 2020) WITH SR-905 1A &1B LEVEL OF SERVICE

Cumulative - Roadway Segments

Table 22 summarizes the daily roadway segment level of service analysis under cumulative (2020) with SR-905 (Phases 1A & 1B). As shown in Table 22, the following roadway segments operate at LOS E or F under cumulative (2020) with SR-905 (Phases 1A & 1B) with project conditions:

- Otay Mesa Road (Old Otay Mesa Road) between Enrico Fermi Drive and Alta Road (operates at LOS C under existing conditions and LOS F under cumulative with project conditions);

- Enrico Fermi Drive between Otay Mesa Road and Airway Road (operates at LOS A under existing conditions and LOS E under cumulative with project conditions); and

- Alta Road between Lone Star Road (Paseo De La Fuente) and Otay Mesa Road (operates at LOS C under existing conditions and LOS E under cumulative with project conditions).

If the proposed project is fully occupied (the 2020 forecast assumed Hawano, is developed at 11.46%), it would add 955 ADT to the segment of Otay Mesa Road between Enrico Fermi Drive and Alta Road; 2,455 ADT to the segment of Enrico Fermi Drive between Otay Mesa Road and Airway Road; and 409 ADT to the segment of Alta Road between Lone Star Road (Paseo De La Fuente) and Otay Mesa Road. Therefore, the project is considered to be part of a significant cumulative impact to the segment of Otay Mesa Road between Enrico Fermi Drive and Alta Road, the segment of Enrico Fermi Drive between Otay Mesa Road and Airway Road, and the segment of Alta Road between Lone Star Road (Paseo De La Fuente) and Otay Mesa Road. See Section VIII for the recommended mitigation of the project's cumulative impacts to these segments of Otay Mesa Road, Enrico Fermi Drive, and Alta Road.

All other key roadway segments operate at an acceptable LOS D or better under cumulative (2020) with SR-905 (Phases 1A & 1B) conditions.

Cumulative - Intersections

Cumulative Intersections - Synchro Analysis

Table 23 summarizes the cumulative (2020) with SR-905 (Phases 1A & 1B) peak hour intersection level of service analysis. (A copy of the Synchro worksheets for cumulative conditions is provided in Appendix G.)

As shown in Table 23, the following intersections operate at an unacceptable LOS E or F under cumulative (2020) with SR-905 Phases 1A & 1B with or without project conditions during at least one of the peak hours:

- Otay Mesa Road/Michael Faraday Drive;
- Otay Mesa Road/Enrico Fermi Drive
- Otay Mesa Road/Alta Road;
- Airway Road/Sanyo Avenue;
- Airway Road/Paseo De Las Americas; and
- Siempre Viva Road/Michael Faraday Drive.

Table 22 – Cumulative (2020) With SR-905 1A &1B Roadway Segment Daily LOS Summary

Roadway Segment	Jurisdiction	Class	Capacity (LOS E)	Existing			Cumulative (2020) + Project						
				ADT	V/C	LOS	ADT	V/C	LOS	Proj.Trips (d)	Proj.Trips (e)	Δ V/C	Cuml Impact?
Old Otay Mesa Rd													
SR-125 to Harvest Rd	**County**/City	4M(m)	47,000(a)	14,068	0.30	A	35,750	0.76	C	109	955	0.46	No
Harvest Rd to Sanyo Av	**County**/City	4M	37,000	14,068	0.38	A	15,280	0.41	B	109	955	0.03	No
Sanyo Av to Vann Centre Blvd	**County**/City	LC	16,200	9,456	0.58	D	7,920	0.49	D	109	955	(0.09)	No
Vann Centre Blvd to Michael Faraday Dr	County	LC	16,200	9,456	0.58	D	8,160	0.50	D	125	1,091	(0.08)	No
Michael Faraday Dr to Enrico Fermi Dr	County	LC	16,200	9,456	0.58	D	7,110	0.44	D	125	1,091	(0.14)	No
Enrico Fermi Dr to Alta Rd	County	LC	16,200	6,089	0.38	C	**18,250**	**1.13**	**F**	**109**	**955**	**0.75**	**Yes**
Airway Road													
Sanyo Ave to Paseo De Las Americas	City	4M	40,000	5,649	0.14	A	16,330	0.41	B	109	955	0.27	No
Paseo De Las Americas to Michael Faraday Dr	**County**/City	4M	37,000	4,533	0.12	A	4,450	0.12	A	125	1,091	0.00	No
Michael Faraday Dr to Enrico Fermi Dr	**County**/City	LC	16,200	2,918	0.18	B	5,750	0.35	C	125	1,091	0.17	No
Enrico Fermi Dr to Airway Pl	County	4C	34,200	1,179	0.03	A	1,670	0.05	A	297	2,864	0.02	No
Siempre Viva Road													
Drucker Ln to SR-905	City	6P	60,000	6,127	0.10	A	21,370	0.36	A	70	614	0.26	No
SR-905 to Paseo de las Americas	City	6P	60,000	17,146	0.29	A	54,940	0.92	D	1,055	9,206	0.63	No
Paseo de las Americas to Michael Faraday Dr	City	4C	30,000	7,639	0.25	A	23,500	0.78	D	1,071	9,343	0.53	No
Michael Faraday Dr to Enrico Fermi Dr	City	4C	30,000	5,525	0.18	A	20,420	0.68	D	1,086	9,479	0.50	No
Enrico Fermi Dr to Airway Pl	County	LC	16,200	1,052	0.06	A	5,240	0.32	C	1,266	10,775	0.26	No
SR-125													
North of Otay Mesa Rd	SBX	4-Toll	(b)	9,160	0.10	A	13,930	0.15	A	94	818	0.05	No
Existing State Route 905													
South of Siempre Viva Rd	**City/Caltrans**	4-FWY	(b)	28,000	0.32	A	76,460	0.87	D	188	1,636	0.55	No
New State Route 905													
West of Britannia	Caltrans	6-FWY	(b)	Does Not Exist			117,120	0.89	D	750	6,547	-	No
Britannia to La Media	Caltrans	6-FWY	(b)	Does Not Exist			104,080	0.79	C	813	7,092	-	No
La Media to Siempre Viva Rd	Caltrans	6-FWY	(b)	Does Not Exist			90,990	0.69	C	797	6,956	-	No
Sanyo Avenue													
Otay Mesa Rd to Airway Rd	City	4C	30,000	7,022	0.23	A	16,340	0.54	C	62	546	0.31	No
Enrico Fermi Drive													
Otay Mesa Rd to Airway Rd	County	TC	19,000	2,949	0.16	A	**17,760**	**0.93**	**E**	**281**	**2,455**	**0.77**	**Yes**
Airway Rd to Enrico Fermi Pl	City	4M	40,000	3,977	0.10	A	14,140	0.35	A	391	1,909	0.25	No
Enrico Fermi Pl to Siempre Viva Rd	City	4M	40,000	4,355	0.11	A	14,140	0.35	A	391	1,909	0.24	No
Siempre Viva Rd to Via De La Amistad	City	4M	40,000	7,588	0.19	A	550	0.01	A	70	614	(0.18)	No
Airway Place (c)													
Airway Rd to Enrico Fermi Pl	County	2-I/C	16,200	50	0.00	A	200	0.01	A	141	341	0.01	No
Enrico Fermi Pl to Siempre Viva Rd	County	2-I/C	16,200	50	0.00	A	200	0.01	A	141	341	0.01	No
Alta Road													
Donovan State Prison Rd to Calzada De La Fuente	County	LC	16,200	5,873	0.36	C	7,860	0.49	D	31	273	0.89	No
Calzada De La Fuente to Lone Star Rd	County	TC	19,000	5,890	0.31	B	12,620	0.66	D	47	409	0.79	No
Lone Star Rd to Otay Mesa Rd	County	LC	16,200	6,057	0.37	C	**12,100**	**0.75**	**E**	**47**	**409**	**0.38**	**Yes**

City = Capacity of City segments is based on the upper limits of LOS E per the City of San Diego; County = Capacity of County segments is based on the upper limits of LOS E per the County of San Diego;
Bold = Jurisdiction which capacity is based on; ADT= Average Daily Traffic; LOS= Level of Service; Class = Roadway Classification; V/C = Volume-to LOS E Capacity Ratio; < C = Operates at LOS C or better;
ΔV/C = Increase (Decrease) in V/C due to addition of cumulative projects & cumulative roadway network, 6-Fwy = 6-Lane Freeway; 4-Fwy = 4-Lane Freeway; 4-Toll = $-Lane Toll Facility; 6P = 6-Lane Prime Arterial;
4M(m) = Modified 4-Lane Major Road; 4M = 4-Lane Major Arterial; 4C = 4-Lane Collector; TC = Town Collector; LC = Light Collector; 2-I/C = 2-Lane Industrial/Commercial Road
(a) Additional lanes may be provided to accommodate turning movements and freeway access; hence the roadway capacity 45,000 for City or 47,000 for County at LOS E 1/2-way between a 4-lane Major & 6-Lane Prime Arterial).
(b) Capacity is 2,300 vehicles per hour per lane, LOS is based on peak hour volumes per Caltrans District 11 & HCM procedures, See Appendix I for LOS calculations
(c) Roadway is constructed as a 2-lane, one-way non-circulation element roadway under existing conditions and as a 2-lane, 2-way Industrial Commercial Collector under Cumulative Plus Project Conditions
(d) Representative of what the project would assign to the roadway network if 11.46% of the project was developed by the year 2020, See Figure 7 in Section II, cumulative analysis assumes Hawano is developed at 11.46%
(e) Representative of what the project would assign to the roadway network if 100% of the project was developed by the year 2020, See Figure 9 in Section II, cumulative analysis assumes Hawano is developed at 11.46%

Table 23 – Cumulative (2020) With SR-905 1A &1B Intersection LOS Summary

Intersections	Jurisdiction	Traffic Control	Critical Move	Existing				Cumulative (2020) + Project											
				AM Peak		PM Peak		AM Peak						PM Peak					
				Delay	LOS	Delay	LOS	Delay	LOS	Δ Delay	Proj. Trips (b)	Proj. Trips (c)	Cum Impact	Delay	LOS	Δ Delay	Proj. Trips (b)	Proj. Trips (c)	Cum Impact
Otay Mesa Rd (E-W) @ SR-125 SB (N-S)	**County/ City/SBX**	Sig	Int	10.2	B	4.5	A	14.1	B	4.3	11	95	No	5.1	A	0.2	5	36	No
Otay Mesa Rd (E-W) @ SR-125 NB (N-S)	**County/ City/SBX**	Sig	Int	1.6	A	6.9	A	1.6	A	0.0	14	115	No	3.6	A	(2.3)	14	115	No
Otay Mesa Rd (E-W) @ Harvest Rd (N-S)	**County/ City**	TWSC[d]	NB	32.8	D	18.2	C	(d)	(d)	(d)	0	0	No	(d)	(d)	(d)	0	0	No
			SB	12.3	B	20.7	C	(d)	(d)	(d)	0	0		(d)	(d)	(d)	0	0	
		Sig [d]	Int	(d)	(d)	(d)	(d)	11.9	B	(d)	14	115		33.9	C	(d)	14	115	
Otay Mesa Rd (E-W) @ Sanyo Av (N-S)	**County/ City**	Sig	Int	4.7	A	14.6	B	44.6	D	40.5	20	164	No	44.5	D	30.3	20	164	No
Otay Mesa Rd (E-W) @ Vann Centre Blvd (N-S)	**County/ City**	OWSC	SB	Does Not Exist				28.6	D	-	1	13	No	21.4	C	-	0	3	No
Otay Mesa Rd (E-W) @ Michael Faraday (N-S)	County	TWSC	NB	Does Not Exist				**42.5**	**E**	-	**0**	**0**	**YES [a]**	22.8	C	-	0	0	No
			SB					30.2	D	-	0	0		27.9	D	-	0	0	
Otay Mesa Rd (E-W) @ Enrico Fermi Dr (N-S)	County	Sig	Int	11.6	B	12.7	B	**76.1**	**E**	**64.5**	**29**	**246**	**YES**	31.3	C	18.6	29	246	No
Otay Mesa Rd (E-W) @ Alta Rd (N-S)	County	AWSC	EB	14.3	B	8.3	A	**472.4**	**F**	**458.1**	**1**	**16**	**YES**	**145.7**	**F**	**137.4**	**9**	**65**	**YES**
			WB	0.0	A	0.0	A	16.2	C	16.2	2	13		18.0	C	18.0	0	3	
			NB	7.7	A	7.6	A	16.3	C	8.6	2	13		25.0	C	17.4	0	3	
			SB	8.1	A	8.5	A	30.2	D	22.1	5	39		**114.0**	**F**	**105.5**	**1**	**10**	
			Int	13.4	B	8.5	A	**273.7**	**F**	**260.3**	**10**	**81**		**99.2**	**F**	**90.7**	**10**	**81**	
Airway Rd (E-W) @ Sanyo Ave (N-S)	City	AWSC	EB	9.9	A	11.3	B	21.9	C	12.0	5	39	**YES**	**79.3**	**F**	**68.0**	**1**	**10**	**YES**
			WB	8.5	A	8.9	A	**47.4**	**E**	**38.9**	**3**	**23**		**119.7**	**F**	**110.8**	**11**	**92**	
			NB	8.2	A	10.4	B	13.0	B	4.8	0	0		28.7	D	18.3	0	0	
			SB	14.0	B	10.3	B	**180.9**	**F**	**166.9**	**6**	**53**		**40.2**	**E**	**29.9**	**2**	**13**	
			Int	11.8	B	10.1	B	**93.3**	**F**	**81.5**	**14**	**115**		**82.3**	**F**	**72.2**	**14**	**115**	

(a) Although project does not add traffic to the critical movement, it adds traffic to the intersection and is therefore considered to be significant
(b) Representative of what the project would assign to the roadway network if 11.46% of the project was developed by the year 2020, See Figure 8 in Section II, cumulative analysis assumes Hawano is developed at 11.46%
(c) Representative of what the project would assign to the roadway network if 100% of the project was developed by the year 2020, See Figure 10 in Section II, cumulative analysis assumes Hawano is developed at 11.46%
(d) Intersection is TWSC under existing conditions and signalized under Cumulative (2020) Conditions
LOS=Level of Service; Delay is measured in seconds/vehicle; sig=signalized; AWSC=All Way Stop Controlled; TWSC = Two-Way Stop-Controlled; OWSC=One Way Stop Controlled; Int = Intersection;
NB = Northbound Approach; SB = Southbound Approach; EB = Eastbound Approach; WB = Westbound Approach; NBL = Northbound Left; NBL-T = Northbound Left-Through;
SBL-T = Southbound Left-Through; SBX = South Bay Expressway; E-W = East-West Roadway; N-S = North-South Roadway;
Err = Delay is too high for the software to calculate; **Bold** = Jurisdiction which significance criteria is based on; Δ Delay = Increase (Decrease) due to the addition of cumulative projects including the proposed project

Table 23 (Continued) – Cumulative (2020) With SR-905 1A &1B Intersection LOS Summary

Intersections	Jurisdiction	Traffic Control	Critical Move	Existing				Cumulative + Project											
				AM Peak		PM Peak		AM Peak						PM Peak					
				Delay	LOS	Delay	LOS	Delay	LOS	Δ Delay	Proj. Trips (b)	Proj. Trips (c)	Cum Impact	Delay	LOS	Δ Delay	Proj. Trips (b)	Proj. Trips (c)	Cum Impact
Airway Rd (E-W) @ Paseo De Las Americas (N-S)	**County/ City**	TWSC	NBL-T	11.3	B	11.8	B	**Err**	**F**	-	**0**	**0**	**YES** [a]	**Err**	**F**	-	**0**	**0**	**YES** [a]
			SB	8.8	A	9.2	A	22.0	C	13.2	0	0		**37.9**	**E**	**28.7**	**0**	**0**	
Airway Rd (E-W) @ Michael Faraday (N-S)	**County/ City**	OWSC	NBL	9.6	A	9.6	A	15.2	C	5.6	0	0	No	17.1	C	7.5	0	0	No
Airway Rd (E-W) @ Enrico Fermi Dr (N-S)	**County/ City**	Sig	Int	14.7	B	16.5	B	24.5	C	9.8	75	544	No	25.9	C	9.4	56	455	No
Siempre Viva Rd (E-W) @ Drucker Ln (N-S)	City	Sig	Int	14.1	B	16.2	B	18.7	B	4.6	4	32	No	25.2	C	9.0	10	82	No
Siempre Viva Rd (E-W) @ SR-905 SB to EB Siempre Viva (N-S)	City/ **Caltrans**	Sig	Int	3.6	A	6.9	A	11.0	B	7.4	87	757	No	12.6	B	5.7	49	422	No
Siempre Viva Rd (E-W) @ SR-905SB to WB Siempre Viva (N-S)	City/ **Caltrans**	OWSC	SB	10.4	B	10.4	B	21.5	C	11.1	0	0	No	17.4	C	7.0	0	0	No
Siempre Viva Rd (E-W) @ SR-905 NB Ramp (N-S)	City/ **Caltrans**	Sig	Int	8.8	A	8.0	A	18.5	B	9.7	125	1,081	No	12.6	B	4.6	130	1129	No
Siempre Viva Rd (E-W) @ Paseo De Las Americas (N-S)	City	Sig	Int	27.2	C	35.7	D	23.9	C	(3.3)	126	1,097	No	53.0	D	17.3	132	1146	No
Siempre Viva Rd (E-W) @ Michael Faraday (N-S)	City	TWSC	NB	10.9	B	13.1	B	**349.9**	**F**	**339.0**	**0**	**0**	**YES**	**Err**	**F**	-	**0**	**0**	**YES**
			SBL-T	10.7	B	12.5	B	**88.1**	**F**	**77.4**	**1**	**13**		**377.3**	**F**	**289.2**	**0**	**3**	
Siempre Viva Rd (E-W) @ Enrico Fermi Dr (N-S)	**County/ City**	Sig	Int	26.3	C	31.6	C	24.8	C	(1.5)	165	1,353	No	28.7	C	(2.7)	173	1,380	No
Alta Rd (N-S) @ Lone Star Rd (Paseo De La Fuente) (E-W)	County	Sig	Int	0.8	A	1.9	A	16.6	B	15.8	6	49	No	16.2	B	14.3	6	49	No

(a) Although project does not add traffic to the critical movement, it adds traffic to the intersection and is therefore considered to be significant
(b) Representative of what the project would assign to the roadway network if 11.46% of the project was developed by the year 2020, See Figure 8 in Section II, cumulative analysis assumes Hawano is developed at 11.46%
(c) Representative of what the project would assign to the roadway network if 100% of the project was developed by the year 2020, See Figure 10 in Section II, cumulative analysis assumes Hawano is developed at 11.46%
(d) Intersection is TWSC under existing conditions and signalized under Cumulative (2020) Conditions
LOS=Level of Service; Delay is measured in seconds/vehicle; sig=signalized; AWSC=All Way Stop Controlled; TWSC = Two-Way Stop-Controlled; OWSC=One Way Stop Controlled; Int = Intersection;
NB = Northbound Approach; SB = Southbound Approach; EB = Eastbound Approach; WB = Westbound Approach; NBL = Northbound Left; NBL-T = Northbound Left-Through;
SBL-T = Southbound Left-Through; SBX = South Bay Expressway; E-W = East-West Roadway; N-S = North-South Roadway;
Err = Delay is too high for the software to calculate; **Bold** = Jurisdiction which significance criteria is based on; Δ Delay = Increase (Decrease) due to the addition of cumulative projects including the proposed project

At the Otay Mesa Road/Michael Faraday Drive intersection, the northbound approach operates at LOS E during the AM peak hour under cumulative (2020) with project conditions. If the project is fully occupied (the 2020 forecast assumes Hawano is developed at 11.46%), it would not add any trips to the northbound or southbound approaches, however it would add 131 peak hour trips to the overall intersection during the AM and PM peak hours. Therefore, the proposed project is considered to be part of the significant cumulative impact at the Otay Mesa Road/Michael Faraday Drive intersection.

The Otay Mesa Road/Enrico Fermi Drive intersection operates at LOS E during the AM peak hour and LOS C during the PM peak hour under cumulative (2020) with project conditions. If the project is fully occupied (the 2020 forecast assumes Hawano is developed at 11.46%), it would add 246 peak hour trips to the intersection during the AM peak hour. Therefore, the proposed project is considered to be part of the significant cumulative impact at the Otay Mesa Road/Enrico Fermi Drive intersection.

The Otay Mesa Road/Alta Road intersection operates at LOS F during both the AM and PM peak hours. If the project is fully occupied (the 2020 forecast assumes Hawano is developed at 11.46%), it would add 81 peak hour trips to the overall intersection during the AM peak hour and 81 peak hour trips to the overall intersection during the PM peak hour. Therefore, the proposed project is considered to be part of the significant cumulative impact at the Otay Mesa Road/Alta Road intersection.

The Airway Road/Sanyo Avenue intersection operates at LOS F during both the AM and PM peak hours under cumulative (2020) without project conditions. The addition of the traffic generated by 11.46% of the Hawano project site increases the existing delay by 260.3 seconds during the AM peak hour and 90.7 seconds during the PM peak hour. The increase in delay exceeds the one (1) second allowed per the City of San Diego's thresholds for significance for an intersection operating at LOS F. Therefore, the proposed project is considered to be part of the significant impact at the Airway Road/Sanyo Avenue intersection under cumulative (2020) conditions.

At the Airway Road/Paseo De Las Americas intersection, under cumulative (2020) with project conditions the northbound left-through movement operates at LOS F during both the AM and PM peak hours and the southbound approach operates at LOS E during the PM peak hour. If the project is fully occupied (the 2020 forecast assumes Hawano is developed at 11.46%), it would not add any trips to the failing (critical) movements, however it would add and 131 peak hour trips to the overall intersection during the AM peak hour and 131 peak hour trips to the overall intersection during the PM peak hour. Therefore, the proposed project is considered to be part of the significant cumulative impact at the Airway Road/Paseo De Las Americas intersection.

At the Siempre Viva Road/Michael Faraday Drive intersection, the northbound approach and the southbound left-through movement operate at LOS F during both the AM and PM peak hours under cumulative (2020) with project conditions. The addition of the traffic generated by 11.46% of the Hawano project site increases the existing delay on the southbound left-through movement by 77.4 seconds during the AM peak hour and 289.2 seconds during the PM peak hour. The increase in delay exceeds the one (1) second allowed per the City of San Diego's thresholds for significance for an intersection operating at LOS F. Therefore, the proposed project is considered to be part of the significant impact at the Siempre Viva Road/Michael Faraday Drive intersection under cumulative (2020) conditions.

Cumulative Intersection - ILV Analysis

Table 24 summarizes the cumulative (2020) with SR-905 (Phases 1A & 1B) ILV analysis. As shown in Table 24, all intersections operate under stable flow during the AM and PM peak hours under cumulative (2020) with SR-905 [Phases 1A & 1B] conditions with or without the proposed project. A copy of the ILV worksheets can be found in Appendix G.

Table 24 – Cumulative (2020) w/ SR-905 [Phases 1A & 1B] ILV Analysis

Intersection	Existing				Cumulative With Project			
	AM Peak		PM Peak		AM Peak		PM Peak	
	ILV/Hr	Operating Condition	ILV/Hr	Operating Condition	ILV/Hr	Operating Condition	ILV/Hr	Operating Condition
Otay Mesa Rd (E-W) @ SR-125 SB (N-S)	482	Stable Flow	341	Stable Flow	557	Stable Flow	464	Stable Flow
Otay Mesa Rd (E-W) @ SR-125 NB (N-S)	577	Stable Flow	424	Stable Flow	680	Stable Flow	655	Stable Flow
Siempre Viva Rd (E-W) @ SR-905 SB to EB Siempre Viva Rd (N-S)	275	Stable Flow	330	Stable Flow	627	Stable Flow	1,075	Stable Flow
Siempre Viva Rd (E-W) @ SR-905 NB (N-S)	339	Stable Flow	394	Stable Flow	904	Stable Flow	975	Stable Flow

ILV/Hr = Intersecting Lane Vehicles per hour; < 1,200 ILV/Hr = Stable flow; 1,200 – 1,500 ILV/Hr = Unstable Flow; 1,500 ILV/Hr = Capacity; E-W = East-West; N-S = North-South

SECTION VI – YEAR 2030 CONDITIONS

The 2030 roadway conditions and traffic forecast for the East Otay Mesa area are based on the East Otay Mesa Specific Plan Amendment (SPA 10-001) that was approved by the County Board of Supervisors on September 15, 2010. Descriptions of the roadway network and traffic volumes included in the East Otay Mesa Specific Plan are discussed in this section of the study.

EAST OTAY MESA SPECIFIC PLAN AMENDMENT (EOMSPA)

As discussed in Section I, the East Otay Mesa Specific Plan Amendment (SPA 10-001) that was approved by the County Board of Supervisors on September 15, 2010 is the most current approved amendment for East Otay Mesa. The East Otay Mesa Specific Plan Amendment (SPA 10-001) identifies the land use for the proposed Hawano site as Light Industrial, which is consistent with the proposed development for the project site.

Circulation Network

Figure 26 illustrates circulation plan for 2030 conditions in the East Otay Mesa area in the County of San Diego as identified in the East Otay Mesa Specific Plan Amendment (SPA 10-001).

Traffic Forecasts

Using the land use information identified in the East Otay Mesa Specific Plan Amendment (SPA 10-001), Linscott, Law, & Greenspan Engineers (LL&G) worked with SANDAG and the County of San Diego to forecast the buildout (2030) traffic volumes for the roadways in the East Otay Mesa area. LL&G summarized the results of their analysis in their August 8, 2010 *East Otay Mesa Specific Plan Amendment Traffic Impact Analysis.*

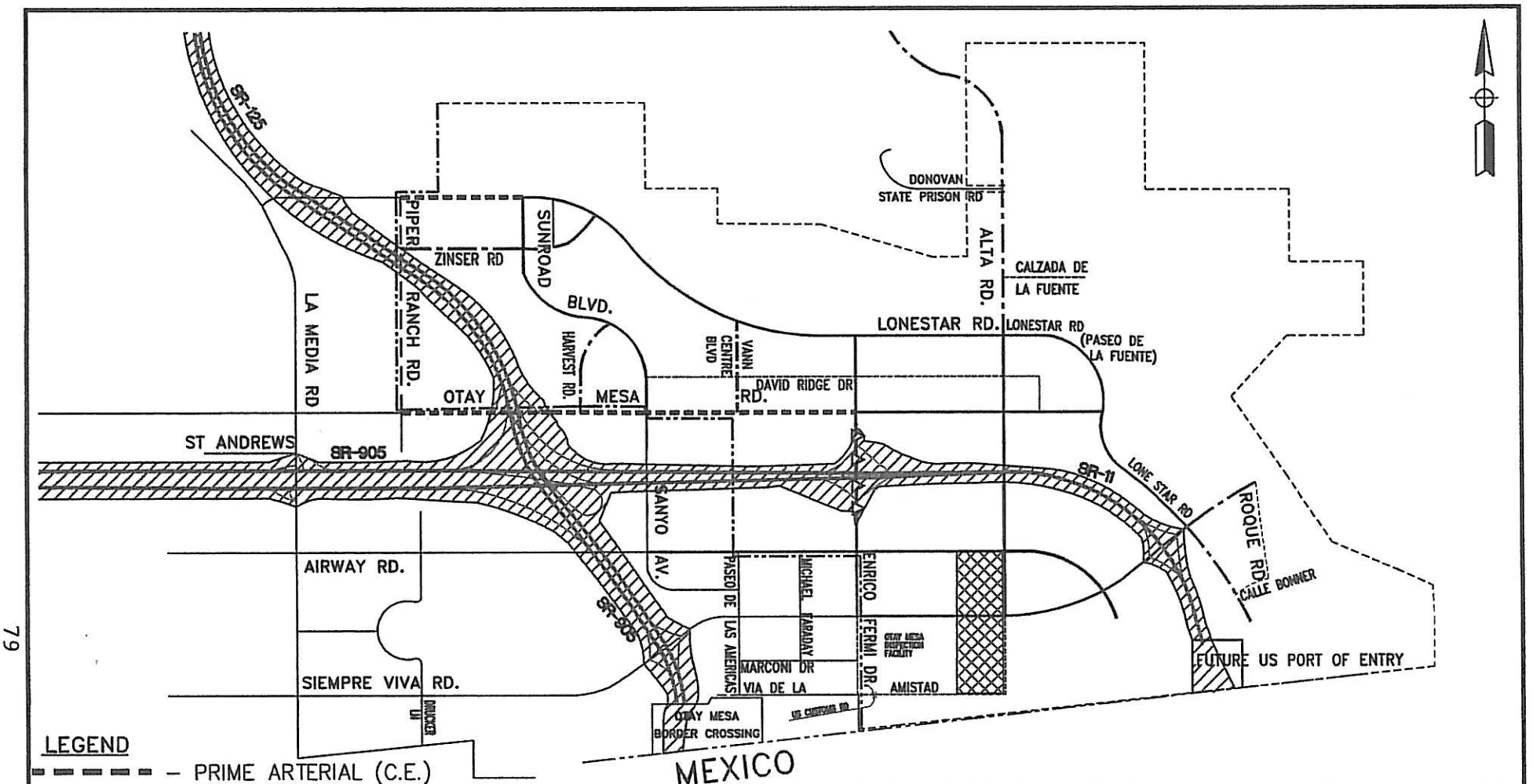
Since the proposed Hawano project is consistent with the East Otay Mesa Specific Plan (EOMSP), the traffic from proposed project is included in the build out (2030) forecast summarized in LL&G's August 8, 2010 *East Otay Mesa Specific Plan Amendment Traffic Impact Analysis*. Figure 27 provides the 2030 traffic forecast for East Otay Mesa area including build out of the proposed project (Phases 1-2).

YEAR 2030 ROADWAY SEGMENT LEVEL OF SERVICE ANALYSIS

As shown in Table 25, with the exception of the segments of Siempre Viva Road between the SR-905 and Paseo De Las Americas and Sanyo Avenue between Otay Mesa Road and Airway Road all roadway segments in the proposed circulation plan for the EOMSPA operate at acceptable level of service under 2030 conditions.

The segment of Siempre Viva Road between the SR-905 and Paseo De Las Americas operates at LOS E under 2030 conditions without project conditions. With the addition of 1,432 ADT from Phases 1-2 of the project, the v/c ratio will be increased by 0.02 and the level of service on this segment of Siempre Viva Road will continue to operate at LOS E. The increase in v/c does not exceed the 0.02 allowed per the City of San Diego' thresholds for significance for a roadway segment operating at LOS E, thus, based on average daily conditions Phases 1-2 of the project does not have a significant impact on this segment of Siempre Viva Road under 2030 conditions and mitigation will not be required.

The segment of Sanyo Avenue between Otay Mesa Road and Airway Road operates at LOS E under 2030 conditions without project conditions. With the addition of 546 ADT from Phases 1-2 of the project, the v/c ratio will be increased by 0.02 and the level of service on this segment of Siempre Viva Road will continue to operate at LOS E. The increase in v/c does not exceed the 0.02 allowed per the City of San Diego' thresholds for significance for a roadway segment operating at LOS E, thus, based on average daily conditions Phases 1-2 of the project does not have a significant impact on this segment of Sanyo Avenue under 2030 conditions and mitigation will not be required.



LEGEND

- PRIME ARTERIAL (C.E.)
- ENCHANCED MAJOR ROAD(C.E.)(REQUIRES ADDITIONAL RIGHT-OF-WAY TO ACCOMODATE TURN MOVEMENTS AND FREEWAY ACCESS FROM OTAY MESA ROAD TO SR-11)
- MAJOR ROAD (C.E.)
- 4-LANE COLLECTOR ROAD (C.E.)
- 4-LANE ROAD (S.P.)
- 2-LANE ROAD (S.P.)
- CITY ROAD/OTHER ROAD
- CITY/COUNTY BOUNDARY
- EAST OTAY MESA BOUNDARY
- FREEWAY RIGHT-OF-WAY
- PROJECT SITE

NOTE:
C.E. - CIRCULATION ELEMENT ROAD
S.P. - SPECIFIC PLAN ROAD

NOTE: SR-11 INTERCHANGES PER EAST OTAY MESA SPECIFIC PLAN

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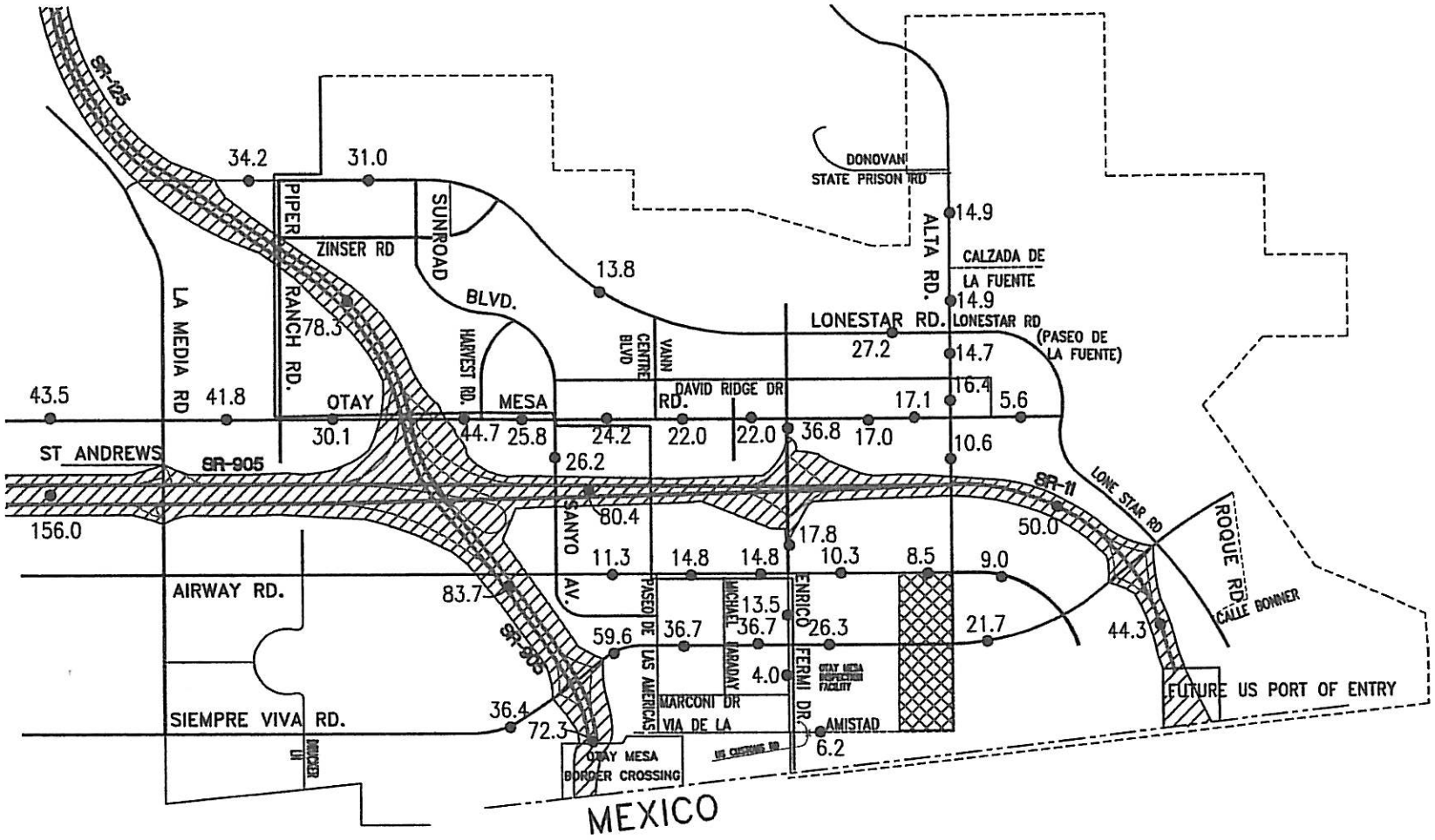
FIGURE 26
ADOPTED CIRCULATION PLAN FOR EAST OTAY MESA (2030 CONDITIONS)



LEGEND NOTE: SR-11 INTERCHANGES PER EAST OTAY MESA SPECIFIC PLAN

XX.X – AVERAGE DAILY TRAFFIC VOLUMES IN THOUSAND (INCLUDES PROJECT TRAFFIC)

-·-·-·-·- – CITY/COUNTY BOUNDARY

---------- – EAST OTAY MESA BOUNDARY

– FREEWAY RIGHT-OF-WAY

– PROJECT SITE

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FIGURE 27

ADOPTED CIRCULATION PLAN TRAFFIC FORECAST-2030 + PROJECT (PHASES 1-2)

Table 25 – 2030 + Project Build Out (Phases 1-2) Roadway Segment Daily LOS Summary

Roadway Segment	Jurisdiction	Class	Capacity (LOS E)	2030 w/o Project			2030 + Project Build Out (Phases 1 – 2)					
				ADT	V/C	LOS	Proj. Tr	ADT	V/C	LOS	ΔV/C	Sig
Otay Mesa Rd												
SR-125 to Harvest Rd	**County**/City	6P	57,000	43,775	0.77	C	955	44,730	0.78	D	0.01	No
Harvest Rd to Sanyo Ave	**County**/City	6P	57,000	24,795	0.44	B	955	25,750	0.45	B	0.01	No
Sanyo Ave to Vann Centre	**County**/City	6P	57,000	23,195	0.41	B	955	24,150	0.42	B	0.01	No
Vann Centre to Michael Faraday	County	6P	57,000	20,889	0.37	A	1,091	21,980	0.39	A	0.02	No
Michael Faraday to Enrico Fermi Dr	County	6P	57,000	20,889	0.37	A	1,091	21,980	0.39	A	0.02	No
Enrico Fermi Dr to Alta Rd	County	4M	37,000	16,827	0.45	B	273	17,100	0.46	B	0.01	No
Airway Road												
Sanyo Ave to Paseo de Las Americas	City	4M	40,000	10,385	0.26	A	955	11,340	0.28	A	0.02	No
Paseo de Las Americas to Michael Faraday Dr	**County**/City	4M	37,000	13,679	0.37	A	1,091	14,770	0.40	A	0.03	No
Michael Faraday to Enrico Fermi Dr	**County**/City	4M	37,000	13,679	0.37	A	1,091	14,770	0.40	A	0.03	No
Enrico Fermi Dr to Airway Pl	County	4M	37,000	8,254	0.22	A	2,046	10,300	0.28	A	0.06	No
Siempre Viva Road												
Drucker Ln to SR-905	City	6P	60,000	35,756	0.60	C	614	36,370	0.61	C	0.01	No
SR-905 to Paseo de Las Americas	City	6P	60,000	58,138	0.97	E	1,432	59,570	0.99	E	0.02	No
Paseo de Las Americas to Michael Faraday Dr	City	6P	60,000	35,268	0.59	C	1,432	36,700	0.61	C	0.02	No
Michael Faraday to Enrico Fermi Dr	City	6P	60,000	35,132	0.59	C	1,568	36,700	0.61	C	0.02	No
Enrico Fermi Dr to Airway Pl	County	4M	37,000	21,224	0.57	B	5,046	26,270	0.71	C	0.14	No
SR-125												
North of Otay Mesa Rd	SBX	4-Toll	(b)	77,482	0.85	D	818	78,300	0.86	D	0.01	No
SR-905												
Britannia Blvd to La Media Rd	Caltrans	8-Fwy	(b)	149,453	0.85	D	6,547	156,000	0.89	D	0.04	No
La Media Rd to Siempre Viva Rd	Caltrans	8-Fwy	(b)	73,308	0.42	B	7,092	80,400	0.46	B	0.04	No
South of Siempre Viva Rd	Caltrans	4-Fwy	(b)	71,482	0.81	D	818	72,300	0.82	D	0.01	No
Sanyo Avenue												
Otay Mesa Rd to Airway Rd	City	4C	30,000	25,634	0.85	E	546	26,180	0.87	E	0.02	No
Enrico Fermi Drive												
Otay Mesa Rd to SR-11	County	4M(m)	47,000(a)	35,067	0.75	C	1,773	36,840	0.78	C	0.03	No
SR-11 to Airway Rd	County	4M	37,000	11,662	0.32	A	6,138	17,800	0.48	B	0.16	No
Airway Rd to Enrico Fermi Pl	City	4M	40,000	8,317	0.21	A	5,183	13,500	0.34	A	0.13	No
Enrico Fermi Pl to Siempre Viva Rd	City	4M	40,000	8,317	0.21	A	5,183	13,500	0.34	A	0.13	No
Siempre Viva Rd to Via De La Amistad	City	4M	40,000	1,583	0.04	A	2,387	3,970	0.10	A	0.06	No
Airway Place												
Airway Rd to Enrico Fermi P	County	2-I/C	16,200	1,400	0.09	A	0	1,400	0.09	A	0.00	No
Enrico Fermi Pl to Siempre Viva Rd	County	2-I/C	16,200	1,400	0.09	A	0	1,400	0.09	A	0.00	No
Alta Road												
Donovan State Prison Rd to Calzada De La Fuente	County	4C	34,200	14,627	0.43	B	273	14,900	0.44	B	0.01	No
Calzada De La Fuente to Lone Star Rd (Paseo De La Fuente)	County	4C	34,200	14,491	0.42	B	409	14,900	0.44	B	0.02	No
Lone Star Rd (Paseo De La Fuente) to Otay Mesa Rd	County	4M	37,000	15,991	0.43	B	409	16,400	0.44	B	0.01	No

City = Capacity of City segments is based on the upper limits of LOS E per the City of San Diego; County = Capacity of County segments is based on the upper limits of LOS E per the County of San Diego;
Bold = Jurisdiction which capacity is based on; ADT= Average Daily Traffic; LOS= Level of Service; V/C = Volume-to LOS E Capacity Ratio; SBX = South Bay Expressway
8-Fwy = 8-Lane Freeway; 4-Fwy = 4-Lane Freeway; 4-Toll = 4-Lane Toll Facility6P = 6-Lane Prime Arterial; 4M(m)= 4-Lane Modified Major Arterial; 4M = 4-Lane Major Arterial; 4C = 4-Lane Collector;
LC = Light Collector; 2-I/C = 2-Lane Industrial/Commercial Road
(a) Additional lanes may be provided to accommodate turning movements and freeway access; hence the roadway capacity was assumed to be 47,000 ADT at LOS E (half way between a 4M & 6P).
(b) Capacity is 2,300 vehicles per hour per lane, LOS is based on Caltrans District 11 & HCM procedures, See Appendix I for LOS calculations

SECTION VII – PROJECT ACCESS & INTERNAL CIRCULATION

PROJECT ACCESS

The proposed project is located on a 79.6 gross acre site (58.8 net useable acres) located in the East Otay Mesa Area of San Diego County. The proposed project is bounded by Airway Road on the north, Via De La Amistad on the south, Airway Place on the west, and Alta Road on the east. Under existing and cumulative (2020) with SR-905 Phase 1A & 1B conditions access to the project site will be provided from the west via Airway Road, Enrico Fermi Place, and Siempre Viva Road. Under buildout (2030) conditions, additional access will be provided from Via de La Amistad to the west, Alta Road to the north, Airway Road to the east, and Siempre Viva Road to the east.

INTERNAL TRIP DISTRIBUTION/INTERNAL TRAFFIC

Figures 28 and 29 illustrate the internal trip distribution percentages and project related traffic volumes for Phase 1 and Phases 1-2, respectively on the internal roadway network for existing conditions. Figure 30 illustrates the trip distribution percentages and project related traffic under cumulative (2020) with SR-905 Phases 1A and 1B conditions which assumes only 11.46% of the project site is developed, and Figure 31 illustrates the trip distribution percentages and project related traffic for Phases 1-2 of the project under 2030 conditions. Since the internal roadways do not currently exist, the project traffic volumes illustrated in Figures 28 and 29 for Phase 1, and Phases 1-2 under existing conditions are also representative of the existing plus project traffic volume conditions. The cumulative (2020) with SR-905 (Phases 1A & 1B) traffic volumes are illustrated in Figure 32. Figure 33 illustrates the 2030 plus Phases 1-2 project daily and peak hour traffic volumes on the internal roadway network. (Buildout peak hour traffic volumes were taken from the draft EIR for the SR-11).

INTERNAL LEVEL OF SERVICE ANALYSIS

Internal – Roadway Segments

In order to provide access to the project site, the project applicant will be required to widen the off-site segment of Siempre Viva Road between the CHP facility access east of Enrico Fermi Drive and Airway Place on the south side of the roadway to provide one (1) eastbound travel lane with the appropriate transitions such that the improved facility can accommodate traffic in both directions of travel.

Although the project site can be provided additional access via the segment of Via De La Amistad west of Hawano Drive, this additional access is not required immediately and was thus not included in the analysis until buildout (2030) conditions.

In addition, to improving the off-site segment of Siempre Viva Road between the CHP facility east of Enrico Fermi Drive and Airway Place, the project applicant will be required to construct on-site improvements to the County circulation element roadways of Airway Road between Airway Place and Alta Road, Siempre Viva Road between Airway Place and Alta Road, Alta Road between Airway Road and Via De La Amistad, and Via De La Amistad between the western project boundary and Alta Road. In order to facilitate internal circulation within the project site, the project applicant will also be required to construct/improve the internal non circulation element roadways of Airway Place between Airway Road and Siempre Viva Road, Hawano Drive North, and Hawano Drive South.

The *Public Facility Element* for the County of San Diego also requires that all on-site County Circulation Element roads operate at Level of Service C or better. (A copy of excerpts from the County's *Public Facility Element* can be found in Appendix A.)

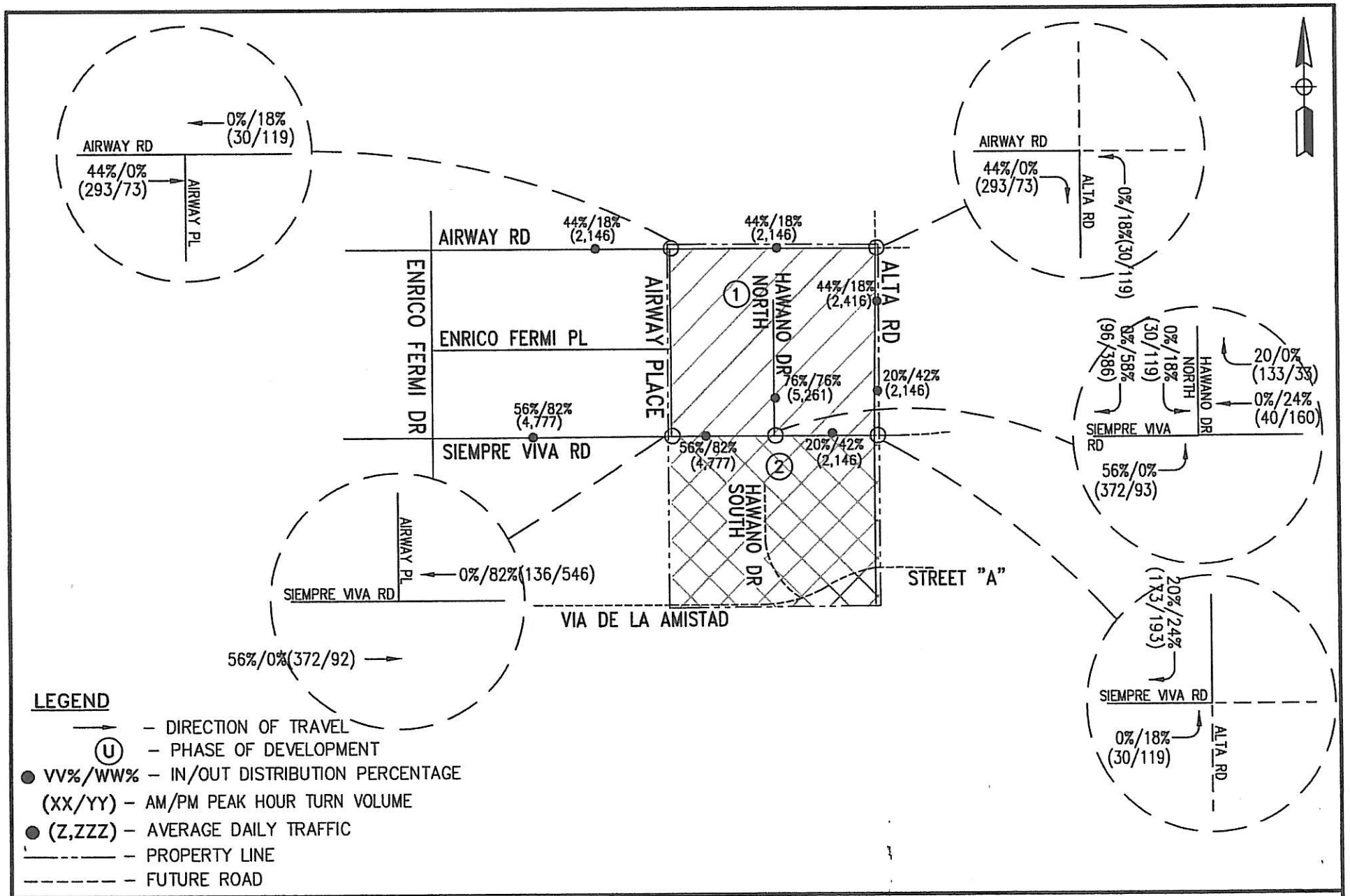

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FIGURE 28

INTERNAL TRIP DISTRIBUTION & PROJECT RELATED TRAFFIC FOR PHASE 1 (EXISTING CONDITIONS)

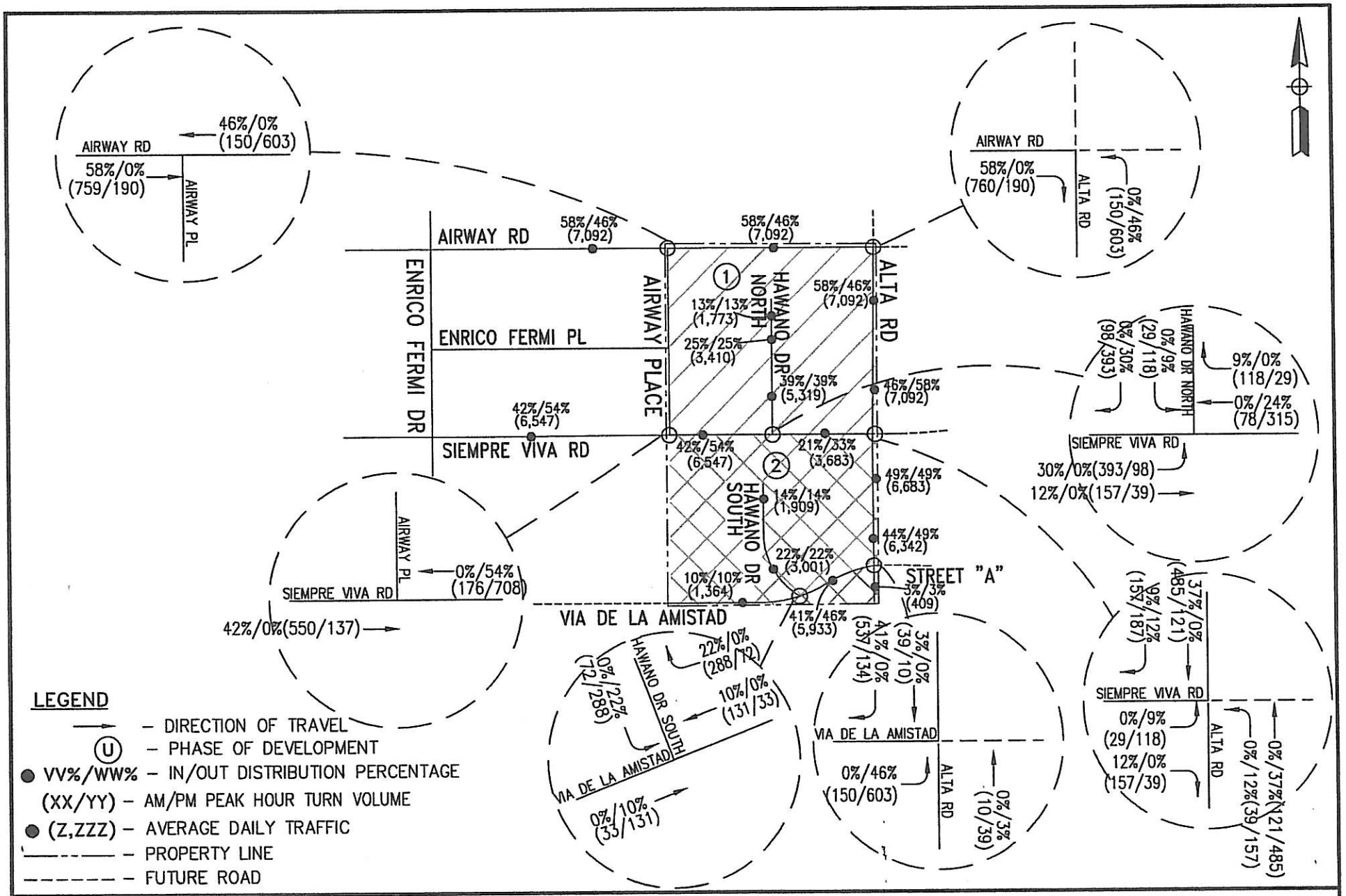

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FIGURE 29

INTERNAL TRIP DISTRIBUTION & PROJECT RELATED TRAFFIC FOR PHASES 1-2 (EXISTING CONDITIONS)

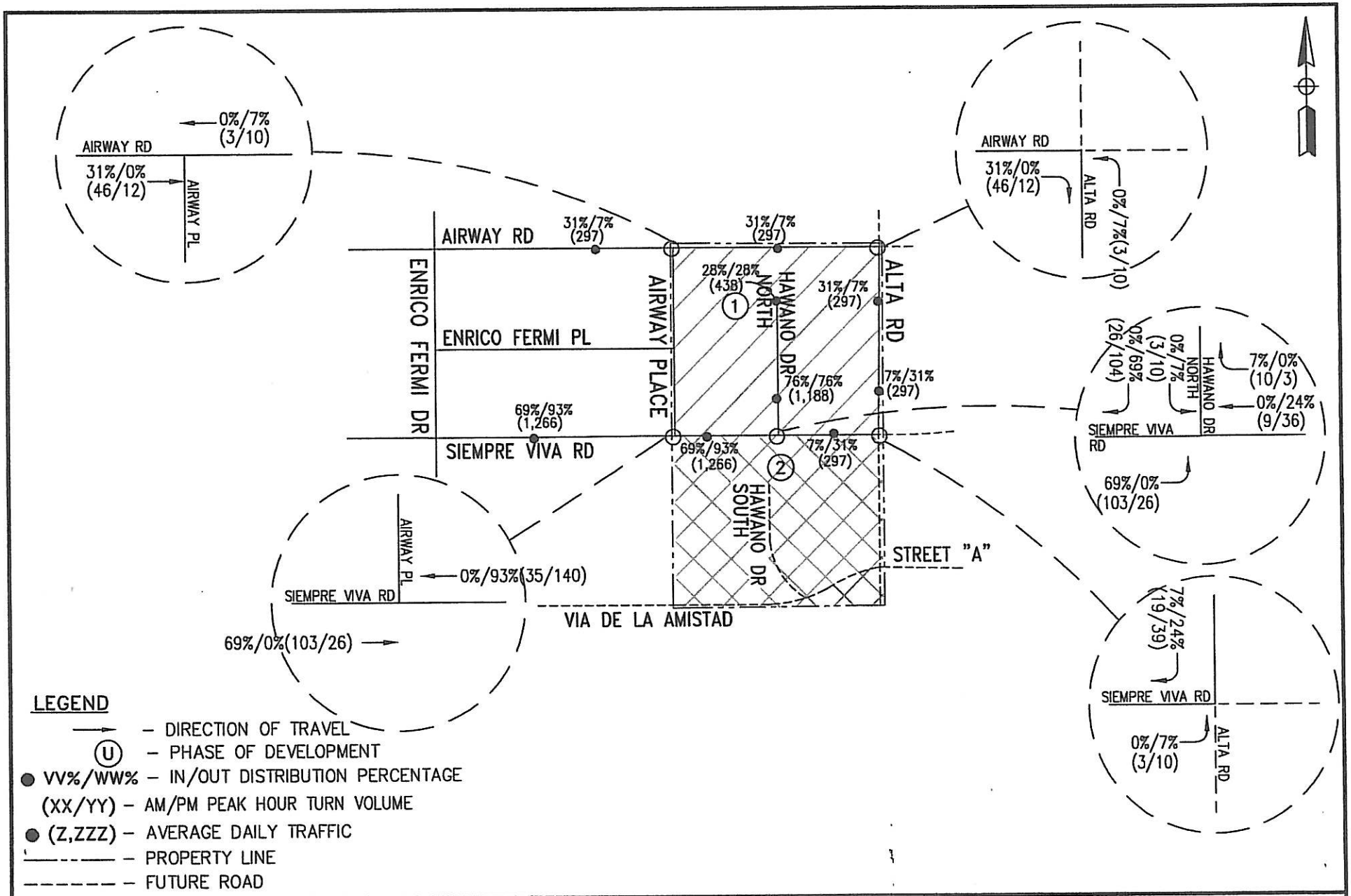

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FIGURE 30

INTERNAL TRIP DISTRIBUTION & PROJECT RELATED TRAFFIC FOR CUMULATIVE (2020) CONDITIONS

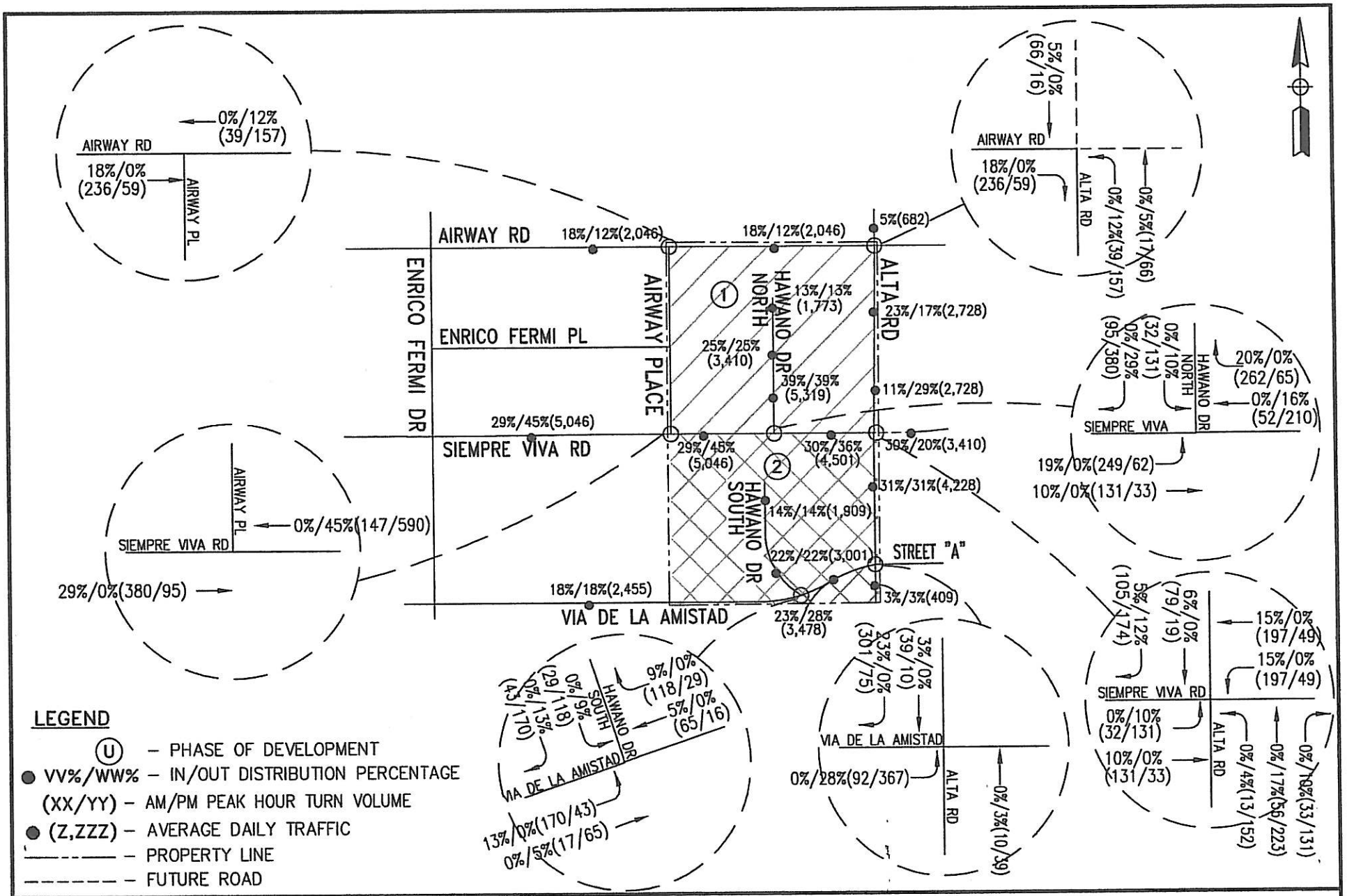

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FIGURE 31

INTERNAL TRIP DISTRIBUTION & PROJECT RELATED TRAFFIC FOR PHASES 1-2 (BUILDOUT CONDITIONS) YEAR 2030

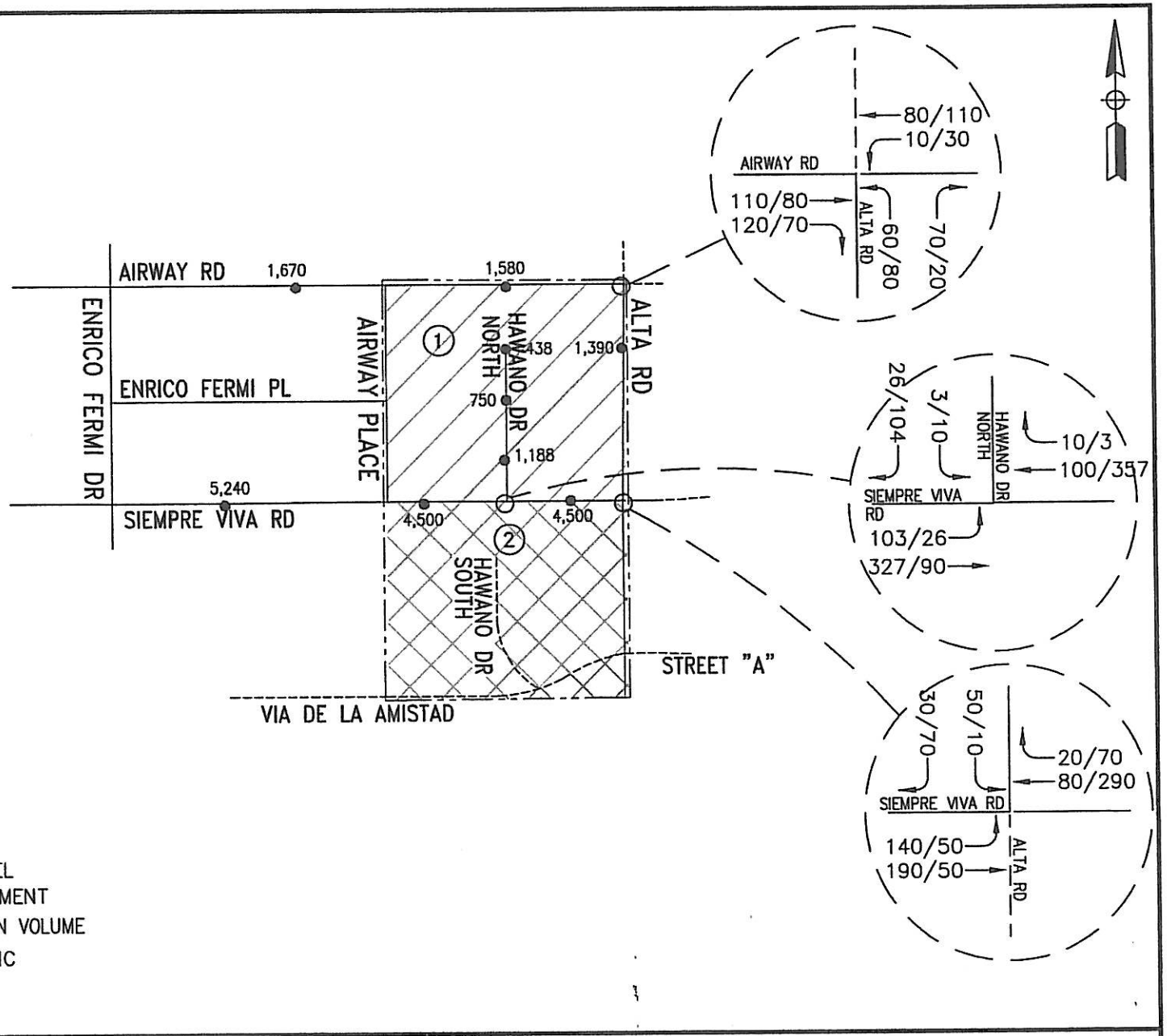

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FIGURE 32

INTERNAL CUMULATIVE (2020) W/SR-905 [PHASES 1A & 1B] TRAFFIC VOLUMES

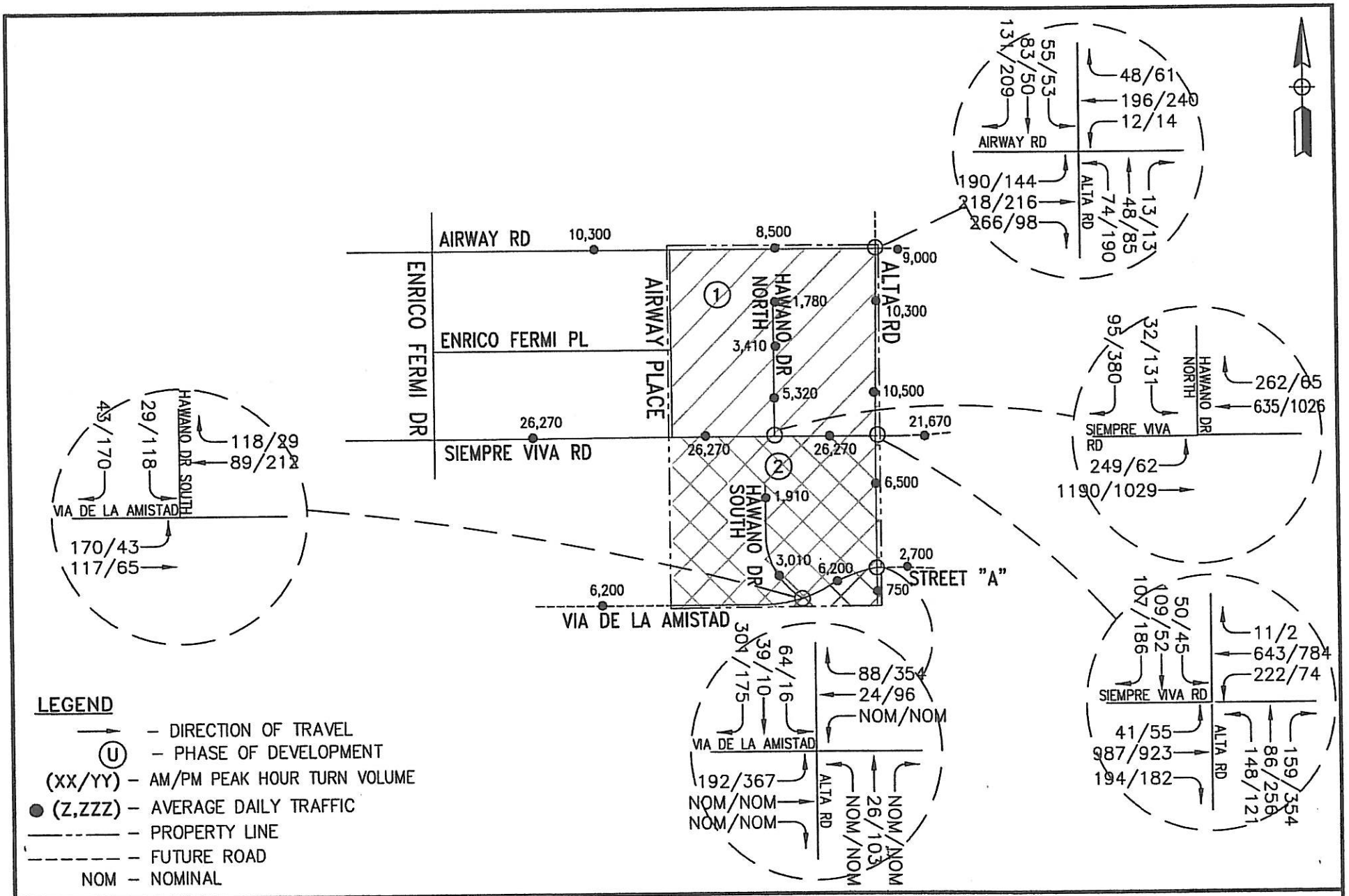

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FIGURE 33

INTERNAL 2030 + PROJECT (PHASES 1-2) TRAFFIC VOLUMES

Table 26 provides the roadway improvements required to facilitate the project's access under existing plus each phase of development, cumulative with SR-905 (Phases 1A & 1B) conditions, and 2030 conditions in order to maintain an acceptable LOS at all on-site circulation element roads. Figures 34 and 35 illustrates the recommended roadway classification for the internal roadway network for existing plus Phase 1 and existing plus Phases 1-2 conditions, respectively. Figure 36 illustrates the recommended roadway classifications for the internal roadway network under cumulative (2020) with SR-905 (Phases 1A & 1B) conditions which assumes only 11.46% of the project site is developed. Figure 37 illustrates the recommended roadway classifications for the internal roadway network under buildout (Year 2030) conditions. Per the Subdivision Ordinance and the East Otay Mesa Specific Plan, the project is required to build all on-site circulation element roads in which they have frontage on both sides out to their full/ultimate improved width. Thus, the segment of Siempre Viva Road between Airway Road and Alta Road along the project frontage will be required to be built out to its full/ultimate classification with Phase 2 of the proposed project. Table 26 and Figures 34-37 reflect this condition.

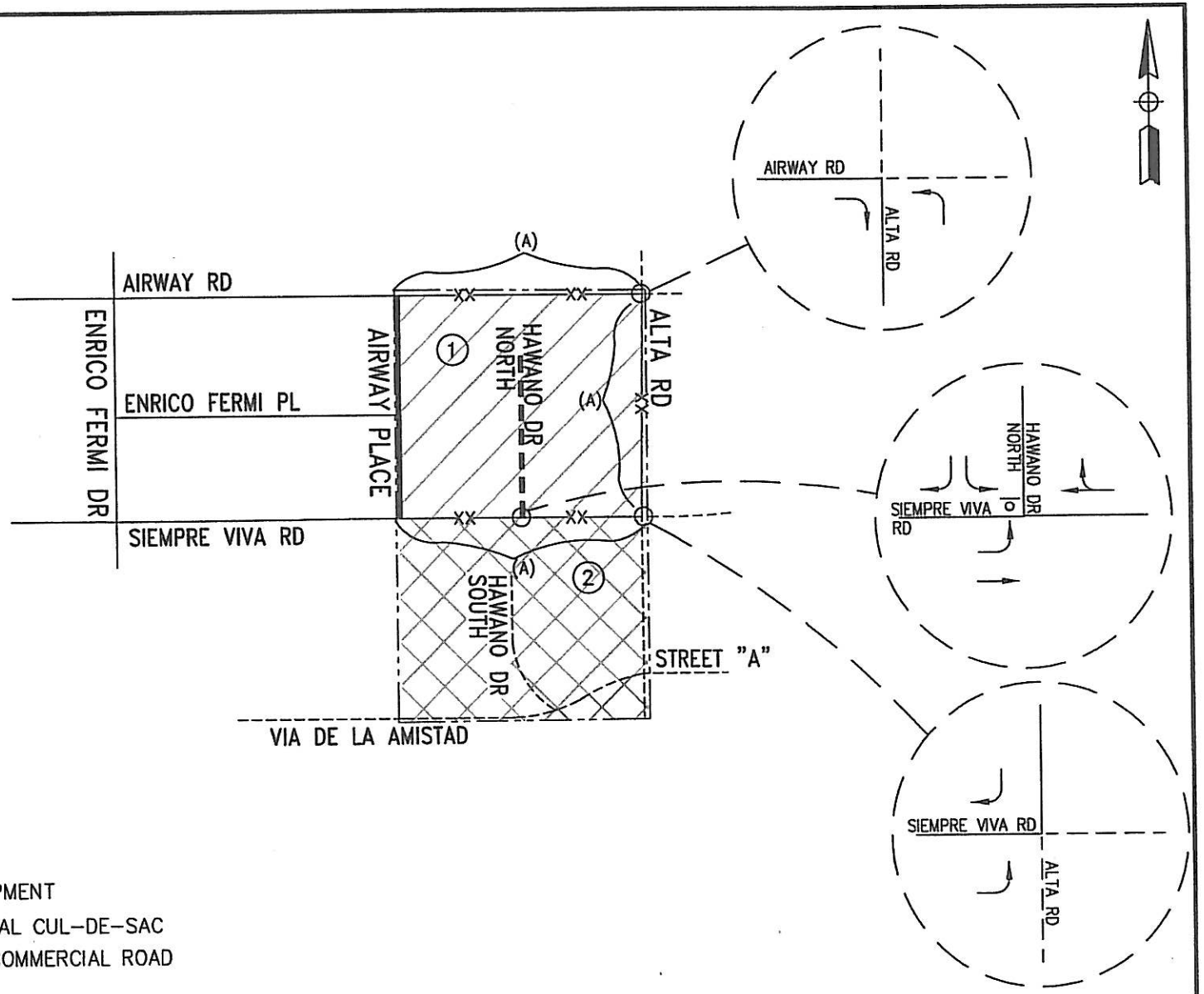
It should be noted that the segment of Airway Road between Airway Place and Alta Road, Siempre Viva Road between Airway Place and Alta Road, and Alta Road between Airway Road and Siempre Viva Road are classified as bike routes with class two bike lanes. Since no parking is provided along these roadways, no additional right-of-way is required to accommodate the bike-lanes.

Table 26 – Summary of Internal/On-Site & Project Access Roadway Segment Improvements

Roadway Segment	Existing Plus Project Conditions		Cumulative (2020) w/ SR-905 1A&1B (a)	Ultimate Classification Per EOMSP
	Phase 1	Phases 1-2		
Airway Road				
Airway Pl to Alta Rd	LC (b)	LC (b)	LC (b)	4M (b)
Siempre Viva Road				
Airway Pl to Hawano Dr North	LC (b)	4M (c)	LC (b)	4M (c)
Hawano Dr North to Alta Rd	LC (b)	4M (c)	LC (b)	4M (c)
Via De La Amistad				
W Project Boundary to Hawano Dr South	N/A	2-I/C	N/A	2-I/C
Hawano Dr South to Alta Rd	N/A	2-I/C	N/A	2-I/C
Airway Place				
Airway Rd to Enrico Fermi Pl	2-I/C	2-I/C	2-I/C	Non CE-2-I/C
Airway Pl to Siempre Viva Rd	2-I/C	2-I/C	2-I/C	Non CE-2-I/C
Hawano Drive North				
North of Siempre Viva Rd	2-I/C*	2-I/C*	2-I/C*	Non CE-2-I/C*
Hawano Drive South				
North of Via De La Amistad	N/A	2-I/C*	N/A	Non CE-2-I/C*
Alta Road				
Airway Rd to Siempre Viva Rd	LC (b)	LC (b)	LC (b)	4M (b)
Siempre Viva Rd to Via De La Amistad	N/A	2-I/C	N/A	2-I/C
South of Via De La Amistad	N/A	2-I/C*	N/A	2-I/C*

EOMSP = East Otay Mesa Specific Plan; 4M = 4-lane Major Road; LC = Light Collector;
2-I/C = 2-Lane Industrial Commercial Road; 2-I/C* - 2-Lane Industrial Commercial Collector Cul-De Sac;
Non CE = Non Circulation Element Road;
N/A = Not Applicable because this roadway segment will not be constructed until a later phase of development
(a) Cumulative (2020) analysis assumed Hawano was developed at 11.46%
(b) Applicant to dedicate and provide security for ½ width improvement of a Major Road
(c) Applicant to dedicate and provide security for full width improvement of a Major Road

Table 27 provides a summary of the levels of service at the internal roadways. As shown in Table 35, with the exception of Hawano Drive North and Hawano Drive South, all internal roadways will operate at an acceptable LOS C or better if designed based on the recommendations summarized in Table 26. The traffic volume on Hawano Drive North and Hawano Drive South will exceed the recommended capacity for an Industrial/Commercial Collector Cul-De-Sac. However, on October 7, 2011, the County of San Diego approved a design exception request to a road standard which supported the additional traffic on Hawano Drive North and Hawano Drive South. The approved design exception along with the supporting analysis is provided in Appendix M.



LEGEND

- TRAVEL LANE
- STOP SIGN
- (U) – PHASE OF DEVELOPMENT
- INDUSTRIAL/COMMERCIAL CUL-DE-SAC
- 2-LANE INDUSTRIAL/COMMERCIAL ROAD
- LIGHT COLLECTOR
- PROPERTY LINE
- FUTURE ROAD

(A) – APPLICANT TO DEDICATE & PROVIDE SECURITY FOR 1/2 WIDTH OF A MAJOR ROAD

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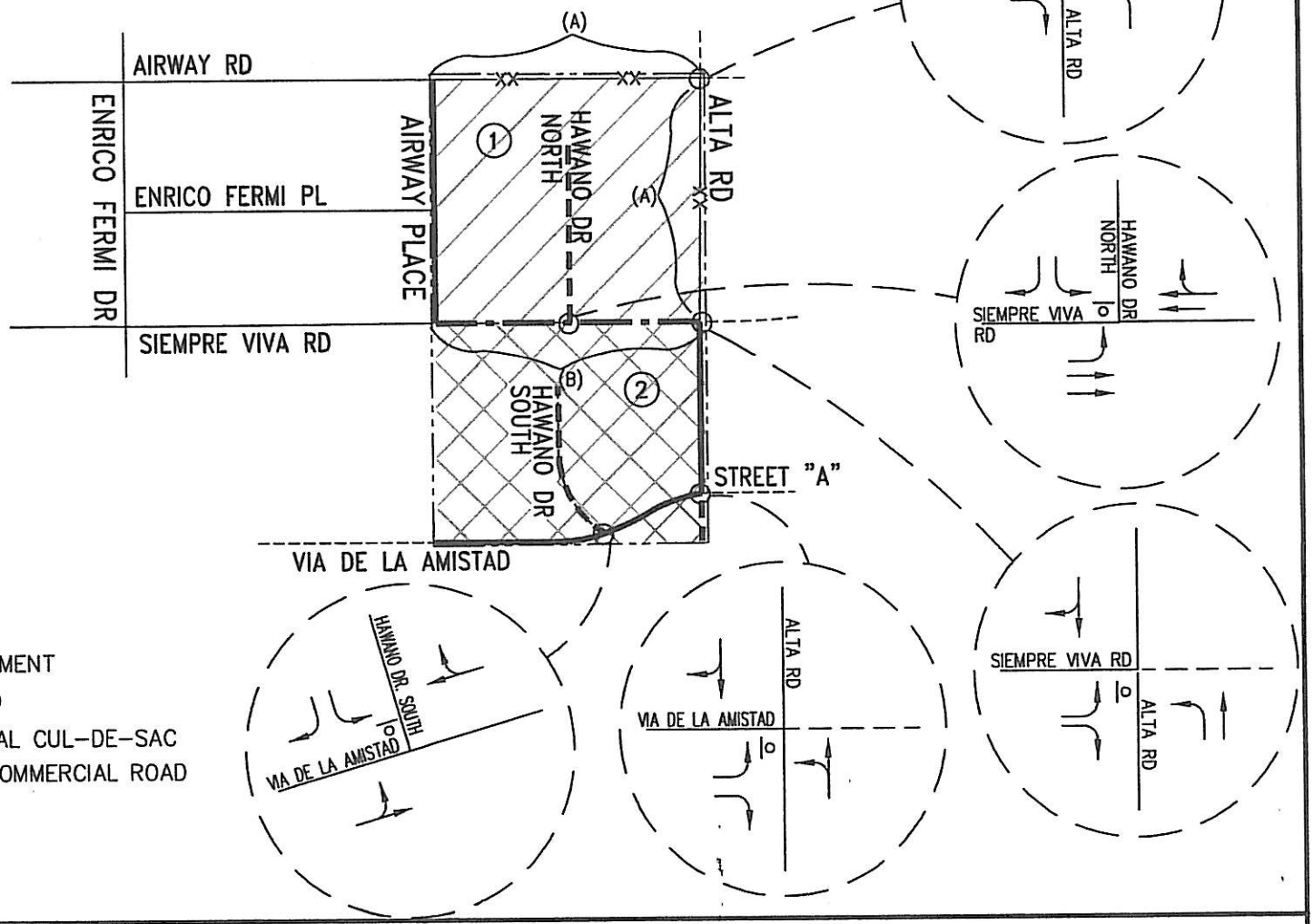
FIGURE 34

EXISTING + PHASE 1 INTERNAL CIRCULATION CONDITIONS

(A) – APPLICANT TO DEDICATE & PROVIDE SECURITY FOR 1/2 WIDTH OF A MAJOR ROAD

(B) – APPLICANT TO DEDICATE & PROVIDE SECURITY FOR FULL WIDTH IMPROVEMENT OF A MAJOR ROAD



LEGEND

- TRAVEL LANE
- STOP SIGN
- (U) – PHASE OF DEVELOPMENT
- 4– LANE MAJOR ROAD
- INDUSTRIAL/COMMERCIAL CUL–DE–SAC
- 2–LANE INDUSTRIAL/COMMERCIAL ROAD
- LIGHT COLLECTOR
- PROPERTY LINE
- FUTURE ROAD
- TOWN COLLECTOR

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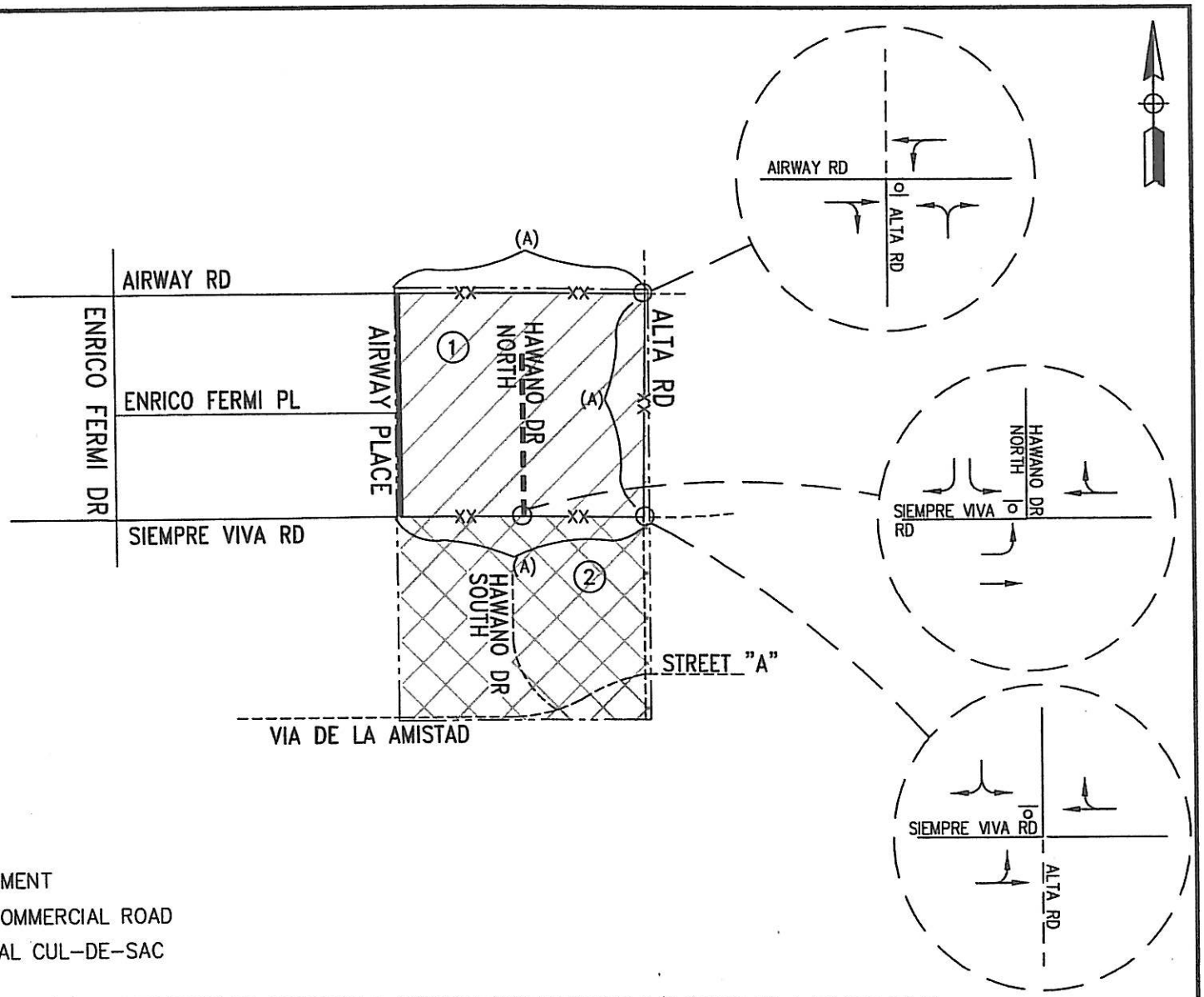
FIGURE 35

EXISTING + PHASES 1–2 INTERNAL CIRCULATION CONDITIONS



LEGEND

- TRAVEL LANE
- STOP SIGN
- (U) PHASE OF DEVELOPMENT
- 2-LANE INDUSTRIAL/COMMERCIAL ROAD
- INDUSTRIAL/COMMERCIAL CUL-DE-SAC
- LIGHT COLLECTOR
- PROPERTY LINE
- FUTURE ROAD

(A) – APPLICANT TO DEDICATE & PROVIDE SECURITY FOR 1/2 WIDTH OF A MAJOR ROAD

NOTE: ASSUMES HAWANO IS DEVELOPED AT 11.46%

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FIGURE 36

CUMULATIVE (2020) WITH SR-905 [PHASES 1A & 1B]

INTERNAL CIRCULATION CONDITIONS

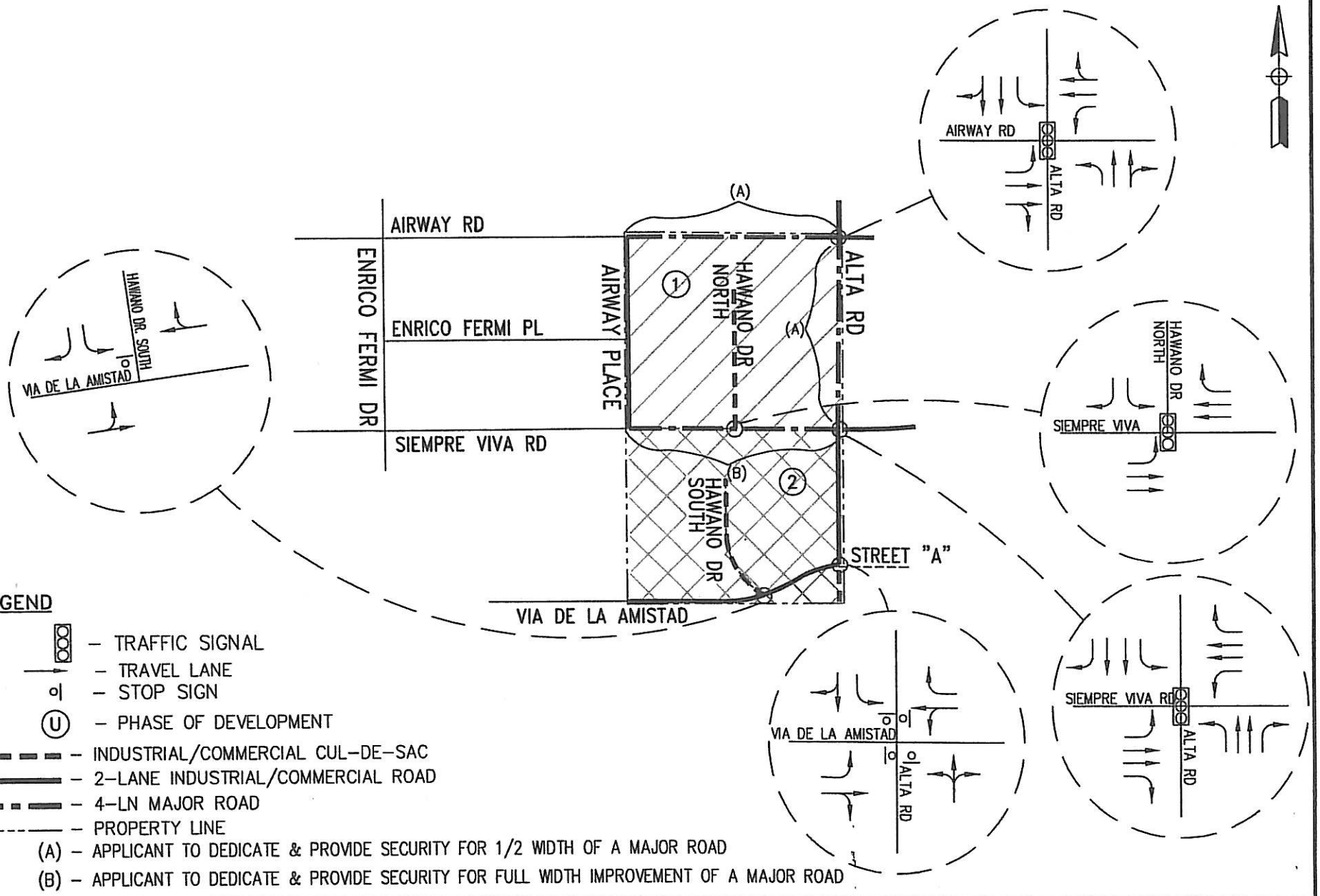

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FIGURE 37

BUILDOUT YEAR (2030) INTERNAL CIRCULATION CONDITIONS

Table 27 – Internal/On-Site & Project Access Roadway Segment Daily LOS Summary				
Roadway Segment	Recommended Classification	Capacity (LOS E)	ADT	LOS
Existing + Project Phase 1				
Airway Road Airway Pl to Alta Rd	Light Collector (c)	16,200	2,146	B
Siempre Viva Road Airway Pl to Hawano Dr North Hawano Dr North to Alta Rd	Light Collector (c) Light Collector (c)	16,200 16,200	4,777 2,146	C B
Hawano Drive North North of Siempre Viva Road	Industrial/Commercial Collector Cul-De Sac	1,000 (a)	**5,261**	>C
Alta Road Airway Rd to Siempre Viva Rd	Light Collector (c)	16,200	2,146	B
Existing + Project Phases 1-2				
Airway Road Airway Pl to Alta Rd	Light Collector	16,200	7,092	C
Siempre Viva Road Airway Pl to Hawano Dr North Hawano Dr North to Alta Rd	4-Lane Major (d) 4-Lane Major (d)	37,000 37,000	6,547 3,683	A A
Via De La Amistad W Project Boundary to Hawano Dr South Hawano Dr South to Alta Rd	2-Lane Industrial/Commercial Road 2-Lane Industrial/Commercial Road	16,200 16,200	1,364 5,933	A C
Hawano Drive North North of Siempre Viva Road	Industrial/Commercial Collector Cul-De Sac	1,000 (a)	**5,319**	>C
Hawano Drive South North of Via De La Amistad	Industrial/Commercial Collector Cul-De Sac	1,000 (a)	**3,001**	>C
Alta Road Airway Rd to Siempre Viva Rd Siempre Viva Rd to Via De La Amistad South of Via De La Amistad	Light Collector (c) 2-Lane Industrial/Commercial Road Industrial/Commercial Collector Cul-De Sac	16,200 16,200 1,000 (a)	7,092 6,683 409	C C <C
Cumulative (2020) w/SR-905 Phases 1A & 1B (b)				
Airway Road Airway Pl to Alta Rd	Light Collector (c)	16,200	1,580	A
Siempre Viva Road Airway Pl to Hawano Dr North Hawano Dr North to Alta Rd	Light Collector (c) Light Collector (c)	16,200 16,200	4,500 4,500	C C
Hawano Drive North North of Siempre Viva Road	Industrial/Commercial Collector Cul-De Sac	1,000 (a)	**1,188**	>C
Alta Road Airway Rd to Siempre Viva Rd	Light Collector (c)	16,200	1,390	A

County = Capacity of County segments is based on the upper limits of LOS E per the County of San Diego;
ADT= Average Daily Traffic; LOS= Level of Service; <C Operates at better than LOS C; > C Volume exceeds recommended Capacity for LOS C
(a) Levels of Service are typically not applied to cul-de sac roads, The capacity shown here is the recommended capacity to maintain LOS C
(b) Cumulative (2020) analysis assumed Hawano was developed at 11.46%
(c) Applicant to dedicate and provide security for ½ width improvement of a Major Road
(d) Applicant to dedicate and provide security for full width improvement of a Major Road

Table 27 (Continued) – Internal/On-Site & Project Access Roadway Segment Daily LOS Summary				
Roadway Segment	Recommended Classification	Capacity (LOS E)	ADT	LOS
2030 + Project Build Out (Phases 1-2)				
Airway Road				
Airway Pl to Alta Rd	4-Lane Major (c)	37,000	8,500	A
Siempre Viva Road				
Airway Pl to Hawano Dr North	4-Lane Major (d)	37,000	26,270	C
Hawano Dr North to Alta Rd	4-Lane Major (d)	37,000	26,270	C
Via De La Amistad				
W Project Boundary to Hawano Dr South	2-Lane Industrial/Commercial Road	16,200	6,200	C
Hawano Dr South to Alta Rd	2-Lane Industrial/Commercial Road	16,200	6,200	C
Hawano Drive North				
North of Siempre Viva Rd	Industrial/Commercial Collector Cul-De Sac	1,000 (a)	**5,320**	>C
Hawano Drive South				
North of Via De La Amistad	Industrial/Commercial Collector Cul-De Sac	1,000 (a)	**3,010**	>C
Alta Road				
Airway Rd to Siempre Viva Rd	4-Lane Major (c)	37,000	10,500	A
Siempre Viva Rd to Via De La Amistad	2-Lane Industrial/Commercial Road	16,200	6,500	C
South of Via De La Amistad	Industrial/Commercial Collector Cul-De Sac	1,000 (a)	750	<C

County = Capacity of County segments is based on the upper limits of LOS E per the County of San Diego;
ADT= Average Daily Traffic; LOS= Level of Service; <C Operates at better than LOS C; > C Volume exceeds recommended Capacity for LOS C
(a) Levels of Service are typically not applied to cul-de sac roads, The capacity shown here is the recommended capacity to maintain LOS C
(b) Cumulative (2020) analysis assumed Hawano was developed at 11.46%
(c) Applicant to dedicate and provide security for ½ width improvement of a Major Road
(d) Applicant to dedicate and provide security for full width improvement of a Major Road

Internal – Intersections

The internal intersections were analyzed under existing plus project Phase 1 conditions, existing plus project Phases 1-2 conditions, cumulative (2020) with SR-905 (Phases 1A & 1B) conditions, and buildout (2030) plus project Phases 1-2 conditions to determine the required lane configurations and traffic control needed to provide acceptable levels of service. Figures 34 and 35 illustrate the recommended lane configurations and traffic control for the internal intersections under existing plus project Phase 1 and existing plus phases Phases 1-2 conditions, respectively. Figure 36 illustrates the recommended lane configurations and traffic control for the internal intersections under cumulative (2020) with SR-905 (Phases 1A & 1B) conditions which assumes only 11.46% of the project site is developed. And Figure 37 illustrates the recommended lane configurations and traffic control for the internal lane configurations under buildout (2030) plus project Phases 1-2 conditions. Table 28 provides a summary of the levels of service at the internal intersections. Appendix H provides the Synchro analysis worksheets for the internal intersection analysis.

As shown in Table 28, the eastbound approach at the Siempre Viva Road/Alta Road intersection operates at LOS D during the PM peak hour under existing plus project Phases 1-2 conditions while the eastbound approach at the Via De La Amistad/Alta Road intersection operates at LOS D during the PM peak hour under buildout (2030) plus project Phases 1-2 conditions. All other internal intersections will operate at an acceptable LOS C or better under all conditions during both peak hours with the recommended lane configurations and traffic control illustrated in Figures 34-36.

It should be noted that the Siempre Viva Road/Hawano Drive North access will need to be signalized under buildout (2030) conditions. Details on the queuing and the eastbound left turn lane length requirements were summarized in a separate report and are provided in Appendix M.

Table 28 – Internal Intersection LOS Summary						
Intersection	Traffic Control	Critical Move	AM Peak		PM Peak	
			Delay	LOS	Delay	LOS
Existing + Project Phase 1						
Siempre Viva Rd (E-W) @ Hawano Dr North (N-S)	OWSC	EBL	7.9	A	8.6	A
		SB	13.3	B	12.8	B
Existing + Project Phases 1-2						
Siempre Viva Rd (E-W) @ Hawano Dr North (N-S)	OWSC	EBL	8.8	A	8.3	A
		SB	15.2	C	15.0	B
Siempre Viva Rd (E-W) @ Alta Rd (N-S)	OWSC	EB	16.3	C	34.8	D
		NBL	9.2	A	8.4	A
Via De La Amistad (E-W) @ Alta Rd (N-S)	OWSC	EB	12.4	B	20.7	C
Via De La Amistad (E-W) @ Hawano Dr South (N-S)	OWSC	SB	11.2	B	12.8	B
Cumulative (2020) w/SR-905 Phases 1A & 1B (a)						
Airway Rd (E-W) @ Alta Rd (N-S)	OWSC	NB	10.7	B	11.0	B
Siempre Viva Rd (E-W) @ Hawano Dr North (N-S)	OWSC	EBL	7.6	A	8.2	A
		SB	9.5	A	11.7	B
Siempre Viva Rd (E-W) @ Alta Rd (N-S)	OWSC	SB	13.2	B	11.2	B
Buildout (2030) + Project Phases 1-2						
Airway Rd (E-W) @ Alta Rd (N-S)	Signalized	Int.	25.0	C	19.1	B
Siempre Viva Rd (E-W) @ Hawano Dr North (N-S)	Signalized	Int.	7.8	A	10.8	B
Siempre Viva Rd (E-W) @ Alta Rd (N-S)	Signalized	Int.	36.3	D	21.0	C
Via De La Amistad (E-W) @ Alta Rd (N-S)	AWSC	EB	11.8	B	28.2	D
		WB	8.2	A	15.0	B
		NB	9.5	A	13.1	B
		SB	11.4	B	12.2	B
		Int.	10.9	B	18.7	C
Via De La Amistad (E-W) @ Hawano Dr South (N-S)	OWSC	SB	11.8	B	11.8	B

Delay is measured in seconds/vehicle; LOS=Level of Service; sig=signalized
OWSC=One Way Stop Controlled; Int. = Intersection; AWSC=All Way Stop Controlled; Int. = Intersection;
E-W = East-West Roadway; N-S = North-South Roadway
EB = Eastbound Approach; WB = Westbound Approach; NB = Northbound Approach; SB = Southbound Approach;
EBL = Eastbound Left; NBL = Northbound Left
(a) Cumulative (2020) analysis assumed Hawano was developed at 11.46%

TRANSPORTATION IMPACT FEE (TIF)

The County of San Diego has developed an overall programmatic solution that addresses existing and projected future road deficiencies in the unincorporated portions 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 build-out (year 2030) development conditions on the existing circulation element roadway 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 build out 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.

Full build out the project (Phases 1-2) is estimated to generate 13,639 average daily trips. 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. The potential growth represented by the proposed project was included in the growth projections upon which the TIF program is based. Therefore, compliance with the County TIF ordinance, which will be required at issuance of building permits, in combination with other components of the program described above, will mitigate potential cumulative traffic impacts to County Circulation Element Roadways to less than significant. The TIF program provides a mechanism for developers to mitigate their cumulative impacts by paying a specified fee for the use that is being proposed.

The County Board of Supervisors adopted the County of San Diego Traffic Impact Fee (TIF) program in April 2005. The TIF Ordinance Update was adopted by the Board of Supervisors on February 27, 2008. The TIF Program Update 2008 has revised the Otay Fee Schedule for non-residential use. It should be noted that the actual traffic impact fees are subject to change as the TIF ordinance is updated annually as the fees are adjusted to reflect the engineering cost index. Compliance with the County TIF ordinance will mitigate any cumulative impact that the project has on the County roadway facilities located within the Otay Sub region and the South TIF region. The project proposes to comply with the County's TIF to mitigate the project's local and regional cumulative impacts within the unincorporated area.

DIRECT IMPACTS

Phase 1 Direct Impacts – Roadway Segments

As shown in Section IV, Phase 1 of the proposed project exceeds the significance guidelines on the following roadway segment under existing conditions plus Phase 1 of the proposed project:

- Otay Mesa Road (Old Otay Mesa Road) between Sanyo Avenue and Enrico Fermi Drive.

Phase 1 Roadway Segments Direct Impacts Recommended Mitigation Measures

Otay Mesa Road between Sanyo Avenue and Enrico Fermi Drive: Prior to recordation of final maps for Phase 1 the applicant shall widen the segment of Otay Mesa Road between Sanyo Avenue and Enrico Fermi Drive to provide a four (4) -lane facility with two (2) lanes in each direction. (See EIR Impact M-TR-1.)

See Figure 38 for the recommended mitigation measures of the direct impacts associated with Phase 1of the proposed project.

Phase 1 Direct Impacts – Intersections

As shown in Section IV, Phase 1 of the proposed project does not have a significant direct impact at any of the analyzed intersections under existing plus Phase 1 project conditions.

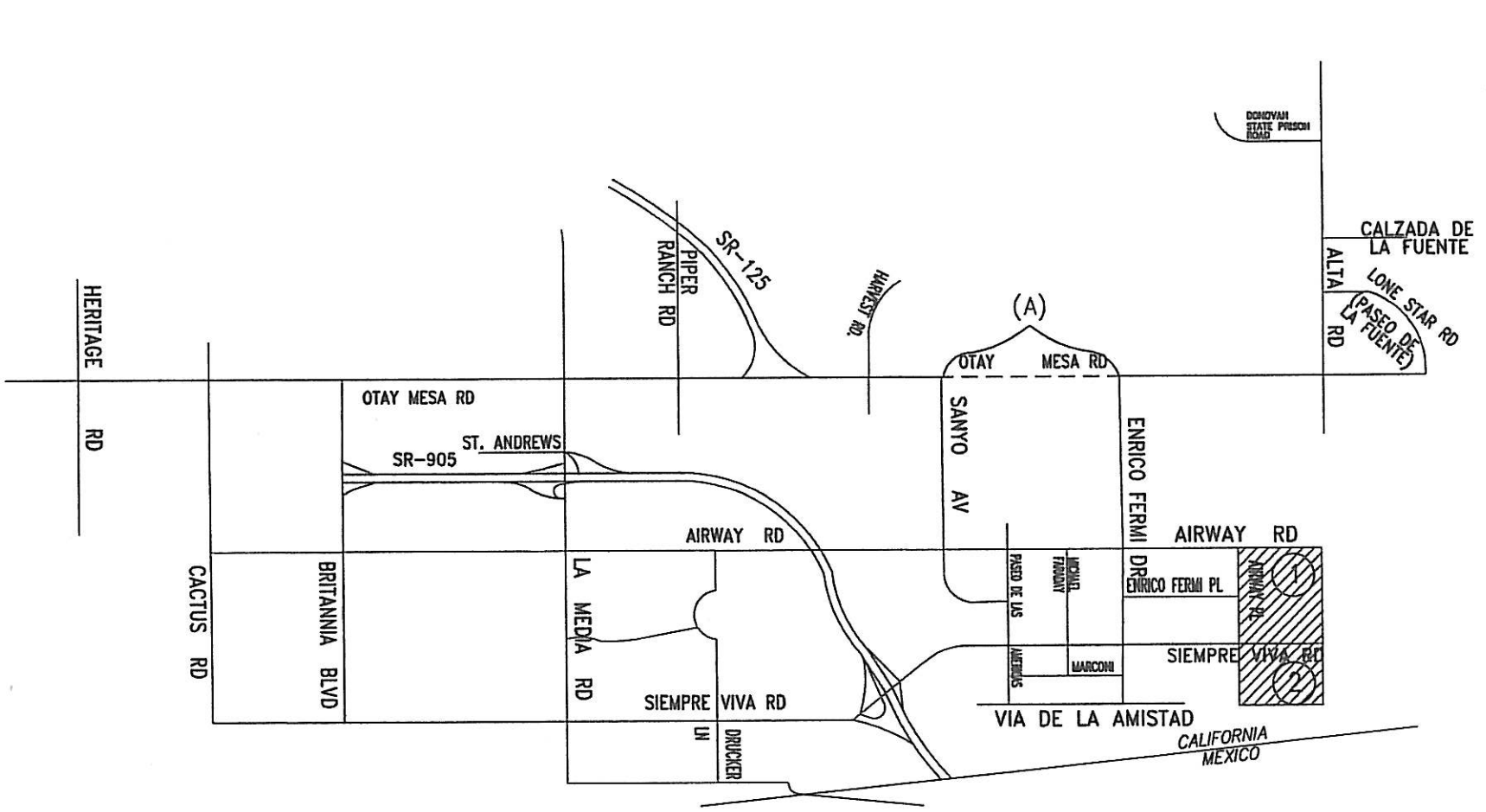
Phase 1 Construction Impacts

In order to provide access to the project site, the project applicant will be required to construct improvements to the following roadway segment:

- Siempre Viva Road between Enrico Fermi Drive and Airway Place.

Phase 1 Construction Impacts Recommended Improvements

Siempre Viva Road between Enrico Fermi Drive and Airway Place: Prior to recordation of final maps for Phase 1 the applicant shall widen the south side of the segment of Siempre Viva Road between the CHP facility access east of Enrico Fermi Drive to Airway Place to provide one (1) eastbound travel lane with the appropriate transitions such that the improved facility can accommodate one (1) travel lane in each direction. (See EIR Impact M-TR-3.)



LEGEND

(XX) – PHASE OF DEVELOPMENT

(A) - - - - - - - – IMPROVE TO A 4-LANE FACILITY

▨ – PROJECT SITE

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FIGURE 38

RECOMMENDED MITIGATION– EXISTING + PHASE 1

Phases 1-2 Direct Impacts – Roadway Segments

As shown in Section IV, Phases 1-2 of the proposed project exceeds the significance guidelines on the following roadway segments under existing conditions plus Phases 1-2 of the proposed project:

- Otay Mesa Road (Old Otay Mesa Road) between Sanyo Avenue and Enrico Fermi Drive.

Phases 1-2 Roadway Segments Direct Impacts Recommended Mitigation Measures

Otay Mesa Road between Sanyo Avenue and Enrico Fermi Drive: The proposed project's mitigation for the direct impacts under existing plus Phase 1 conditions to widen the segment of Otay Mesa Road between Sanyo Avenue and Enrico Fermi Drive to a provide a four (4)-lane facility with two (2) lanes in each direction will also mitigate the direct impacts under existing plus Phases 1-2 of the proposed project. (See EIR Impact M-TR-1.)

See Figure 39 for the recommended mitigation measures of the direct impacts associated with Phases 1-2 of the proposed project.

Phases 1-2 Direct Impacts – Intersections

As shown in Section IV, Phases 1-2 of the proposed project is part of a significant direct impact at the following intersection under existing conditions plus Phases 1-2 of the proposed project:

- Otay Mesa Road (Old Otay Mesa Road)/Enrico Fermi Drive.

Phases 1-2 Intersections Direct Impacts Recommended Mitigation Measures

Otay Mesa Road (Old Otay Mesa Road)/Enrico Fermi Drive: Prior to recordation of final maps for Phase 2, the applicant shall widen the Otay Mesa Road/Enrico Fermi Drive intersection and modify the existing traffic signal to provide the following lane configurations:

- One (1) eastbound through lane;
- One (1) eastbound right turn lane;
- One (1) westbound left turn lane;
- One (1) westbound through lane;
- One (1) northbound left turn lane; and
- One (1) northbound right turn lane. (See EIR Impact M-TR-2.)

See Figure 39 for the recommended mitigation measures of the direct impacts associated with Phases 1-2 of the proposed project.

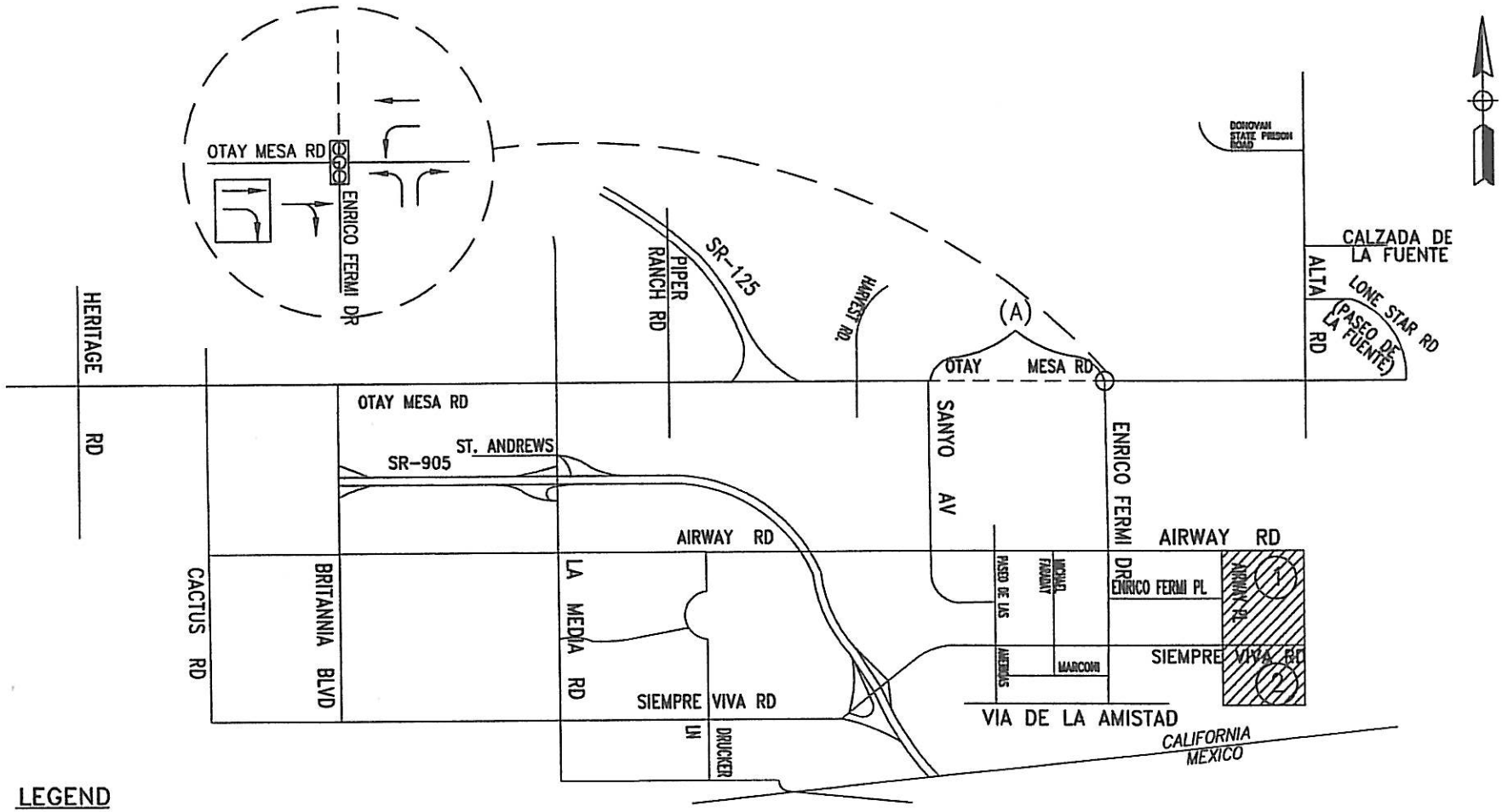
Phases 1-2 Construction Impacts

In order to provide access to the project site, the project applicant will be required to construct improvements to the following roadway segments:

- Siempre Viva Road between Enrico Fermi Drive and Airway Place.

Phases 1-2 Construction Impacts Recommended Improvements

Siempre Viva Road between Enrico Fermi Drive and Airway Place: The proposed improvements identified for the segment of Siempre Viva Road between Enrico Fermi Drive and Airway Place for the construction impacts for Phase 1 will also satisfy the construction needs for Phases 1-2 under existing plus project Phases 1-2 conditions. (See EIR Impact M-TR-3.)



LEGEND

- EXISTING TRAFFIC SIGNAL
- EXISTING TRAVEL LANE
- MITIGATED TRAVEL LANE
- (XX) PHASE OF DEVELOPMENT
- (A) ------- IMPROVE TO A 4-LANE FACILITY
- PROJECT SITE

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FIGURE 39

RECOMMENDED MITIGATION– EXISTING + PHASES 1–2

CUMULATIVE (2020) WITH SR-905 [PHASES 1A & 1B] IMPACTS

Roadway Segments - Cumulative (2020) w/SR-905 Impacts

As shown in Section V, the proposed project is part of a significant cumulative impact on the following roadway segments under cumulative (2020) with SR-905 [Phases 1A & 1B] conditions:

- Otay Mesa Road (Old Otay Mesa Rd) between Enrico Fermi Drive and Alta Road;
- Enrico Fermi Drive between Otay Mesa Road and Airway Road; and
- Alta Road between Lone Star Road (Paseo De La Fuente) and Otay Mesa Road.

Roadway Segments - Cumulative (2020) w/SR-905 Impacts Recommended Mitigation Measures

Otay Mesa Road between Enrico Fermi Drive and Alta Road: Prior to issuance of building permits for Phase 1 of the project, the applicant shall pay the County's TIF towards the improvement of Otay Mesa Road between Enrico Fermi Drive and Alta Road to a four (4)-lane facility with two (2) lanes in each direction. (See EIR Impact M-TR-4.)

Enrico Fermi Drive between Otay Mesa Road and Airway Road: Prior to issuance of building permits for Phase 1 of the project, the applicant shall pay the County's TIF towards the improvement of Enrico Fermi Drive between Otay Mesa Road and Alta Road to a four (4)-lane facility with two (2) lanes in each direction. (See EIR Impact M-TR-5.)

Alta Road between Lone Star Road (Paseo De La Fuente) and Otay Mesa Road: Prior to issuance of building permits for Phase 1 of the project, the applicant shall pay the County's TIF towards the improvement of Enrico Fermi Drive between Otay Mesa Road and Alta Road to a three (3) lane facility with the capacity equivalent to that of a Town Collector. (See EIR Impact M-TR-6.)

See Figure 40 for the recommended mitigation measures of the roadway segments for the cumulative (2020) with SR-905 [Phases 1A & 1B] impacts associated with the proposed project.

Intersections - Cumulative (2020) w/SR-905 Impacts

As shown in Section V, the proposed project is part of a significant cumulative impact at the following intersections under cumulative (2020) with SR-905 [Phases 1A & 1B] conditions:

- Otay Mesa Road/Michael Faraday Drive;
- Otay Mesa Road/Enrico Fermi Drive;
- Otay Mesa Road/Alta Road;
- Airway Road/Sanyo Avenue;
- Airway Road/Paseo De Las Americas; and
- Siempre Viva Road/Michael Faraday Drive.

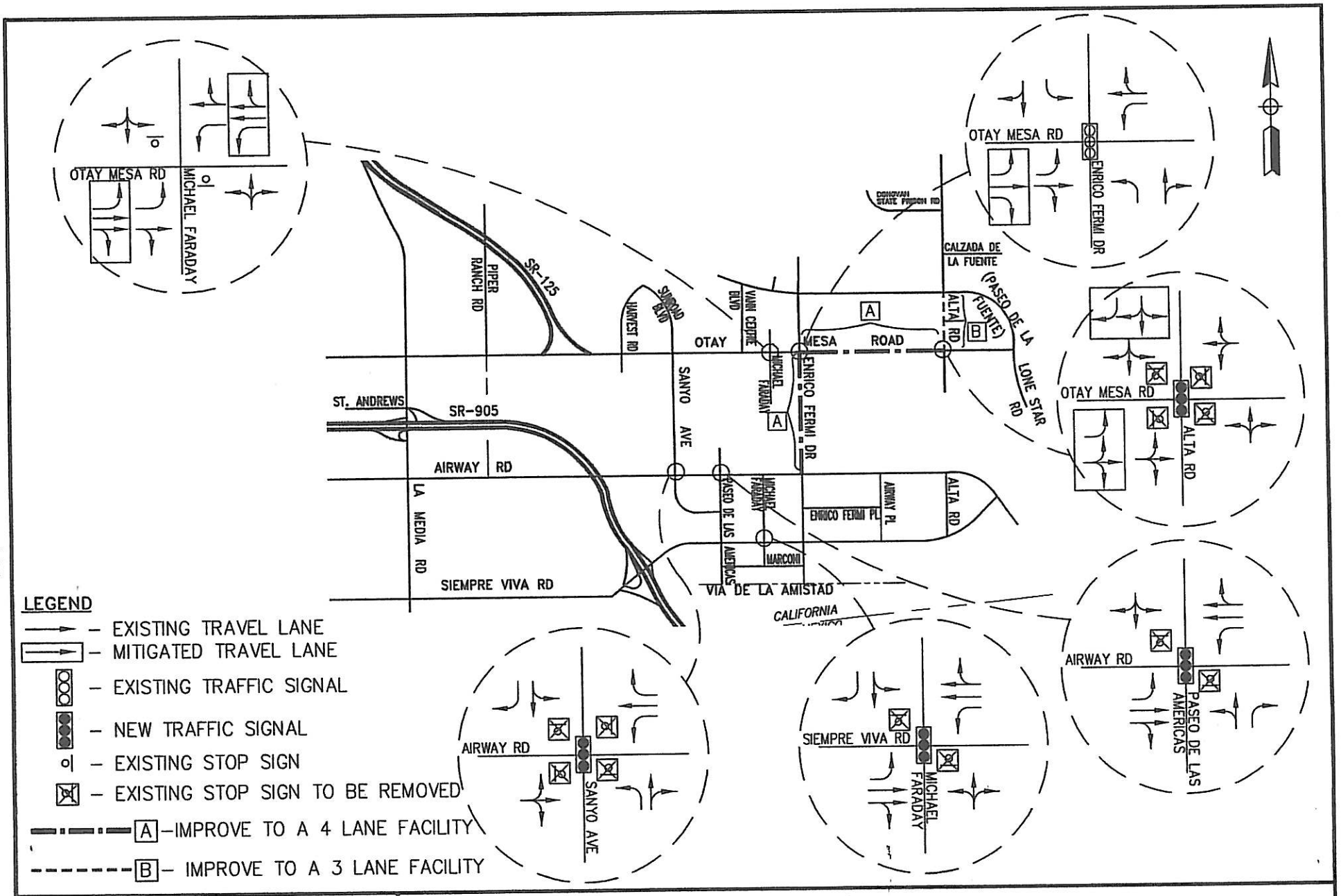

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FIGURE 40

CUMULATIVE (2020) W/ SR-905 [PHASES 1A &1B] RECOMMENDED MITIGATION

Intersections - Cumulative (2020) w/SR-905 Impacts Recommended Mitigation Measures.

Otay Mesa Road/Michael Faraday Drive: Prior to issuance of building permits for Phase 1 of the project, the applicant shall pay the County's TIF towards the widening of the Otay Mesa Road/Michael Faraday Drive intersection to provide the following lane configurations:

- One (1) eastbound left turn lane;
- One (1) eastbound through lane;
- One (1) eastbound shared through-right lane;
- One (1) westbound left turn lane;
- One (1) westbound through lane;
- One (1) westbound shared through-right lane;
- One (1) northbound shared left-through-right lane; and
- One (1) southbound shared left-through-right lane. (See EIR Impact M-TR-7.)

Otay Mesa Road (Old Otay Mesa Road)/Enrico Fermi Drive: Prior to issuance of building permits for Phase 1 of the project, the applicant shall pay the County's TIF towards the widening and signal modification of the Otay Mesa Road/Enrico Fermi Drive intersection to provide the following lane configurations:

- One (1) eastbound left turn lane;
- One (1) eastbound through lane;
- One (1) eastbound right turn lane;
- One (1) westbound left turn lane;
- One (1) westbound shared through-right lane;
- One (1) northbound left turn lane; and
- One (1) northbound shared through-right lane;
- One (1) southbound left turn lane; and
- One (1) southbound shared through-right lane. (See EIR Impact M-TR-8.)

Otay Mesa Road/Alta Road: Prior to issuance of building permits for Phase 1 of the project, the applicant shall pay the County's TIF towards the signalization and widening of the Otay Mesa Road/Alta Road intersection to provide the following lane configurations:

- One (1) eastbound left turn lane;
- One (1) eastbound shared left-through-right lane;
- One (1) westbound shared left-through-right lane;
- One (1) northbound shared left-through-right lane;
- One (1) southbound shared left-through-right lane; and
- One (1) southbound right turn lane. (See EIR Impact M-TR-9.)

Airway Road/Sanyo Avenue: Prior to recordation of final maps for Phase 1 of the project, the Project applicant shall to the satisfaction of the Director of Public Works and the City of San Diego improve or agree to improve and provide security for the Airway Road/Sanyo Avenue intersection. The required improvement is to signalize the intersection to provide the following existing lane configurations:

- One (1) eastbound shared left-through-right lane;
- One (1) westbound left turn lane;
- One (1) westbound through lane;
- One (1) westbound right turn lane;
- One (1) northbound left turn lane;
- One (1) northbound shared through-right turn lane;
- One (1) southbound left-through turn lane;
- One (1) southbound right turn lane (See EIR Impact M-TR-10.)

It should be noted that the improvements at this intersection would require appropriate permits from the City of San Diego and are subject to City approval and therefore may not be feasible. Thus a statement of overriding considerations may be required.

Airway Road/Paseo De Las Americas: Prior to issuance of building permits for Phase 1 of the project, the applicant shall pay the County's TIF towards the signalization of the Airway Road/Paseo De Las Americas intersection to provide the following existing lane configurations:

- One (1) eastbound left turn lane;
- One (1) eastbound through lane;
- One (1) eastbound shared through-right lane;
- One (1) westbound left turn lane;
- One (1) westbound through lane; and
- One (1) westbound shared through right lane;
- One (1) northbound shared left-through lane;
- One (1) northbound right turn lane; and
- One (1) southbound shared left-through-right lane. (See EIR Impact M-TR-11.)

Siempre Viva Road/Michael Faraday Drive: Prior to recordation of final maps for Phase 1 of the project, the Project applicant shall to the satisfaction of the Director of Public Works and the City of San Diego improve or agree to improve and provide security for the Siempre Viva Road/Michael Faraday Drive intersection. The required improvement is to signalize the intersection to provide the following existing lane configurations:

- One (1) eastbound left turn lane;
- One (1) eastbound through lane;
- One (1) eastbound shared through-right lane;
- One (1) westbound left turn lane;
- One (1) westbound through lane;
- One (1) westbound shared through-right lane;
- One (1) northbound shared left-through right turn lane;
- One (1) southbound shared left-through lane; and
- One (1) southbound right turn lane. (See EIR Impact M-TR-12.)

It should be noted that the improvements at this intersection would require appropriate permits from the City of San Diego and are subject to City approval and therefore may not be feasible. Thus a statement of overriding considerations may be required.

See Figure 40 for the recommended mitigation measures of the roadway segments for the cumulative (2020) with SR-905 [Phases 1A & 1B] impacts associated with the proposed project.

FUTURE IMPACTS

The project is consistent with the County's East Otay Mesa Specific Plan Amendment (SPA 10-001). As shown in Section VI, the project does not have an impact under 2030 conditions in the County or City of San Diego.

PROJECT ACCESS IMPROVEMENTS

The project applicant for Hawano Industrial Business Park Development will be responsible for constructing the off-site segment of Siempre Viva Road between Enrico Fermi Drive and Airway Place in order to provide access to the project site. As outlined in Section IV and later in Tables 29 and 30, the off-site segment of Siempre Viva Road will need to be constructed to the standards of a Light Collector Road prior to recordation of final maps for Phase 1.

In addition, the project applicant will be responsible for constructing the on-site circulation element roads of Airway Road, Siempre Viva Road, and Alta Road along their project's frontage and the non-circulation element roads within the project site in order to facilitate access within the project site. Tables 29 and 30 provide a summary of the required improvements for the project access and on-site roadway segments and a summary of the required improvements for the internal intersections.

Please refer to Section VII for more details on the specific lane configurations and traffic control that the project will be required to construct at the internal intersections including the Airway Road/Alta Road and Siempre Viva Road/Alta Road intersections.

MITIGATION SUMMARY LEVEL OF SERVICE

For convenience of the reader Tables 31 and 32 have been created to summarize the level of service for the roadway segments and intersections before and after the recommended mitigation measures.

Table 29 - Summary of Project Access Roadway Segment Improvement Requirements		
Roadway Segment	Scenario	Required Improvement
Airway Road		
Airway Pl to Alta Rd (b)	E+1	Prior to recordation of final maps for Phase 1, the applicant will construct roadway segment to provide 2 travel lanes with 1 lane in each direction
	E+2	Complete project improvements identified under E+1
	Cumulative	Complete project improvements identified under E+1
	C/L Ordinance	Not Applicable
Siempre Viva Road		
Enrico Fermi Dr to Airway Pl (a)	E+1 (See EIR Impact M-TR-3)	Prior to recordation of final maps for Phase 1, the applicant will widen the south side of the roadway between the CHP facility access east of Enrico Fermi Dr. to Airway Pl. to provide 1 EB lane with the appropriate transitions such that the improved facility can accommodate 1 travel lane in each direction.
	E+2 (See EIR Impact M-TR-3)	Complete project improvements identified under E+1
	Cumulative (See EIR Impact M-TR-13)	Complete project improvements identified under E+1
	C/L Ordinance	Not Applicable
Airway Pl to Hawano Dr North (c)	E+1	Prior to recordation of final maps for Phase 1, the applicant will construct roadway segment to provide 2 travel lanes with 1 lane in each direction.
	E+2	Prior to recordation of final maps for Phase 2, the applicant will construct the roadway segment to provide 4 travel lanes with 2 lanes in each direction and a raised median
	Cumulative	Complete project improvements identified under E+1
	C/L Ordinance	Prior to recordation of final maps for Phase 1, the applicant will construct the roadway segment to provide 4 travel lanes with 2 lanes in each direction and a raised median
Hawano Dr North to Alta Rd (c)	E+1	Prior to recordation of final maps for Phase 1, the applicant will construct roadway segment to provide 2 travel lanes with 1 lane in each direction.
	E+2	Prior to recordation of final maps for Phase 2, the applicant will construct the roadway segment to provide 4 travel lanes with 2 lanes in each direction and a raised median
	Cumulative	Complete project improvements identified under E+1
	C/L Ordinance	Prior to recordation of final maps for Phase 1, the applicant will construct the roadway segment to provide 4 travel lanes with 2 lanes in each direction and a raised median
Via De La Amistad		
West Project Boundary to Hawano Dr South	E+1	Not Applicable
	E+2	Prior to recordation of final maps for Phase 2, the applicant will construct the roadway segment to the standards of a 2-Lane Industrial/Commercial Road
	Cumulative	Complete project improvements identified under E+2
	C/L Ordinance	Prior to recordation of final maps for Phase 2, the applicant will construct the roadway segment to the standards of a 2-Lane Industrial/Commercial Road
Hawano Dr South to Alta Rd	E+1	Not Applicable
	E+2	Prior to recordation of final maps for Phase 2, the applicant will construct the roadway segment to the standards of a 2-Lane Industrial/Commercial Road
	Cumulative	Complete project improvements identified under E+2
	C/L Ordinance	Prior to recordation of final maps for Phase 2, the applicant will construct the roadway segment to the standards of a 2-Lane Industrial/Commercial Road
Hawano Drive North		
North of Siempre Viva Rd	E+1	Prior to the recordation of final maps for Phase 1, the applicant will construct the roadway segment to the standards of a 2-Lane Industrial/Commercial Cul-De-Sac
	E+2	Complete project improvements identified under E+1
	Cumulative	Complete project improvements identified under E+1
	C/L Ordinance	Not Applicable
Hawano Drive South		
North of Via De La Amistad	E+1	Not Applicable
	E+2	Prior to the recordation of final maps for Phase 2, the applicant will construct the roadway segment to the standards of a 2-Lane Industrial/Commercial Cul-De-Sac
	Cumulative	Not Applicable
	C/L Ordinance	Not Applicable

E+1 = Existing + Project Phase 1; E+ 2 = Existing + Project Phases1-2; N/A=Not Applicable; C/L Ordinance = Center-Line Ordinance Requirement;
(a) Roadway is located off-site
(b) Per C/L Ordinance applicant to dedicate and provide security for ½ width improvement of a Major Road under all conditions
(c) Under Phase 1 and Cumulative Conditions, per C/L Ordinance applicant to dedicate and provide security for ½ width improvement of a Major Road, Under Phase 2 and Buildout Conditions applicant to dedicate and provide security for full width improvement of a Major Road,

Table 29 (Continued) - Summary of Project Access Roadway Segment Improvement Requirements		
Roadway Segment	Scenario	Required Improvement
Airway Place		
Airway Rd to Enrico Fermi Pl	E+1	Prior to the recordation of final maps for Phase 1, the applicant will improve the roadway segment to the standards of a 2-Lane Industrial/Commercial Road
	E+2	Complete project improvements identified under E+1
	Cumulative	Complete project improvements identified under E+1
	C/L Ordinance	Prior to the recordation of final maps for Phase 1, the applicant will construct the roadway segment to the standards of a 2-Lane Industrial/Commercial Road
Enrico Fermi Pl to Siempre Viva Rd	E+1	Prior to the recordation of final maps for Phase 1, the applicant will improve the roadway segment to the standards of a 2-Lane Industrial/Commercial Road
	E+2	Complete project improvements identified under E+1
	Cumulative	Complete project improvements identified under E+1
	C/L Ordinance	Prior to the recordation of final maps for Phase 1, the applicant will improve the roadway segment to the standards of a 2-Lane Industrial/Commercial Road
Alta Road		
Airway Rd to Siempre Viva Rd (b)	E+1	Prior to recordation of final maps for Phase 1, the applicant will construct roadway segment to provide 2 travel lanes with 1 lane in each direction
	E+2	Complete project improvements identified under E+1
	Cumulative	Complete project improvements identified under E+1
	C/L Ordinance	Prior to recordation of final maps for Phase 1, the applicant will be required to construct the roadway segment to the ½ width of a Major Road.
Siempre Viva Rd to Via De La Amistad	E+1	Not Applicable
	E+2	Prior to recordation of final maps for Phase 2, the applicant will construct the roadway segment to the standards of a 2-Lane Industrial/Commercial Road
	Cumulative	Complete project improvements identified under E+2
	C/L Ordinance	Prior to recordation of final maps for Phase 1, the applicant will construct the roadway segment to the standards of a 2-Lane Industrial/Commercial Road
South of Via De La Amistad	E+1	Not Applicable
	E+2	Prior to recordation of final maps for Phase 2, the applicant will construct the roadway segment to the standards of an Industrial/Commercial Collector Cul-De Sac
	Cumulative	Complete project improvements identified under E+2
	C/L Ordinance	Prior to recordation of final maps for Phase 1, the applicant will construct the roadway segment to the standards of an Industrial/Commercial Collector Cul-De Sac

E+1 = Existing + Project Phase 1; E+ 2 = Existing + Project Phases1-2; N/A=Not Applicable; C/L Ordinance = Center-Line Ordinance Requirement;
(a) Roadway is located off-site
(b) Under Phase 1 and Cumulative Conditions, per C/L Ordinance applicant to dedicate and provide security for ½ width improvement of a Major Road, Under Phase 2 and Buildout Conditions applicant to dedicate and provide security for full width improvement of a Major Road,
(c) Per C/L Ordinance applicant to dedicate and provide security for ½ width improvement of a Major Road under all conditions

Table 30 - Summary of Internal Intersection Improvement Requirements		
Intersection	Scenario	Required Improvement
Airway Rd (E-W) @ Alta Rd (N-S)	Buildout	Dedicate and provide security to accommodate the following future improvements: signalization, 1 EBL, 1 EBT, 1 EB -TR, 1 WBL, 1 WBT, 1 WB -TR, 1 NBL, 1 NBT, 1 NB -TR, 1 SBL, 1 SBT, 1 SB -TR
Siempre Viva Rd (E-W) @ Hawano Dr North (N-S)	E+1	Prior to recordation of final maps for Phase 1, the applicant will install a stop sign on the southbound approach (north leg) of the intersection to provide OWSC and construct the following lane configurations: 1 EBL; 1 EBT; 1 WB-TR; 1 SBL; and 1 SBR
	E+2	Prior to recordation of final maps for Phase 2, maintain the OWSC and widen the intersection to provide the following lane configurations: 1 EBL, 2 EBT, 1 WBT, 1 WB-TR, 1 SBL, and 1 SBR
	Buildout	When warranted, the applicant shall construct a traffic signal and provide the following lane configurations: 1 EBL, 2 EBT, 2 WBT, 1 WBR, 1 SBL, and 1 SBR
Siempre Viva Rd (E-W) @ Alta Rd (N-S)	E+1	Not Applicable
	E+2	Prior to recordation of final maps for Phase 2, the applicant will install a stop sign on the eastbound approach (west leg) of the intersection to provide OWSC and construct the following lane configurations: 1 EB-LR; 1 NBL; 1 NBT; 1 SB-TR
	Buildout	Dedicate and provide security to accommodate the following future improvements: signalization, 1 EBL, 2 EBT, 1 EBR, 1 WBL, 2 WBT, 1 WBR, 1 NBL, 2 NBT, 1 NBR, 1 SBL, 2 SBT, and 1 SBR
Via De La Amistad (E-W) @ Alta Rd (N-S)	E+1	Not Applicable
	E+2	Prior to recordation of final maps for Phase 2, the applicant will install a stop sign on the eastbound approach (west leg) of the intersection to provide OWSC and construct the following lane configurations: 1 EBL; 1 EBR; 1 NB-LT; 1 SB-TR
	Buildout	When warranted, install AWSC and provide the following lane configurations: 1 EBL, 1 EB-TR, 1 WB-LT, 1 WBR, 1 NB-LTR, 1 SBL, 1 SB-TR
Via De La Amistad (E-W) @ Hawano Dr South(N-S)	E+1	Not Applicable
	E+2	Prior to recordation of final maps for Phase 2, the applicant will install a stop sign on the southbound approach (north leg) of the intersection to provide OWSC and construct the following lane configurations: 1 EB-LT; 1 WB-TR; 1 SBL; 1 SBR
	Buildout	Construct E+2

E+1 = Existing + Project Phase 1; E+ 2 = Existing + Project Phases 1-2; OWSC = One-Way Stop-Controlled; AWSC = All-Way Stop-Controlled
EBL = Eastbound Left; EBT = Eastbound Through; EBR = Eastbound Right; EB-LT = Eastbound Shared Left-Through;
EB-TR = Eastbound Shared Through Right; EB-LR = Eastbound Shared Left-Right; WBL = Westbound Left; WBT = Westbound Through;
WBR = Westbound Right; WB-LT = Westbound Shared Left-Through; WB-TR = Westbound Shared Through Right;
NBL = Northbound Left; NBT = Northbound Through; NBR = Northbound Right; NB-LT = Northbound Shared Left-Through;
NB-TR = Northbound Shared Through-Right; NB – LTR = Northbound Shared Left-Through-Right; SBL = Southbound Left;
SBT = Southbound Through; SBR = Southbound Right; SB-TR = Southbound Shared Through-Right;
N-S = North-South Roadway; E-W = East-West Roadway

Table 31 – Summary of Roadway Segments Mitigated Level of Service

Roadway Segment	Jurisdiction	Existing + Phase 1		Existing + Phases 1-2		Cumulative (2020) w/SR-905	
		LOS Before Mitigation	LOS After Mitigation	LOS Before Mitigation	LOS After Mitigation	LOS Before Mitigation	LOS After Mitigation
Interim SR-905 (Otay Mesa Rd)							
Heritage Rd to Cactus Rd	**City**/Caltrans	D	N/A	**E**	(a)	(b)	
Cactus Rd to Britannia Blvd	**City**/Caltrans	D	N/A	D	N/A	(b)	
Britannia Blvd to La Media Rd	**City**/Caltrans	A	N/A	B	N/A	(b)	
La Media Rd to Piper Ranch Rd	**City**/Caltrans	B	N/A	B	N/A	(b)	
Piper Ranch Rd to SR-125	**County**/City/Caltrans	A	N/A	A	N/A	(b)	
Otay Mesa Rd (Old Otay Mesa Rd)							
SR-125 to Harvest Rd	**County**/City/Caltrans	A	N/A	B	N/A	C	N/A
Harvest Rd to Sanyo Av	**County**/City/Caltrans	B	N/A	B	N/A	B	N/A
Sanyo Av to Vann Centre Blvd	**County**/City	**E**	B	**F**	B	D	N/A
Vann Centre Blvd to Michael Faraday Dr	County	**E**	B	**F**	B	D	N/A
Michael Faraday Dr to Enrico Fermi Dr	County	**E**	B	**F**	B	D	N/A
Enrico Fermi Dr to Alta Rd	County	C	N/A	C	N/A	**F**	B
Airway Road							
Sanyo Ave to Paseo de Las Americas	City	A	N/A	A	N/A	B	N/A
Paseo de Las Americas to Michael Faraday	**County**/City	A	N/A	A	N/A	A	N/A
Michael Faraday to Enrico Fermi Dr	**County**/City	B	N/A	B	N/A	C	N/A
Enrico Fermi Dr to Airway Pl	County	A	N/A	A	N/A	A	N/A
Siempre Viva Road							
Drucker Ln to SR-905	City	A	N/A	A	N/A	A	N/A
SR-905 to Paseo de Las Americas	City	A	N/A	A	N/A	D	N/A
Paseo de Las Americas to Michael Faraday	City	A	N/A	B	N/A	D	N/A
Michael Faraday to Enrico Fermi Dr	City	A	N/A	A	N/A	D	N/A
Enrico Fermi Dr to Airway Pl	County	C	N/A	D	N/A	C	N/A
SR-125							
North of Otay Mesa Rd	SBX	A	N/A	A	N/A	A	N/A
Existing SR-905							
South of Siempre Viva Rd	City/**Caltrans**	A	N/A	A	N/A	D	N/A
New State Route 905							
West of Britannia	Caltrans	Does Not Exist				D	N/A
Britannia to La Media	Caltrans	Does Not Exist				C	N/A
La Media to Siempre Viva Rd	Caltrans	Does Not Exist				C	N/A
Sanyo Avenue							
Otay Mesa Rd to Airway Rd	City	A	N/A	A	N/A	C	N/A
Enrico Fermi Drive							
Otay Mesa Rd to Airway Rd	County	C	N/A	D	N/A	**E**	B
Airway Rd to Enrico Fermi Pl	City	A	N/A	A	N/A	A	N/A
Enrico Fermi Pl to Siempre Viva Rd	City	A	N/A	A	N/A	A	N/A
Siempre Viva Rd to Via De La Amistad	City	A	N/A	A	N/A	A	N/A
Airway Place							
Airway Rd to Enrico Fermi Pl	County	A	N/A	A	N/A	A	N/A
Enrico Fermi Pl to Siempre Viva Rd	County	A	N/A	A	N/A	A	N/A
Alta Road							
Donovan State Prison Rd to Calzada De La Fuente	County	C	N/A	C	N/A	D	N/A
Calzada De La Fuente to Lone Star Rd (Paseo De La Fuente)	County	C	N/A	C	N/A	D	N/A
Lone Star Rd (Paseo De La Fuente) to Otay Mesa Rd	County	C	N/A	C	N/A	**E**	D

(a) Based on Peak Hour Operation, Mitigation is Not Required;
(b) The project adds less than the City/County threshold for segment analysis requirements.
Bold = Jurisdiction which capacity is based on; SBX = South Bay Expressway; Mit. = Mitigation; N/A = Not Applicable

Table 32 – Summary of Mitigated Intersection Level of Service

Intersection	Jurisdiction	Existing + Phase 1		Existing + Phases 1-2		Cum. w/ SR-905	
		Before Mitigation (AM/PM)	After Mitigation (AM/PM)	Before Mitigation (AM/PM)	After Mitigation (AM/PM)	Before Mitigation (AM/PM)	After Mitigation (AM/PM)
Otay Mesa Rd (E-W) @ Heritage Rd (N-S)	**City**/Caltrans	C/C	N/A	D/D	N/A	(a)	N/A
Otay Mesa Rd (E-W) @ Cactus Rd (N-S)	**City**/Caltrans	C/B	N/A	D/C	N/A	(a)	N/A
Otay Mesa Rd (E-W) @ Britannia Blvd (N-S)	**City**/Caltrans	B/B	N/A	D/B	N/A	(a)	N/A
Otay Mesa Rd (E-W) @ La Media Rd (N-S)	**City**/Caltrans	B/B	N/A	B/C	N/A	(a)	N/A
Otay Mesa Rd (E-W) @ Piper Ranch Rd (N-S)	**County**/City/Caltrans	A/B	N/A	A/B	N/A	(a)	N/A
Otay Mesa Rd (E-W) @ SR-125 SB (N-S)	**County**/City/SBX	A/A	N/A	B/A	N/A	B/A	N/A
Otay Mesa (E-W) @ SR-125 NB (N-S)	**County**/City/SBX	A/A	N/A	A/A	N/A	A/A	N/A
Otay Mesa Rd (E-W) @ Harvest Rd (N-S)	**County**/City	(a)	N/A	(a)	N/A	B/C	N/A
Otay Mesa Rd (E-W) @ Sanyo Av (N-S)	**County**/City	A/B	N/A	B/D	A/B	D/D	N/A
Otay Mesa Rd (E-W) @ Vann Centre Blvd (N-S)	County	(b)	N/A	(b)	N/A	D/C	N/A
Otay Mesa Rd (E-W) @ Michael Faraday Dr (N-S)	County	(b)	N/A	(b)	N/A	**E/D**	D/C
Otay Mesa (E-W) @ Enrico Fermi (N-S)	**County**/City	D/D	N/A	**F/F**	C/C	**E/C**	D/C
Otay Mesa Rd (E-W) @ Alta Rd (N-S)	**County**/City	B/A	N/A	B/A	N/A	**F/F**	C/C
Airway Rd (E-W) @ Sanyo Av (N-S)	City	B/B	N/A	B/B	N/A	**F/F**	D/C
Airway Rd (E-W) @ Paseo De Las Americas (N-S)	**County**/City	B/B	N/A	B/B	N/A	**F/F**	D/D

(a) The project adds less than the City/County threshold for intersection analysis requirements.
(b) Intersection does not exist under existing conditions.
Bold = Jurisdiction which capacity is based on; N/A = Not Applicable; E-W = East-West Roadway; N-S = North-South Roadway

Table 32 (Continued) – Summary of Mitigated Intersection Level of Service

Intersection	Jurisdiction	Existing + Phase 1		Existing + Phases 1-2		Cum. w/ SR-905	
		Before Mitigation (AM/PM)	After Mitigation (AM/PM)	Before Mitigation (AM/PM)	After Mitigation (AM/PM)	Before Mitigation (AM/PM)	After Mitigation (AM/PM)
Airway Rd (E-W) @ Michael Faraday Dr (N-S)	**County**/City	A/A	N/A	B/B	N/A	C/C	N/A
Airway Rd (E-W) @ Enrico Fermi Dr (N-S)	**County**/City	B/B	N/A	D/C	N/A	C/C	N/A
Siempre Viva Rd (E-W) @ Drucker Ln (N-S)	City	B/B	N/A	B/B	N/A	B/C	N/A
Siempre Viva Rd (E-W) @ SR-905 SB off to Siempre Viva EB (N-S)	Caltrans	A/A	N/A	A/A	N/A	B/B	N/A
Siempre Viva Rd (E-W) @ SR-905 SB off to Siempre Viva WB (N-S)	Caltrans	B/B	N/A	B/B	N/A	C/C	N/A
Siempre Viva Rd (E-W) @ SR-905 NB Ramp (N-S)	Caltrans	A/A	N/A	A/A	N/A	B/B	N/A
Siempre Viva Rd (E-W) @ Paseo De Las Americas (N-S)	City	C/D	N/A	C/D	N/A	C/D	N/A
Siempre Viva Rd (E-W) @ Michael Faraday Dr(N-S)	City	B/C	N/A	C/C	N/A	**F/F**	B/B
Siempre Viva Rd (E-W) @ Enrico Fermi Dr(N-S)	County	C/C	N/A	C/B	N/A	C/C	N/A
Alta Rd (E-W) @ Lone Star Rd (Paseo De La Fuente) (N-S)	County	A/A	N/A	A/A	N/A	B/B	N/A

(a) The project adds less than the City/County threshold for intersection analysis requirements.
(b) Intersection does not exist under existing conditions.
Bold = Jurisdiction which capacity is based on; N/A = Not Applicable; E-W = East-West Roadway; N-S = North-South Roadway

SECTION IX - SUMMARY OF FINDINGS AND CONCLUSIONS

- The applicant proposes to develop the Hawano Industrial Business Park Development on a 79.6 gross acre site (58.8 net useable acres) located in the East Otay Mesa Area of San Diego County. The proposed project is bounded by Airway Road on the north, Via De La Amistad on the south, Airway Place on the west, and Alta Road on the east.

- Based on the net acres for the site and a proposed floor area ratio (FAR) of 0.33, the proposed project will consist of approximately 852,426 square feet of business park use. It is anticipated that the project will be developed in two phases. Phase 1 of the project comprises of approximately 432,682 square feet of business park use on 30.0 net useable acres and is proposed to be completed in the year 2013. Phase 2 of the project comprises of approximately 419,744 square feet of business park use on 28.8 net useable acres and is proposed to be completed in the year 2014.

- Phase 1 of the proposed project is estimated to generate 6,923 average daily trips (ADT), 831 morning peak hour trips, and 831 afternoon peak hour trips. Full build out the project (Phases 1-2) is estimated to generate 13,639 ADT, 1,637 AM peak hour trips, and 1,637 PM peak hour trips.

- The project is part of significant direct and cumulative impacts in the City and County of San Diego. See Section VIII for a summary of the measures the developer will take to mitigate for the project's direct and cumulative impacts.

APPENDIX A

- 24 Hour Machine Counts
- AM/PM Peak Hour Traffic Counts
- City of San Diego Level of Service Thresholds
- Excerpts from the County of San Diego Public Facility Element
- Excerpts from County of San Diego Public Road Standards
- SANDAG's Trip Generation Rates
- Excerpts from County's Guidelines for Determining Significance
- Excerpts from City of San Diego's Significance Determination Thresholds
- Excerpts from Caltrans Guidelines for the Preparation of Traffic Impact Studies
- *Addendum to Real Estate Market Analysis* for Otay Mesa Community Plan Area, ERA

24 Hour Machine Counts

2011 Counts

Average Daily Traffic Volumes

Prepared by: Field Data Services of Arizona, Inc.

TUESDAY, FEBRUARY 15, 2011 CITY: OTAY MESA PROJECT: CA11-0218-05-001

OTAY MESA BTN HERITAGE & CACTUS

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
00:00			60		74			12:00			332		312		
00:15			54		84			12:15			319		333		
00:30			50		62			12:30			305		305		
00:45			42	206	66	286	492	12:45			318	1274	319	1269	2543
01:00			40		51			13:00			288		342		
01:15			44		40			13:15			292		362		
01:30			38		35			13:30			312		368		
01:45			30	152	44	170	322	13:45			306	1198	384	1456	2654
02:00			33		40			14:00			290		377		
02:15			35		35			14:15			277		401		
02:30			31		33			14:30			268		442		
02:45			28	127	30	138	265	14:45			290	1125	415	1635	2760
03:00			26		26			15:00			318		468		
03:15			35		22			15:15			305		484		
03:30			33		18			15:30			315		515		
03:45			40	134	26	92	226	15:45			333	1271	505	1972	3243
04:00			68		48			16:00			366		577		
04:15			99		88			16:15			412		651		
04:30			90		121			16:30			389		562		
04:45			135	392	135	392	784	16:45			392	1559	688	2478	4037
05:00			151		168			17:00			351		569		
05:15			177		151			17:15			404		690		
05:30			226		198			17:30			366		603		
05:45			235	789	226	743	1532	17:45			351	1472	451	2313	3785
06:00			299		235			18:00			366		501		
06:15			354		225			18:15			335		442		
06:30			388		251			18:30			326		401		
06:45			392	1433	275	986	2419	18:45			323	1350	426	1770	3120
07:00			435		288			19:00			292		351		
07:15			488		284			19:15			251		318		
07:30			515		275			19:30			235		284		
07:45			751	2189	339	1186	3375	19:45			245	1023	262	1215	2238
08:00			615		305			20:00			212		280		
08:15			462		262			20:15			184		292		
08:30			412		280			20:30			162		206		
08:45			466	1955	295	1142	3097	20:45			181	739	223	1001	1740
09:00			442		292			21:00			168		215		
09:15			408		288			21:15			155		195		
09:30			416		262			21:30			161		199		
09:45			409	1675	251	1093	2768	21:45			142	626	162	771	1397
10:00			369		268			22:00			108		154		
10:15			366		277			22:15			112		132		
10:30			342		268			22:30			121		108		
10:45			355	1432	251	1064	2496	22:45			84	425	88	482	907
11:00			310		292			23:00			65		95		
11:15			316		286			23:15			54		90		
11:30			330		287			23:30			66		84		
11:45			306	1262	291	1156	2418	23:45			52	237	68	337	574
Total Vol.				11746		8448	**20194**					12299		16699	**28998**

	AM			PM		
Daily Totals	NB	SB	EB	WB	**Combined**	
			24045	25147	**49192**	
Split %	58.2%	41.8%	**41.1%**	42.4%	57.6%	**58.9%**
Peak Hour	07:15	11:45	**07:15**	16:00	16:45	**16:45**
Volume	2369	1241	**3572**	1559	2550	**4063**
P.H.F.	0.79	0.93	**0.82**	0.95	0.92	**0.93**

PACIFIC TRAFFIC & TRANSIT DATA SERVICES

Average Daily Traffic Volumes

Prepared by: Field Data Services of Arizona, Inc.

TUESDAY, FEBRUARY 15, 2011 CITY: OTAY MESA PROJECT: CA11-0218-05-002

OTAY MESA BTN CACTUS & BRITANNIA

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
00:00			55		55			12:00			309		310		
00:15			50		60			12:15			288		288		
00:30			40		77			12:30			292		312		
00:45			45	190	60	252	442	12:45			310	1199	290	1200	2399
01:00			35		65			13:00			290		316		
01:15			33		44			13:15			268		336		
01:30			30		40			13:30			295		308		
01:45			38	136	35	184	320	13:45			296	1149	342	1302	2451
02:00			37		28			14:00			277		368		
02:15			28		22			14:15			284		369		
02:30			22		29			14:30			296		377		
02:45			26	113	20	99	212	14:45			274	1131	384	1498	2629
03:00			21		19			15:00			310		442		
03:15			19		22			15:15			282		468		
03:30			22		20			15:30			290		484		
03:45			28	90	22	83	173	15:45			326	1208	492	1886	3094
04:00			28		32			16:00			366		518		
04:15			55		30			16:15			412		635		
04:30			68		44			16:30			409		555		
04:45			77	228	90	196	424	16:45			382	1569	662	2370	3939
05:00			121		105			17:00			351		562		
05:15			135		135			17:15			415		648		
05:30			168		144			17:30			362		551		
05:45			198	622	189	573	1195	17:45			350	1478	458	2219	3697
06:00			268		208			18:00			326		490		
06:15			299		226			18:15			308		435		
06:30			342		268			18:30			288		404		
06:45			382	1291	277	979	2270	18:45			292	1214	415	1744	2958
07:00			415		303			19:00			260		388		
07:15			468		266			19:15			212		326		
07:30			488		284			19:30			218		315		
07:45			751	2122	320	1173	3295	19:45			226	916	251	1280	2196
08:00			568		288			20:00			201		280		
08:15			466		262			20:15			161		284		
08:30			404		274			20:30			150		226		
08:45			451	1889	292	1116	3005	20:45			142	654	205	995	1649
09:00			435		290			21:00			135		212		
09:15			426		262			21:15			105		188		
09:30			415		240			21:30			112		192		
09:45			401	1677	255	1047	2724	21:45			99	451	199	791	1242
10:00			370		268			22:00			70		142		
10:15			351		270			22:15			77		135		
10:30			362		259			22:30			68		101		
10:45			335	1418	255	1052	2470	22:45			54	269	90	468	737
11:00			342		268			23:00			55		77		
11:15			315		288			23:15			62		65		
11:30			332		292			23:30			42		66		
11:45			292	1281	272	1120	2401	23:45			40	199	54	262	461
Total Vol.				11057		7874	**18931**					11437		16015	**27452**

			Daily Totals		
	NB	SB	EB	WB	Combined
			22494	23889	**46383**

	AM			PM		
Split %	58.4%	41.6%	**40.8%**	41.7%	58.3%	**59.2%**
Peak Hour	07:15	11:45	**07:15**	16:00	16:30	**16:30**
Volume	2275	1182	**3433**	1569	2427	**3984**
P.H.F.	0.76	0.95	**0.80**	0.95	0.92	**0.94**

PACIFIC TRAFFIC & TRANSIT DATA SERVICES

Average Daily Traffic Volumes

Prepared by: Field Data Services of Arizona, Inc.

TUESDAY, FEBRUARY 15, 2011 CITY: OTAY MESA PROJECT: CA11-0218-05-003

OTAY MESA BTN BRITANNIA & LA MEDIA

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
00:00			24		28			12:00			130		108		
00:15			20		20			12:15			126		112		
00:30			19		19			12:30			117		109		
00:45			22	85	22	89	174	12:45			108	481	121	450	931
01:00			26		16			13:00			119		105		
01:15			17		11			13:15			98		112		
01:30			11		19			13:30			90		126		
01:45			18	72	10	56	128	13:45			105	412	111	454	866
02:00			12		9			14:00			96		135		
02:15			13		12			14:15			97		141		
02:30			9		13			14:30			105		151		
02:45			8	42	8	42	84	14:45			115	413	162	589	1002
03:00			10		15			15:00			135		177		
03:15			8		18			15:15			141		195		
03:30			9		22			15:30			132		226		
03:45			18	45	19	74	119	15:45			140	548	235	833	1381
04:00			17		15			16:00			151		251		
04:15			11		10			16:15			160		266		
04:30			13		9			16:30			188		290		
04:45			18	59	10	44	103	16:45			165	664	330	1137	1801
05:00			22		28			17:00			151		312		
05:15			48		35			17:15			142		316		
05:30			51		33			17:30			131		288		
05:45			77	198	44	140	338	17:45			133	557	212	1128	1685
06:00			121		51			18:00			135		202		
06:15			151		66			18:15			141		226		
06:30			189		70			18:30			108		203		
06:45			213	674	88	275	949	18:45			116	500	191	822	1322
07:00			235		118			19:00			90		184		
07:15			280		90			19:15			92		171		
07:30			315		126			19:30			91		161		
07:45			448	1278	115	449	1727	19:45			84	357	141	657	1014
08:00			351		88			20:00			88		135		
08:15			262		90			20:15			70		105		
08:30			250		121			20:30			62		111		
08:45			242	1105	99	398	1503	20:45			55	275	98	449	724
09:00			215		98			21:00			56		88		
09:15			226		103			21:15			59		62		
09:30			203		111			21:30			40		66		
09:45			181	825	95	407	1232	21:45			35	190	62	278	468
10:00			192		90			22:00			33		50		
10:15			161		84			22:15			32		42		
10:30			172		88			22:30			30		35		
10:45			170	695	95	357	1052	22:45			28	123	33	160	283
11:00			142		91			23:00			22		28		
11:15			135		107			23:15			26		20		
11:30			133		115			23:30			20		22		
11:45			142	552	92	405	957	23:45			21	89	23	93	182
Total Vol.				5630		2736	**8366**					4609		7050	**11659**

			Daily Totals		
	NB	SB	EB	WB	**Combined**
			10239	9786	**20025**
	AM		**PM**		
Split %	67.3%	32.7%	**41.8%**	39.5%	60.5%	**58.2%**
Peak Hour	07:15	07:00	**07:15**	16:00	16:30	**16:30**
Volume	1394	449	**1813**	664	1248	**1894**
P.H.F.	0.78	0.89	**0.81**	0.88	0.95	**0.96**

PACIFIC TRAFFIC & TRANSIT DATA SERVICES

Average Daily Traffic Volumes

Prepared by: Field Data Services of Arizona, Inc.

TUESDAY, FEBRUARY 15, 2011 CITY: OTAY MESA PROJECT: CA11-0225-07-001

OTAY MESA BTN LA MEDIA & PIPER RANCH

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
00:00			21		23			12:00			115		105		
00:15			18		22			12:15			110		98		
00:30			20		10			12:30			121		99		
00:45			16	75	18	73	148	12:45			98	444	117	419	863
01:00			11		14			13:00			88		103		
01:15			15		13			13:15			87		96		
01:30			9		16			13:30			82		105		
01:45			12	47	20	63	110	13:45			55	312	115	419	731
02:00			11		13			14:00			68		108		
02:15			17		15			14:15			70		122		
02:30			9		9			14:30			84		142		
02:45			10	47	10	47	94	14:45			90	312	135	507	819
03:00			7		16			15:00			77		168		
03:15			12		20			15:15			84		151		
03:30			13		18			15:30			92		162		
03:45			11	43	12	66	109	15:45			88	341	184	665	1006
04:00			9		15			16:00			92		222		
04:15			16		9			16:15			90		230		
04:30			11		8			16:30			131		205		
04:45			10	46	11	43	89	16:45			117	430	212	869	1299
05:00			18		16			17:00			126		198		
05:15			20		20			17:15			122		201		
05:30			35		28			17:30			101		144		
05:45			51	124	32	96	220	17:45			90	439	101	644	1083
06:00			90		40			18:00			88		121		
06:15			99		62			18:15			80		116		
06:30			135		55			18:30			96		103		
06:45			141	465	77	234	699	18:45			91	355	90	430	785
07:00			170		90			19:00			103		84		
07:15			191		105			19:15			84		88		
07:30			251		121			19:30			70		75		
07:45			223	835	141	457	1292	19:45			51	308	68	315	623
08:00			208		105			20:00			44		51		
08:15			151		108			20:15			58		77		
08:30			162		110			20:30			51		84		
08:45			148	669	98	421	1090	20:45			40	193	90	302	495
09:00			151		90			21:00			35		55		
09:15			142		77			21:15			42		68		
09:30			131		84			21:30			41		62		
09:45			128	552	88	339	891	21:45			30	148	35	220	368
10:00			144		81			22:00			28		44		
10:15			151		96			22:15			20		41		
10:30			135		77			22:30			16		28		
10:45			152	582	84	338	920	22:45			22	86	20	133	219
11:00			121		92			23:00			20		19		
11:15			128		90			23:15			19		18		
11:30			138		87			23:30			11		12		
11:45			122	509	81	350	859	23:45			17	67	13	62	129
Total Vol.				3994		2527	**6521**					3435		4985	**8420**

			Daily Totals		
	NB	SB	EB	WB	Combined
			7429	7512	**14941**

	AM			PM		
Split %	61.2%	38.8%	**43.6%**	40.8%	59.2%	**56.4%**
Peak Hour	07:15	07:30	**07:15**	16:30	16:00	**16:30**
Volume	873	475	**1345**	496	869	**1312**
P.H.F.	0.87	0.84	**0.90**	0.95	0.94	**0.98**

PACIFIC TRAFFIC & TRANSIT DATA SERVICES

Average Daily Traffic Volumes

Prepared by: Field Data Services of Arizona, Inc.

TUESDAY, FEBRUARY 15, 2011 CITY: OTAY MESA PROJECT: CA11-0225-07-002

OTAY MESA BTN PIPER RANCH & SR-125

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
00:00			13		15			12:00			114		90		
00:15			18		18			12:15			108		99		
00:30			12		11			12:30			106		84		
00:45			15	58	9	53	111	12:45			115	443	85	358	801
01:00			10		10			13:00			108		105		
01:15			9		15			13:15			92		116		
01:30			11		9			13:30			90		121		
01:45			10	40	10	44	84	13:45			88	378	103	445	823
02:00			9		7			14:00			84		115		
02:15			15		9			14:15			62		120		
02:30			18		5			14:30			66		151		
02:45			11	53	8	29	82	14:45			82	294	142	528	822
03:00			10		12			15:00			70		161		
03:15			7		11			15:15			82		168		
03:30			9		16			15:30			91		172		
03:45			16	42	10	49	91	15:45			83	326	168	669	995
04:00			10		9			16:00			80		184		
04:15			14		12			16:15			85		215		
04:30			9		16			16:30			120		155		
04:45			7	40	10	47	87	16:45			101	386	198	752	1138
05:00			12		14			17:00			115		129		
05:15			26		22			17:15			103		177		
05:30			30		25			17:30			122		126		
05:45			44	112	38	99	211	17:45			103	443	98	530	973
06:00			80		44			18:00			112		90		
06:15			81		68			18:15			106		103		
06:30			126		70			18:30			101		115		
06:45			131	418	84	266	684	18:45			92	411	92	400	811
07:00			145		90			19:00			88		96		
07:15			188		82			19:15			81		81		
07:30			226		126			19:30			72		88		
07:45			195	754	135	433	1187	19:45			42	283	70	335	618
08:00			177		95			20:00			40		54		
08:15			121		108			20:15			52		70		
08:30			133		110			20:30			35		68		
08:45			120	551	90	403	954	20:45			33	160	84	276	436
09:00			121		88			21:00			38		62		
09:15			132		92			21:15			42		61		
09:30			108		77			21:30			48		50		
09:45			115	476	74	331	807	21:45			35	163	44	217	380
10:00			124		84			22:00			30		35		
10:15			135		96			22:15			18		30		
10:30			121		88			22:30			11		28		
10:45			130	510	105	373	883	22:45			16	75	22	115	190
11:00			126		111			23:00			20		15		
11:15			108		92			23:15			16		11		
11:30			115		98			23:30			10		16		
11:45			120	469	81	382	851	23:45			15	61	10	52	113
Total Vol.				3523		2509	**6032**					3423		4677	**8100**

							Daily Totals			
						NB	SB	EB	WB	**Combined**
								6946	7186	**14132**
	AM							**PM**		
Split %	58.4%	41.6%	**42.7%**					42.3%	57.7%	**57.3%**
Peak Hour	07:15	07:30	**07:15**					12:00	16:00	**16:00**
Volume	786	464	**1224**					443	752	**1138**
P.H.F.	0.87	0.86	**0.87**					0.96	0.87	**0.95**

PACIFIC TRAFFIC & TRANSIT DATA SERVICES

Average Daily Traffic Volumes

Prepared by: Field Data Services of Arizona, Inc.

TUESDAY, FEBRUARY 15, 2011 CITY: OTAY MESA PROJECT: CA11-0225-07-003

OTAY MESA BTN SR-125 & HARVEST

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
00:00			13		15			12:00			99		116		
00:15			9		6			12:15			84		132		
00:30			11		10			12:30			86		128		
00:45			16	49	11	42	91	12:45			96	365	122	498	863
01:00			20		16			13:00			77		129		
01:15			18		12			13:15			84		108		
01:30			15		5			13:30			88		132		
01:45			7	60	11	44	104	13:45			68	317	142	511	828
02:00			8		6			14:00			66		143		
02:15			10		5			14:15			72		168		
02:30			5		10			14:30			77		155		
02:45			6	29	5	26	55	14:45			61	276	162	628	904
03:00			5		4			15:00			68		184		
03:15			10		6			15:15			55		216		
03:30			9		11			15:30			49		208		
03:45			19	43	9	30	73	15:45			51	223	221	829	1052
04:00			11		4			16:00			70		262		
04:15			18		5			16:15			68		315		
04:30			21		10			16:30			77		205		
04:45			32	82	9	28	110	16:45			84	299	218	1000	1299
05:00			44		11			17:00			65		216		
05:15			48		16			17:15			89		166		
05:30			51		20			17:30			62		151		
05:45			90	233	26	73	306	17:45			70	286	109	642	928
06:00			108		22			18:00			74		115		
06:15			131		18			18:15			68		109		
06:30			161		32			18:30			60		88		
06:45			218	618	40	112	730	18:45			42	244	70	382	626
07:00			229		51			19:00			35		68		
07:15			218		55			19:15			44		51		
07:30			295		84			19:30			41		44		
07:45			340	1082	88	278	1360	19:45			30	150	35	198	348
08:00			288		62			20:00			32		42		
08:15			175		68			20:15			38		50		
08:30			177		70			20:30			25		42		
08:45			162	802	75	275	1077	20:45			26	121	31	165	286
09:00			151		70			21:00			20		28		
09:15			168		88			21:15			16		20		
09:30			142		90			21:30			11		19		
09:45			135	596	95	343	939	21:45			19	66	22	89	155
10:00			115		105			22:00			12		16		
10:15			116		112			22:15			16		21		
10:30			128		96			22:30			9		12		
10:45			103	462	103	416	878	22:45			10	47	13	62	109
11:00			115		121			23:00			10		18		
11:15			98		105			23:15			11		10		
11:30			102		95			23:30			13		15		
11:45			96	411	115	436	847	23:45			7	41	16	59	100
Total Vol.				4467		2103	**6570**					2435		5063	**7498**

			Daily Totals		
	NB	SB	EB	WB	**Combined**
			6902	7166	**14068**
	AM		**PM**		
Split %	68.0%	32.0%	32.5%	67.5%	**53.3%**
Peak Hour	07:15	11:45	12:00	15:30	**16:00**
Volume	1141	491	365	1006	**1299**
P.H.F.	0.84	0.93	0.92	0.80	**0.85**

PACIFIC TRAFFIC & TRANSIT DATA SERVICES

Average Daily Traffic Volumes

Prepared by: Field Data Services of Arizona, Inc.

TUESDAY, MARCH 1 2011 CITY: OTAY MESA PROJECT: CA11-0304-04-004

AIRWAY BTN MICHAEL FARADAY & ENRICO FERMI

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
00:00			0		0			12:00			5		7		
00:15			2		2			12:15			6		9		
00:30			1		0			12:30			6		12		
00:45			1	4	1	3	7	12:45			5	22	11	39	61
01:00			0		0			13:00			4		6		
01:15			1		0			13:15			5		5		
01:30			0		0			13:30			7		9		
01:45			2	3	2	2	5	13:45			5	21	10	30	51
02:00			1		1			14:00			4		7		
02:15			0		0			14:15			9		9		
02:30			0		2			14:30			9		8		
02:45			0	1	1	4	5	14:45			8	30	13	37	67
03:00			0		0			15:00			6		11		
03:15			2		0			15:15			5		10		
03:30			0		0			15:30			11		12		
03:45			2	4	1	1	5	15:45			9	31	16	49	80
04:00			1		1			16:00			10		20		
04:15			0		2			16:15			5		13		
04:30			1		1			16:30			6		11		
04:45			1	3	0	4	7	16:45			3	24	10	54	78
05:00			0		1			17:00			8		11		
05:15			2		0			17:15			7		12		
05:30			0		0			17:30			4		13		
05:45			2	4	2	3	7	17:45			6	25	9	45	70
06:00			5		3			18:00			4		8		
06:15			3		2			18:15			5		10		
06:30			4		4			18:30			6		5		
06:45			2	14	5	14	28	18:45			1	16	4	27	43
07:00			5		6			19:00			4		3		
07:15			7		4			19:15			2		5		
07:30			3		18			19:30			3		2		
07:45			5	20	5	33	53	19:45			1	10	1	11	21
08:00			4		5			20:00			4		5		
08:15			6		7			20:15			2		4		
08:30			6		7			20:30			1		3		
08:45			8	24	10	29	53	20:45			4	11	1	13	24
09:00			4		8			21:00			2		0		
09:15			5		12			21:15			1		1		
09:30			5		5			21:30			1		2		
09:45			6	20	6	31	51	21:45			1	5	0	3	8
10:00			5		5			22:00			2		1		
10:15			2		4			22:15			1		2		
10:30			8		8			22:30			1		2		
10:45			5	20	9	26	46	22:45			0	4	2	7	11
11:00			4		5			23:00			2		0		
11:15			5		5			23:15			0		0		
11:30			4		10			23:30			0		0		
11:45			6	19	5	25	44	23:45			1	3	1	1	4
Total Vol.				136		175	**311**					202		316	**518**

			Daily Totals		
	NB	SB	EB	WB	**Combined**
			338	491	**829**
	AM		**PM**		
Split %	43.7%	56.3% **37.5%**	39.0%	61.0%	**62.5%**
Peak Hour	08:00	08:30 **08:30**	15:15	15:30	**15:30**
Volume	24	37 **60**	35	61	**96**
P.H.F.	0.75	0.77 **0.83**	0.80	0.76	**0.80**

PACIFIC TRAFFIC & TRANSIT DATA SERVICES

Average Daily Traffic Volumes

Prepared by: Field Data Services of Arizona, Inc.

TUESDAY, FEBRUARY 15, 2011 CITY: OTAY MESA PROJECT: CA11-0218-05-005

SIEMPRE VIVA BTN DRUCKER & SR-905

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
00:00			0		1			12:00			44		50		
00:15			1		0			12:15			35		42		
00:30			2		1			12:30			33		44		
00:45			0	3	2	4	7	12:45			36	148	52	188	336
01:00			0		1			13:00			42		62		
01:15			0		0			13:15			48		66		
01:30			1		0			13:30			51		67		
01:45			2	3	1	2	5	13:45			35	176	62	257	433
02:00			0		2			14:00			33		70		
02:15			1		2			14:15			51		84		
02:30			2		1			14:30			48		88		
02:45			2	5	1	6	11	14:45			42	174	72	314	488
03:00			2		0			15:00			51		71		
03:15			3		2			15:15			55		84		
03:30			0		4			15:30			49		95		
03:45			2	7	5	11	18	15:45			53	208	98	348	556
04:00			2		9			16:00			68		105		
04:15			0		12			16:15			71		88		
04:30			1		11			16:30			44		80		
04:45			5	8	10	42	50	16:45			68	251	92	365	616
05:00			8		9			17:00			84		95		
05:15			9		13			17:15			81		91		
05:30			7		18			17:30			62		77		
05:45			9	33	20	60	93	17:45			44	271	68	331	602
06:00			5		16			18:00			48		66		
06:15			13		26			18:15			44		51		
06:30			10		35			18:30			46		68		
06:45			17	45	33	110	155	18:45			35	173	66	251	424
07:00			18		38			19:00			32		54		
07:15			25		44			19:15			33		50		
07:30			15		51			19:30			32		42		
07:45			20	78	58	191	269	19:45			18	115	35	181	296
08:00			28		77			20:00			26		33		
08:15			33		84			20:15			20		20		
08:30			48		68			20:30			15		19		
08:45			35	144	82	311	455	20:45			11	72	26	98	170
09:00			40		66			21:00			9		15		
09:15			41		60			21:15			12		11		
09:30			40		51			21:30			5		9		
09:45			33	154	44	221	375	21:45			9	35	12	47	82
10:00			35		51			22:00			5		8		
10:15			35		42			22:15			1		9		
10:30			44		35			22:30			0		2		
10:45			41	155	42	170	325	22:45			1	7	1	20	27
11:00			51		41			23:00			2		0		
11:15			42		35			23:15			0		3		
11:30			35		42			23:30			1		1		
11:45			38	166	41	159	325	23:45			2	5	0	4	9
Total Vol.				801		1287	**2088**					1635		2404	**4039**

	NB	SB	Daily Totals EB	WB	Combined
			2436	3691	**6127**
	AM		**PM**		
Split %	38.4%	61.6%	40.5%	59.5%	**34.1%** / **65.9%**
Peak Hour	10:30	08:00	16:45	15:30	**08:15** / **16:45**
Volume	178	311	295	386	**456** / **650**
P.H.F.	0.87	0.93	0.88	0.92	**0.97** / **0.91**

PACIFIC TRAFFIC & TRANSIT DATA SERVICES

Average Daily Traffic Volumes

Prepared by: Field Data Services of Arizona, Inc.

TUESDAY, FEBRUARY 15, 2011 CITY: OTAY MESA PROJECT: CA11-0225-07-004

SIEMPRE VIVA BTN ROLL & PASEO DE LAS AMERICAS

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
00:00			15		10			12:00			107		90		
00:15			16		16			12:15			112		105		
00:30			22		9			12:30			103		112		
00:45			18	71	11	46	117	12:45			142	464	103	410	874
01:00			15		10			13:00			125		126		
01:15			9		5			13:15			135		113		
01:30			7		9			13:30			112		128		
01:45			8	39	7	31	70	13:45			104	476	120	487	963
02:00			5		5			14:00			121		131		
02:15			10		3			14:15			106		135		
02:30			5		2			14:30			115		142		
02:45			9	29	1	11	40	14:45			122	464	168	576	1040
03:00			11		5			15:00			135		151		
03:15			16		5			15:15			142		196		
03:30			10		7			15:30			172		184		
03:45			9	46	16	33	79	15:45			161	610	192	723	1333
04:00			11		12			16:00			184		228		
04:15			12		19			16:15			190		210		
04:30			18		11			16:30			226		215		
04:45			20	61	16	58	119	16:45			184	784	223	876	1660
05:00			44		20			17:00			210		198		
05:15			51		18			17:15			181		125		
05:30			62		11			17:30			162		195		
05:45			77	234	16	65	299	17:45			149	702	178	696	1398
06:00			101		28			18:00			121		184		
06:15			121		41			18:15			106		168		
06:30			154		44			18:30			115		177		
06:45			151	527	40	153	680	18:45			103	445	184	713	1158
07:00			173		90			19:00			98		151		
07:15			201		112			19:15			77		142		
07:30			210		121			19:30			70		135		
07:45			215	799	135	458	1257	19:45			65	310	117	545	855
08:00			208		128			20:00			42		108		
08:15			188		121			20:15			35		121		
08:30			161		119			20:30			26		119		
08:45			165	722	128	496	1218	20:45			22	125	84	432	557
09:00			151		117			21:00			28		88		
09:15			138		123			21:15			17		76		
09:30			145		116			21:30			26		65		
09:45			122	556	103	459	1015	21:45			15	86	42	271	357
10:00			108		114			22:00			11		35		
10:15			121		128			22:15			18		33		
10:30			103		109			22:30			12		18		
10:45			98	430	117	468	898	22:45			9	50	22	108	158
11:00			112		102			23:00			12		26		
11:15			105		112			23:15			17		16		
11:30			99		121			23:30			11		21		
11:45			106	422	116	451	873	23:45			9	49	16	79	128
Total Vol.				3936		2729	**6665**					4565		5916	**10481**

Daily Totals

NB	SB	EB	WB	Combined
		8501	8645	**17146**

	AM			PM		
Split %	59.1%	40.9%	**38.9%**	43.6%	56.4%	**61.1%**
Peak Hour	07:15	07:30	**07:15**	16:15	16:00	**16:00**
Volume	834	505	**1330**	810	876	**1660**
P.H.F.	0.97	0.94	**0.95**	0.90	0.96	**0.94**

PACIFIC TRAFFIC & TRANSIT DATA SERVICES

Average Daily Traffic Volumes

Prepared by: Field Data Services of Arizona, Inc.

TUESDAY, FEBRUARY 15, 2011 CITY: OTAY MESA PROJECT: CA11-0218-05-004

SANYO BTN OTAY MESA & AIRWAY

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
00:00	3		2					12:00	54		66				
00:15	4		1					12:15	50		54				
00:30	2		0					12:30	68		44				
00:45	0	9	1	4			13	12:45	66	238	35	199			437
01:00	1		2					13:00	51		44				
01:15	0		0					13:15	78		51				
01:30	1		1					13:30	77		40				
01:45	2	4	1	4			8	13:45	65	271	35	170			441
02:00	2		0					14:00	74		33				
02:15	2		2					14:15	84		44				
02:30	1		1					14:30	69		51				
02:45	0	5	2	5			10	14:45	75	302	35	163			465
03:00	0		1					15:00	84		42				
03:15	1		0					15:15	89		35				
03:30	2		1					15:30	95		36				
03:45	1	4	2	4			8	15:45	105	373	42	155			528
04:00	0		1					16:00	118		40				
04:15	1		0					16:15	70		51				
04:30	2		4					16:30	88		55				
04:45	4	7	5	10			17	16:45	110	386	58	204			590
05:00	1		6					17:00	131		52				
05:15	2		11					17:15	117		56				
05:30	4		18					17:30	70		41				
05:45	10	17	26	61			78	17:45	88	406	33	182			588
06:00	9		44					18:00	98		35				
06:15	13		51					18:15	84		33				
06:30	18		68					18:30	90		28				
06:45	17	57	77	240			297	18:45	77	349	20	116			465
07:00	19		90					19:00	68		19				
07:15	25		99					19:15	54		26				
07:30	33		128					19:30	44		22				
07:45	17	94	151	468			562	19:45	28	194	15	82			276
08:00	26		118					20:00	18		11				
08:15	37		105					20:15	22		9				
08:30	55		101					20:30	16		10				
08:45	33	151	119	443			594	20:45	11	67	13	43			110
09:00	38		108					21:00	9		8				
09:15	33		111					21:15	10		9				
09:30	30		98					21:30	5		5				
09:45	36	137	90	407			544	21:45	6	30	4	26			56
10:00	41		103					22:00	4		1				
10:15	44		84					22:15	1		1				
10:30	48		70					22:30	2		0				
10:45	40	173	68	325			498	22:45	2	9	1	3			12
11:00	41		66					23:00	0		2				
11:15	47		51					23:15	1		0				
11:30	51		42					23:30	2		0				
11:45	66	205	55	214			419	23:45	0	3	1	3			6
Total Vol.		863		2185			**3048**		2628		1346				**3974**

Daily Totals

NB	SB	EB	WB	Combined
3491	3531			**7022**

	AM			PM		
Split %	28.3%	71.7%	**43.4%**	66.1%	33.9%	**56.6%**
Peak Hour	11:45	07:30	**07:30**	16:30	16:30	**16:30**
Volume	238	502	**615**	446	221	**667**
P.H.F.	0.88	0.83	**0.92**	0.88	0.95	**0.91**

PACIFIC TRAFFIC & TRANSIT DATA SERVICES

2010 Counts

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of San Diego
Otay Mesa Road
B/ Sanyo Avenue - Enrico Fermi Drive
24 Hour Directional Volume Count

SDCOMSAEF
Site Code: 167-10122
Date Start: 26-May-10
Date End: 26-May-10

Start Time	26-May-10 Wed	Eastbound Morning	Eastbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Westbound Morning	Westbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		9	38			8	62				
12:15		8	52			3	67				
12:30		14	58			13	83				
12:45		12	45	43	193	18	85	42	297	85	490
01:00		2	**46**			3	82				
01:15		6	**69**			2	55				
01:30		4	**114**			4	71				
01:45		1	**86**	13	315	7	113	16	321	29	636
02:00		5	46			7	107				
02:15		5	61			3	183				
02:30		7	57			7	174				
02:45		0	51	17	215	12	131	29	595	46	810
03:00		6	33			0	166				
03:15		9	35			2	137				
03:30		6	34			6	**153**				
03:45		15	27	36	129	8	**189**	16	645	52	774
04:00		11	41			7	**172**				
04:15		6	28			5	**164**				
04:30		11	22			12	128				
04:45		10	43	38	134	9	138	33	602	71	736
05:00		21	20			10	144				
05:15		46	29			8	92				
05:30		131	28			12	105				
05:45		194	23	392	100	12	94	42	435	434	535
06:00		104	15			46	61				
06:15		92	22			50	80				
06:30		103	23			105	72				
06:45		**181**	19	480	79	65	60	266	273	746	352
07:00		**168**	19			70	38				
07:15		**84**	14			75	42				
07:30		**121**	9			58	60				
07:45		142	16	515	58	71	35	274	175	789	233
08:00		96	8			60	28				
08:15		70	15			56	35				
08:30		71	10			44	25				
08:45		56	10	293	43	93	30	253	118	546	161
09:00		53	14			53	11				
09:15		36	16			51	12				
09:30		33	44			76	12				
09:45		37	25	159	99	91	29	271	64	430	163
10:00		44	25			72	79				
10:15		30	10			63	93				
10:30		35	14			68	29				
10:45		48	21	157	70	**76**	30	279	231	436	301
11:00		35	12			**122**	7				
11:15		27	4			**86**	14				
11:30		43	6			**89**	9				
11:45		34	13	139	35	61	39	358	69	497	104
Total		2282	1470	2282	1470	1879	3825	1879	3825	4161	5295
Combined Total		3752		3752		5704		5704		9456	
AM Peak		06:45				10:45					
Vol.		554				373					
P.H.F.		0.765				0.764					
PM Peak			01:00				03:30				
Vol.			315				678				
P.H.F.			0.691				0.897				
Percentage		60.8%	39.2%			32.9%	67.1%				
ADT/AADT		ADT 9,456		AADT 9,456							

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of San Diego
Otay Mesa Road
B/ Enrico Fermi Drive - Alta Road
24 Hour Directional Volume Count

SDCOMEFAL
Site Code: 167-10112
Date Start: 25-May-10
Date End: 25-May-10

Start Time	25-May-10 Tue	Eastbound Morning	Eastbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Westbound Morning	Westbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		3	36			5	32				
12:15		8	38			2	26				
12:30		10	45			11	25				
12:45		8	36	29	155	16	27	34	110	63	265
01:00		2	**40**			1	27				
01:15		4	**45**			4	26				
01:30		4	**103**			3	35				
01:45		0	**64**	10	252	9	67	17	155	27	407
02:00		1	37			5	89				
02:15		2	47			1	117				
02:30		4	45			4	118				
02:45		1	38	8	167	8	85	18	409	26	576
03:00		6	19			1	118				
03:15		9	9			1	85				
03:30		7	15			1	**117**				
03:45		14	16	36	59	8	**103**	11	423	47	482
04:00		9	15			4	**137**				
04:15		3	13			4	**106**				
04:30		11	14			2	106				
04:45		11	24	34	66	2	69	12	418	46	484
05:00		22	21			5	82				
05:15		44	15			4	29				
05:30		**134**	30			8	38				
05:45		**194**	31	394	97	4	24	21	173	415	270
06:00		**101**	13			40	20				
06:15		**93**	10			39	24				
06:30		100	9			45	44				
06:45		166	10	460	42	28	21	152	109	612	151
07:00		159	10			14	12				
07:15		79	9			10	21				
07:30		116	4			10	21				
07:45		145	7	499	30	39	17	73	71	572	101
08:00		74	6			22	17				
08:15		42	5			17	19				
08:30		54	4			15	16				
08:45		45	4	215	19	17	9	71	61	286	80
09:00		40	11			15	8				
09:15		25	15			21	11				
09:30		23	50			34	10				
09:45		27	22	115	98	18	27	88	56	203	154
10:00		23	21			18	88				
10:15		23	8			21	83				
10:30		29	13			21	32				
10:45		29	19	104	61	24	26	84	229	188	290
11:00		19	7			**56**	5				
11:15		23	3			**41**	9				
11:30		33	0			**35**	13				
11:45		31	9	106	19	**25**	35	157	62	263	81
Total		2010	1065	2010	1065	738	2276	738	2276	2748	3341
Combined Total		3075		3075		3014		3014		6089	
AM Peak		05:30				11:00					
Vol.		522				157					
P.H.F.		0.673				0.701					
PM Peak			01:00				03:30				
Vol.			252				463				
P.H.F.			0.612				0.845				
Percentage		65.4%	34.6%			24.5%	75.5%				
ADT/AADT		ADT 6,089		AADT 6,089							

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of San Diego
Airway Road
B/ Enrico Fermi Drive - Airway Drive
24 Hour Directional Volume Count

SDCAIEFAI
Site Code: 167-10122
Date Start: 02-Jun-10
Date End: 02-Jun-10

Start Time	02-Jun-10 Wed	Eastbound Morning	Eastbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Westbound Morning	Westbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		1	8			1	**9**				
12:15		0	16			2	**6**				
12:30		3	10			0	**22**				
12:45		0	12	4	46	0	**14**	3	51	7	97
01:00		0	12			1	5				
01:15		4	4			0	2				
01:30		1	12			2	9				
01:45		0	12	5	40	0	9	3	25	8	65
02:00		2	8			0	8				
02:15		0	9			0	8				
02:30		0	7			2	6				
02:45		2	4	4	28	0	14	2	36	6	64
03:00		2	9			2	5				
03:15		0	10			0	11				
03:30		1	14			0	16				
03:45		0	7	3	40	1	10	3	42	6	82
04:00		3	6			0	12				
04:15		3	11			0	11				
04:30		1	13			1	9				
04:45		0	3	7	33	3	5	4	37	11	70
05:00		1	**18**			4	16				
05:15		2	**9**			0	8				
05:30		5	**22**			6	8				
05:45		3	**6**	11	55	6	11	16	43	27	98
06:00		1	11			4	16				
06:15		3	7			3	9				
06:30		1	9			4	6				
06:45		10	24	15	51	9	12	20	43	35	94
07:00		8	5			7	9				
07:15		3	3			8	4				
07:30		5	3			12	2				
07:45		3	8	19	19	6	2	33	17	52	36
08:00		12	6			2	0				
08:15		4	9			9	5				
08:30		8	4			9	4				
08:45		5	8	29	27	6	1	26	10	55	37
09:00		10	1			20	3				
09:15		1	6			8	0				
09:30		13	3			6	3				
09:45		**17**	2	41	12	**14**	0	48	6	89	18
10:00		**12**	2			**6**	0				
10:15		**11**	7			**13**	0				
10:30		**23**	4			**18**	0				
10:45		8	3	54	16	7	2	44	2	98	18
11:00		3	0			7	2				
11:15		12	0			8	8				
11:30		17	0			19	2				
11:45		8	1	40	1	14	5	48	17	88	18
Total		232	368	232	368	250	329	250	329	482	697
Combined Total		600		600		579		579		1179	
AM Peak		09:45				09:45					
Vol.		63				51					
P.H.F.		0.685				0.708					
PM Peak			05:00				12:00				
Vol.			55				51				
P.H.F.			0.625				0.580				
Percentage		38.7%	61.3%			43.2%	56.8%				
ADT/AADT		ADT 1,179		AADT 1,179							

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of San Diego
Siempre Viva Road
B/ Paseo las Americas - Michael Faraday
24 Hour Directional Volume Count

SDCSVPAMF
Site Code: 167-10112
Date Start: 27-May-10
Date End: 27-May-10

Start Time	27-May-10 Thu	Eastbound Morning	Eastbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Westbound Morning	Westbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		2	55			2	89				
12:15		1	40			3	98				
12:30		1	61			4	106				
12:45		0	33	4	189	2	122	11	415	15	604
01:00		0	50			0	103				
01:15		0	44			1	121				
01:30		6	**55**			0	126				
01:45		1	**60**	7	209	1	136	2	486	9	695
02:00		1	**49**			0	110				
02:15		1	**51**			0	95				
02:30		0	**44**			0	133				
02:45		2	34	4	178	0	127	0	465	4	643
03:00		1	46			1	**122**				
03:15		0	37			0	**122**				
03:30		3	54			5	**151**				
03:45		1	35	5	172	4	**167**	10	562	15	734
04:00		2	30			1	119				
04:15		0	48			0	112				
04:30		4	29			0	150				
04:45		5	26	11	133	0	116	1	497	12	630
05:00		4	28			2	143				
05:15		9	28			2	133				
05:30		2	26			0	118				
05:45		6	30	21	112	3	152	7	546	28	658
06:00		5	16			1	110				
06:15		12	21			21	132				
06:30		10	8			28	112				
06:45		21	10	48	55	38	91	88	445	136	500
07:00		14	22			39	104				
07:15		9	8			65	86				
07:30		26	7			49	56				
07:45		36	6	85	43	65	33	218	279	303	322
08:00		31	9			31	18				
08:15		34	6			61	12				
08:30		35	3			91	14				
08:45		39	4	139	22	90	10	273	54	412	76
09:00		36	4			104	11				
09:15		28	0			**110**	0				
09:30		36	0			**110**	4				
09:45		40	2	140	6	**103**	3	427	18	567	24
10:00		**48**	2			**110**	1				
10:15		**47**	2			95	10				
10:30		**57**	2			110	8				
10:45		**45**	4	197	10	112	5	427	24	624	34
11:00		35	1			93	5				
11:15		41	1			95	5				
11:30		53	3			113	2				
11:45		52	0	181	5	92	3	393	15	574	20
Total		842	1134	842	1134	1857	3806	1857	3806	2699	4940
Combined Total		1976		1976		5663		5663		7639	
AM Peak		10:00				09:15					
Vol.		197				433					
P.H.F.		0.864				0.984					
PM Peak			01:30				03:00				
Vol.			215				562				
P.H.F.			0.896				0.841				
Percentage		42.6%	57.4%			32.8%	67.2%				
ADT/AADT		ADT 7,639		AADT 7,639							

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of San Diego
Siempre Viva Road
B/ Michael Faraday Drive - Enrico Fermi
24 Hour Directional Volume Count

SDCSVMFEF
Site Code: 167-10122
Date Start: 27-May-10
Date End: 27-May-10

Start Time	27-May-10 Thu	Eastbound Morning	Eastbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Westbound Morning	Westbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		1	11			2	88				
12:15		0	24			3	83				
12:30		0	20			0	88				
12:45		0	17	1	72	0	84	5	343	6	415
01:00		2	**28**			1	95				
01:15		0	**31**			2	103				
01:30		1	**23**			0	94				
01:45		1	**24**	4	106	0	78	3	370	7	476
02:00		0	24			1	88				
02:15		3	18			2	104				
02:30		0	12			0	106				
02:45		0	23	3	77	1	**92**	4	390	7	467
03:00		1	23			2	**119**				
03:15		0	22			1	**110**				
03:30		2	14			0	**115**				
03:45		0	22	3	81	2	86	5	430	8	511
04:00		2	16			0	102				
04:15		1	9			0	105				
04:30		2	18			0	102				
04:45		7	16	12	59	3	120	3	429	15	488
05:00		2	10			0	98				
05:15		3	10			1	95				
05:30		5	8			1	116				
05:45		4	6	14	34	11	100	13	409	27	443
06:00		5	6			28	104				
06:15		9	3			37	95				
06:30		9	3			48	105				
06:45		5	6	28	18	69	88	182	392	210	410
07:00		17	3			59	80				
07:15		17	0			54	39				
07:30		18	5			34	33				
07:45		22	5	74	13	49	11	196	163	270	176
08:00		20	0			66	5				
08:15		26	2			73	7				
08:30		19	4			93	2				
08:45		12	0	77	6	56	1	288	15	365	21
09:00		**41**	0			**94**	0				
09:15		**19**	0			**46**	1				
09:30		**24**	0			**102**	2				
09:45		**31**	2	115	2	**78**	4	320	7	435	9
10:00		21	1			51	4				
10:15		18	4			57	3				
10:30		17	1			78	0				
10:45		13	1	69	7	85	0	271	7	340	14
11:00		29	0			56	0				
11:15		25	4			82	6				
11:30		27	0			79	3				
11:45		32	0	113	4	62	0	279	9	392	13
Total		513	479	513	479	1569	2964	1569	2964	2082	3443
Combined Total		992		992		4533		4533		5525	
AM Peak		09:00				09:00					
Vol.		115				320					
P.H.F.		0.701				0.784					
PM Peak			01:00				02:45				
Vol.			106				436				
P.H.F.			0.855				0.916				
Percentage		51.7%	48.3%			34.6%	65.4%				
ADT/AADT		ADT 5,525		AADT 5,525							

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of San Diego
Siempre Viva Road
B/ Enrico Fermi Drive - Airway Drive
24 Hour Directional Volume Count

SDCSVEFAI
Site Code: 167-10122
Date Start: 26-May-10
Date End: 26-May-10

Start Time	26-May-10 Wed	Eastbound Morning	Eastbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Westbound Morning	Westbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		0	3			0	9				
12:15		0	7			0	12				
12:30		0	2			0	11				
12:45		0	5	0	17	0	10	0	42	0	59
01:00		0	7			0	17				
01:15		0	0			0	11				
01:30		0	3			0	7				
01:45		0	5	0	15	0	24	0	59	0	74
02:00		0	6			0	22				
02:15		0	0			0	35				
02:30		0	4			0	17				
02:45		0	3	0	13	0	17	0	91	0	104
03:00		0	2			0	19				
03:15		0	5			0	13				
03:30		0	3			0	32				
03:45		0	7	0	17	0	24	0	88	0	105
04:00		0	2			0	12				
04:15		0	1			0	19				
04:30		0	0			0	17				
04:45		0	0	0	3	0	18	0	66	0	69
05:00		0	4			0	16				
05:15		5	3			0	26				
05:30		5	5			0	19				
05:45		0	3	10	15	0	18	0	79	10	94
06:00		2	1			1	15				
06:15		4	3			4	19				
06:30		2	1			0	18				
06:45		3	1	11	6	6	12	11	64	22	70
07:00		6	1			17	12				
07:15		1	0			13	24				
07:30		2	0			12	24				
07:45		0	1	9	2	7	6	49	66	58	68
08:00		3	0			12	7				
08:15		4	0			16	0				
08:30		3	0			20	2				
08:45		3	0	13	0	10	0	58	9	71	9
09:00		5	0			4	1				
09:15		4	0			10	0				
09:30		6	0			13	1				
09:45		6	1	21	1	21	0	48	2	69	3
10:00		7	1			24	1				
10:15		6	0			8	0				
10:30		1	0			15	0				
10:45		4	1	18	2	9	0	56	1	74	3
11:00		4	0			22	1				
11:15		5	0			15	0				
11:30		3	0			18	1				
11:45		4	0	16	0	17	0	72	2	88	2
Total		98	91	98	91	294	569	294	569	392	660
Combined Total		189		189		863		863		1052	
AM Peak		09:30				11:00					
Vol.		25				72					
P.H.F.		0.893				0.750					
PM Peak			00:15				01:45				
Vol.			21				98				
P.H.F.			0.750				0.700				
Percentage		51.9%	48.1%			34.1%	65.9%				
ADT/AADT		ADT 1,052		AADT 1,052							

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of San Diego
Enrico Fermi Drive
B/ Otay Mesa Road - Airway Drive
24 Hour Directional Volume Count

SDCEFOMAI
Site Code: 167-10112
Date Start: 26-May-10
Date End: 26-May-10

Start Time	26-May-10 Wed	Northbound Morning	Northbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Southbound Morning	Southbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		3	33			3	**11**				
12:15		0	48			0	**15**				
12:30		2	43			7	**17**				
12:45		2	59	7	183	4	**17**	14	60	21	243
01:00		0	41			0	2				
01:15		1	23			3	20				
01:30		0	26			1	12				
01:45		0	45	1	135	0	15	4	49	5	184
02:00		0	24			1	9				
02:15		2	59			4	8				
02:30		5	47			3	19				
02:45		3	31	10	161	1	11	9	47	19	208
03:00		1	42			2	10				
03:15		0	30			2	10				
03:30		7	29			0	15				
03:45		0	35	8	136	2	11	6	46	14	182
04:00		1	25			1	15				
04:15		2	26			5	5				
04:30		10	35			0	6				
04:45		4	41	17	127	0	24	6	50	23	177
05:00		4	**61**			1	7				
05:15		2	**39**			5	4				
05:30		1	**52**			6	6				
05:45		7	**60**	14	212	2	6	14	23	28	235
06:00		3	32			7	1				
06:15		8	38			5	10				
06:30		**53**	19			6	8				
06:45		**42**	25	106	114	5	8	23	27	129	141
07:00		**43**	19			11	3				
07:15		**53**	22			6	3				
07:30		46	25			4	5				
07:45		26	22	168	88	**6**	3	27	14	195	102
08:00		37	5			**19**	6				
08:15		25	10			**28**	13				
08:30		27	13			**13**	8				
08:45		65	14	154	42	5	11	65	38	219	80
09:00		30	3			12	6				
09:15		31	0			15	4				
09:30		49	3			16	0				
09:45		64	5	174	11	4	3	47	13	221	24
10:00		43	0			22	6				
10:15		35	2			7	2				
10:30		45	2			11	1				
10:45		43	0	166	4	21	6	61	15	227	19
11:00		52	1			13	2				
11:15		**45**	2			13	2				
11:30		50	0			12	5				
11:45		34	2	181	5	15	5	53	14	234	19
Total		1006	1218	1006	1218	329	396	329	396	1335	1614
Combined Total		2224		2224		725		725		2949	
AM Peak		06:30				07:45					
Vol.		191				66					
P.H.F.		0.901				0.589					
PM Peak			05:00				12:00				
Vol.			212				60				
P.H.F.			0.869				0.882				
Percentage		45.2%	54.8%			45.4%	54.6%				
ADT/AADT		ADT 2,949		AADT 2,949							

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of San Diego
Enrico Fermi Drive
B/ Airway Road - Enrico Fermi Place
24 Hour Directional Volume Count

SDCEFAIEF
Site Code: 167-10112
Date Start: 02-Jun-10
Date End: 02-Jun-10

Start Time	02-Jun-10 Wed	Northbound Morning	Northbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Southbound Morning	Southbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		1	62			4	28				
12:15		6	54			3	16				
12:30		3	54			7	20				
12:45		1	65	11	235	0	**19**	14	83	25	318
01:00		1	41			0	**31**				
01:15		2	47			1	**18**				
01:30		1	**80**			3	**36**				
01:45		0	**39**	4	207	0	15	4	100	8	307
02:00		1	**69**			0	15				
02:15		1	**61**			2	29				
02:30		0	60			0	26				
02:45		1	43	3	233	0	24	2	94	5	327
03:00		1	49			3	16				
03:15		2	47			1	36				
03:30		4	38			0	12				
03:45		3	50	10	184	0	23	4	87	14	271
04:00		3	58			2	20				
04:15		2	58			2	22				
04:30		2	52			1	25				
04:45		3	63	10	231	2	16	7	83	17	314
05:00		3	63			4	10				
05:15		4	63			5	8				
05:30		3	52			2	18				
05:45		12	32	22	210	5	16	16	52	38	262
06:00		24	71			0	13				
06:15		37	29			2	13				
06:30		50	44			2	10				
06:45		48	40	159	184	4	21	8	57	167	241
07:00		50	30			10	20				
07:15		54	25			0	8				
07:30		30	17			9	10				
07:45		48	7	182	79	21	3	40	41	222	120
08:00		57	8			31	4				
08:15		**83**	6			18	2				
08:30		**70**	3			14	4				
08:45		**51**	2	261	19	20	2	83	12	344	31
09:00		**70**	2			4	1				
09:15		36	5			22	0				
09:30		70	3			24	3				
09:45		50	2	226	12	16	1	66	5	292	17
10:00		52	0			19	3				
10:15		58	3			21	2				
10:30		59	4			**24**	4				
10:45		55	1	224	8	**25**	0	89	9	313	17
11:00		51	0			**26**	1				
11:15		35	1			**22**	0				
11:30		52	1			24	3				
11:45		63	2	201	4	23	3	95	7	296	11
Total		1313	1606	1313	1606	428	630	428	630	1741	2236
Combined Total		2919		2919		1058		1058		3977	
AM Peak		08:15				10:30					
Vol.		274				97					
P.H.F.		0.825				0.933					
PM Peak			01:30				00:45				
Vol.			249				104				
P.H.F.			0.778				0.722				
Percentage		45.0%	55.0%			40.5%	59.5%				
ADT/AADT		ADT 3,977		AADT 3,977							

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of San Diego
Enrico Fermi Drive
B/Enrico Fermi Place - Siempre Viva Road
24 Hour Directional Volume Count

SDCEFEFSV
Site Code: 167-10112
Date Start: 27-May-10
Date End: 27-May-10

Start Time	27-May-10 Thu	Northbound Morning	Northbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Southbound Morning	Southbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		2	41			1	33				
12:15		0	59			1	21				
12:30		5	62			8	19				
12:45		2	65	9	227	4	**32**	14	105	23	332
01:00		0	67			4	**43**				
01:15		0	**74**			4	**46**				
01:30		2	**69**			1	**32**				
01:45		0	**82**	2	292	3	25	12	146	14	438
02:00		1	**71**			3	14				
02:15		1	57			4	20				
02:30		8	64			1	32				
02:45		3	68	13	260	0	28	8	94	21	354
03:00		2	76			0	29				
03:15		0	65			0	20				
03:30		2	59			0	30				
03:45		0	54	4	254	2	14	2	93	6	347
04:00		0	50			3	19				
04:15		0	40			2	22				
04:30		2	52			1	30				
04:45		3	61	5	203	2	28	8	99	13	302
05:00		3	49			4	19				
05:15		3	54			5	21				
05:30		4	70			2	11				
05:45		0	57	10	230	3	23	14	74	24	304
06:00		3	50			5	32				
06:15		10	62			4	9				
06:30		40	58			7	16				
06:45		62	37	115	207	8	4	24	61	139	268
07:00		45	36			14	14				
07:15		49	27			7	9				
07:30		42	9			9	5				
07:45		66	11	202	83	10	5	40	33	242	116
08:00		47	17			22	7				
08:15		47	5			6	7				
08:30		38	3			34	7				
08:45		69	1	201	26	28	3	90	24	291	50
09:00		44	0			19	3				
09:15		75	1			27	2				
09:30		49	3			12	3				
09:45		50	2	218	6	26	0	84	8	302	14
10:00		**71**	1			23	1				
10:15		**39**	0			21	0				
10:30		**68**	2			27	2				
10:45		**77**	4	255	7	39	2	110	5	365	12
11:00		42	4			**29**	5				
11:15		54	1			**19**	0				
11:30		70	3			**31**	5				
11:45		57	2	223	10	**53**	3	132	13	355	23
Total		1257	1805	1257	1805	538	755	538	755	1795	2560
Combined Total		3062		3062		1293		1293		4355	
AM Peak		10:00				11:00					
Vol.		255				132					
P.H.F.		0.828				0.623					
PM Peak			01:15				00:45				
Vol.			296				153				
P.H.F.			0.902				0.832				
Percentage		41.1%	58.9%			41.6%	58.4%				
ADT/AADT		ADT 4,355		AADT 4,355							

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of San Diego
Enrico Fermi Drive
B/ Siempre Viva Road - Marconi Drive
24 Hour Directional Volume Count

SDCEFSVMA
Site Code: 167-10112
Date Start: 27-May-10
Date End: 27-May-10

Start Time	27-May-10 Thu	Northbound Morning	Northbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Southbound Morning	Southbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		3	75			0	15				
12:15		2	115			1	22				
12:30		7	110			12	21				
12:45		5	143	17	443	3	**31**	16	89	33	532
01:00		0	121			3	**23**				
01:15		0	138			0	**23**				
01:30		0	126			2	**45**				
01:45		0	149	0	534	1	29	6	120	6	654
02:00		0	114			3	14				
02:15		0	115			1	27				
02:30		0	141			1	28				
02:45		2	147	2	517	0	25	5	94	7	611
03:00		1	135			1	25				
03:15		0	156			2	21				
03:30		0	144			1	21				
03:45		1	153	2	588	0	14	4	81	6	669
04:00		0	106			3	27				
04:15		0	117			2	24				
04:30		0	138			1	23				
04:45		0	132	0	493	1	16	7	90	7	583
05:00		2	**163**			2	26				
05:15		4	**148**			0	25				
05:30		0	**148**			3	13				
05:45		1	**157**	7	616	2	21	7	85	14	701
06:00		2	145			2	15				
06:15		53	141			7	12				
06:30		63	139			2	14				
06:45		81	125	199	550	8	11	19	52	218	602
07:00		87	150			4	2				
07:15		105	73			9	0				
07:30		88	54			6	1				
07:45		76	28	356	305	9	3	28	6	384	311
08:00		47	11			8	2				
08:15		91	17			14	5				
08:30		144	8			21	1				
08:45		118	0	400	36	24	2	67	10	467	46
09:00		**168**	0			27	0				
09:15		**143**	1			19	1				
09:30		**156**	1			17	4				
09:45		**138**	1	605	3	18	2	81	7	686	10
10:00		102	1			**31**	7				
10:15		89	1			**22**	2				
10:30		117	6			**31**	2				
10:45		129	0	437	8	**21**	1	105	12	542	20
11:00		95	0			16	0				
11:15		84	0			18	0				
11:30		116	1			15	0				
11:45		109	0	404	1	21	4	70	4	474	5
Total		2429	4094	2429	4094	415	650	415	650	2844	4744
Combined Total		6523		6523		1065		1065		7588	
AM Peak		09:00				10:00					
Vol.		605				105					
P.H.F.		0.900				0.847					
PM Peak			05:00				00:45				
Vol.			616				122				
P.H.F.			0.945				0.678				
Percentage		37.2%	62.8%			39.0%	61.0%				
ADT/AADT		ADT 7,588		AADT 7,588							

Counts Unlimtied, Inc.
25286 Jaclyn Avenue
Moreno Valley, CA 92507
(951) 485-7934

City of San Diego
Alta Road
B/ Donovan State - Calizada de la Fuente
24 Hour Directional Volume Count

SDC003
Site Code: 167-10100
Date Start: 06-May-10
Date End: 06-May-10

Start Time	06-May-10 Thu	Northbound Morning	Northbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Southbound Morning	Southbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		1	30			4	28				
12:15		4	26			5	26				
12:30		12	30			13	24				
12:45		3	26	20	112	5	29	27	107	47	219
01:00		3	34			8	42				
01:15		4	**69**			2	43				
01:30		1	**84**			0	38				
01:45		3	**55**	11	242	4	89	14	212	25	454
02:00		1	**36**			5	**113**				
02:15		3	34			0	**122**				
02:30		5	33			1	**111**				
02:45		7	35	16	138	0	**94**	6	440	22	578
03:00		4	17			0	98				
03:15		8	8			0	74				
03:30		5	15			5	109				
03:45		17	15	34	55	9	105	14	386	48	441
04:00		6	15			1	113				
04:15		10	13			10	71				
04:30		9	12			4	94				
04:45		10	20	35	60	1	51	16	329	51	389
05:00		27	13			6	58				
05:15		69	22			4	36				
05:30		**158**	29			5	31				
05:45		**177**	18	431	82	12	22	27	147	458	229
06:00		**85**	7			**38**	21				
06:15		**88**	6			**43**	29				
06:30		119	8			**48**	48				
06:45		176	6	468	27	**16**	11	145	109	613	136
07:00		105	14			14	16				
07:15		83	9			9	16				
07:30		117	11			28	22				
07:45		154	6	459	40	35	20	86	74	545	114
08:00		65	4			15	18				
08:15		56	12			28	8				
08:30		49	10			11	8				
08:45		26	15	196	41	22	18	76	52	272	93
09:00		26	5			15	8				
09:15		28	24			17	9				
09:30		26	47			25	21				
09:45		28	22	108	98	15	56	72	94	180	192
10:00		28	19			20	90				
10:15		20	7			23	57				
10:30		32	18			25	35				
10:45		30	16	110	60	37	5	105	187	215	247
11:00		26	5			33	7				
11:15		17	5			26	6				
11:30		32	2			27	35				
11:45		30	3	105	15	37	14	123	62	228	77
Total		1993	970	1993	970	711	2199	711	2199	2704	3169
Combined Total		2963		2963		2910		2910		5873	
AM Peak		05:30				06:00					
Vol.		508				145					
P.H.F.		0.718				0.755					
PM Peak			01:15				02:00				
Vol.			244				440				
P.H.F.			0.726				0.902				
Percentage		67.3%	32.7%			24.4%	75.6%				
ADT/AADT		ADT 5,873		AADT 5,873							

Counts Unlimtied, Inc.
25286 Jaclyn Avenue
Moreno Valley, CA 92507
(951) 485-7934

City of San Diego
Alta Road
B/ Calizada de la Fuente - Paseo Fuente
24 Hour Directional Volume Count

SDC004
Site Code: 167-10100
Date Start: 06-May-10
Date End: 06-May-10

Start Time	06-May-10 Thu	Northbound Morning	Northbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Southbound Morning	Southbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		1	31			4	31				
12:15		4	26			5	22				
12:30		12	28			13	26				
12:45		3	26	20	111	6	32	28	111	48	222
01:00		4	35			7	40				
01:15		3	**68**			2	45				
01:30		1	**83**			0	39				
01:45		3	**55**	11	241	4	91	13	215	24	456
02:00		2	**36**			5	**118**				
02:15		3	34			0	**119**				
02:30		5	30			1	**112**				
02:45		7	35	17	135	0	**96**	6	445	23	580
03:00		4	19			0	97				
03:15		8	7			0	77				
03:30		5	13			5	109				
03:45		17	18	34	57	9	108	14	391	48	448
04:00		6	13			1	119				
04:15		9	14			10	62				
04:30		10	12			4	90				
04:45		10	20	35	59	1	59	16	330	51	389
05:00		27	13			6	56				
05:15		71	21			4	35				
05:30		**160**	29			5	33				
05:45		**171**	18	429	81	12	21	27	145	456	226
06:00		**86**	7			**42**	24				
06:15		**91**	7			**45**	36				
06:30		115	10			**47**	42				
06:45		176	5	468	29	**16**	10	150	112	618	141
07:00		109	13			16	17				
07:15		81	9			9	15				
07:30		117	11			30	23				
07:45		162	6	469	39	34	21	89	76	558	115
08:00		59	4			14	16				
08:15		54	11			29	9				
08:30		48	10			16	8				
08:45		27	15	188	40	18	19	77	52	265	92
09:00		27	5			16	8				
09:15		27	24			20	9				
09:30		25	47			22	20				
09:45		28	22	107	98	16	59	74	96	181	194
10:00		26	19			19	98				
10:15		20	6			24	47				
10:30		33	18			24	37				
10:45		30	16	109	59	39	3	106	185	215	244
11:00		26	5			34	7				
11:15		16	3			20	6				
11:30		30	2			26	39				
11:45		29	4	101	14	38	11	118	63	219	77
Total		1988	963	1988	963	718	2221	718	2221	2706	3184
Combined Total		2951		2951		2939		2939		5890	
AM Peak		05:30				06:00					
Vol.		508				150					
P.H.F.		0.743				0.798					
PM Peak			01:15				02:00				
Vol.			242				445				
P.H.F.			0.729				0.935				
Percentage		67.4%	32.6%			24.4%	75.6%				
ADT/AADT		ADT 5,890		AADT 5,890							

Counts Unlimtied, Inc.
25286 Jaclyn Avenue
Moreno Valley, CA 92507
(951) 485-7934

City of San Diego
Alta Road
B/ Paseo de la Fuente - Otay Mesa Road
24 Hour Directional Volume Count

SDC005
Site Code: 167-10100
Date Start: 06-May-10
Date End: 06-May-10

Start Time	06-May-10 Thu	Northbound Morning	Northbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Southbound Morning	Southbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		1	30			4	33				
12:15		4	24			4	25				
12:30		13	29			15	23				
12:45		2	28	20	111	5	33	28	114	48	225
01:00		4	**37**			8	41				
01:15		4	**72**			3	47				
01:30		2	**86**			0	43				
01:45		2	**54**	12	249	4	92	15	223	27	472
02:00		1	36			5	**120**				
02:15		4	38			0	**121**				
02:30		4	30			1	**116**				
02:45		7	36	16	140	0	**95**	6	452	22	592
03:00		4	16			0	101				
03:15		8	13			0	74				
03:30		5	12			5	119				
03:45		18	15	35	56	8	105	13	399	48	455
04:00		7	13			2	119				
04:15		10	14			11	68				
04:30		9	13			4	94				
04:45		10	21	36	61	1	59	18	340	54	401
05:00		29	14			6	61				
05:15		82	24			5	36				
05:30		**163**	30			6	33				
05:45		**178**	19	452	87	**17**	27	34	157	486	244
06:00		**84**	7			**38**	25				
06:15		**93**	7			**45**	30				
06:30		113	9			**51**	53				
06:45		182	8	472	31	15	12	149	120	621	151
07:00		113	12			15	19				
07:15		83	12			15	15				
07:30		128	9			31	24				
07:45		157	6	481	39	33	23	94	81	575	120
08:00		55	4			15	18				
08:15		56	12			30	9				
08:30		56	10			15	6				
08:45		26	15	193	41	24	20	84	53	277	94
09:00		27	5			14	9				
09:15		24	25			24	7				
09:30		27	46			24	22				
09:45		31	22	109	98	19	53	81	91	190	189
10:00		27	19			19	94				
10:15		20	7			24	59				
10:30		34	18			24	34				
10:45		30	16	111	60	38	7	105	194	216	254
11:00		25	5			30	7				
11:15		16	4			29	6				
11:30		31	3			28	35				
11:45		29	4	101	16	30	14	117	62	218	78
Total		2038	989	2038	989	744	2286	744	2286	2782	3275
Combined Total		3027		3027		3030		3030		6057	
AM Peak		05:30				05:45					
Vol.		518				151					
P.H.F.		0.728				0.740					
PM Peak			01:00				02:00				
Vol.			249				452				
P.H.F.			0.724				0.934				
Percentage		67.3%	32.7%			24.6%	75.4%				
ADT/AADT		ADT 6,057		AADT 6,057							

2008 Counts

MetroCount Traffic Executive
Event Counts

EventCount-423 -- English (ENU)

Datasets:

Site:	**[8021.14] AIRWAY RD (PASEO DE LAS AMERICAS-SANYO AVE) EASTBOUND**
Input A:	2 - East bound. - Added to totals. (1)
Input B:	0 - Unused or unknown. - Excluded from totals. (0)
Survey Duration:	21:37 Wednesday, March 05, 2008 => 12:12 Friday, March 07, 2008
File:	C:\Users\Gus\True Count\Projects\8021 DA OTAY\8021.14.E07Mar2008.EC0 (Regular)
Identifier:	T5441WJP MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm:	Event Count
Data type:	Axle sensors - Separate (Count)

Profile:

Filter time:	**0:00 Thursday, March 06, 2008 => 0:00 Friday, March 07, 2008**
Name:	TC Default Profile
Scheme:	Count events divided by two.
Units:	Non metric (ft, mi, ft/s, mph, lb, ton)
In profile:	Events = 2224 / 3233 (68.79%)

*** Thursday, March 06, 2008=2224, 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	
24	**3**	**1**	**14**	**11**	**41**	**69**	**122**	**185**	**219**	**178**	**215**	**166**	**190**	**207**	**178**	**91**	**92**	**47**	**37**	**48**	**45**	**19**	**22**	
0	1	0	1	0	7	6	21	51	52	**58**	76	48	45	53	72	13	27	18	19	2	21	4	5	-
3	2	0	10	2	8	12	27	45	**61**	46	29	38	36	60	41	37	24	12	9	9	9	4	2	-
14	0	1	1	7	4	14	33	50	**68**	32	57	44	47	43	33	19	19	9	3	25	11	5	11	-
7	0	0	2	2	22	37	41	39	**38**	42	53	36	62	51	32	22	22	8	6	12	4	6	4	-

AM Peak 0915 - 1015 (225), AM PHF=0.83

MetroCount Traffic Executive
Event Counts

EventCount-424 -- English (ENU)

Datasets:

Site:	**[8021.14] AIRWAY RD (PASEO DE LAS AMERICAS-SANYO AVE) WESTBOUND**
Input A:	4 - West bound. - Added to totals. (1)
Input B:	0 - Unused or unknown. - Excluded from totals. (0)
Survey Duration:	21:34 Wednesday, March 05, 2008 => 12:13 Friday, March 07, 2008
File:	C:\Users\Gus\True Count\Projects\8021 DA OTAY\8021.14.W07Mar2008.EC0 (Regular)
Identifier:	T575QTP3 MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm:	Event Count
Data type:	Axle sensors - Separate (Count)

Profile:

Filter time:	**0:00 Thursday, March 06, 2008 => 0:00 Friday, March 07, 2008**
Name:	TC Default Profile
Scheme:	Count events divided by two.
Units:	Non metric (ft, mi, ft/s, mph, lb, ton)
In profile:	Events = 3425 / 4711 (72.70%)

*** Thursday, March 06, 2008=3425, 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	
8	**1**	**1**	**5**	**12**	**26**	**111**	**168**	**226**	**270**	**268**	**291**	**322**	**291**	**293**	**257**	**208**	**296**	**151**	**135**	**46**	**20**	**9**	**10**	
1	1	0	3	3	1	6	33	53	53	82	72	**73**	84	61	64	51	92	60	54	12	3	4	6	-
0	0	0	2	2	6	19	35	52	68	59	80	**75**	65	77	63	48	66	51	31	18	7	3	1	-
3	0	1	0	7	13	37	57	65	70	67	63	**79**	78	89	61	59	68	25	34	10	7	2	1	-
4	0	0	0	0	6	49	43	56	79	60	**76**	95	64	66	69	50	70	15	16	6	3	0	2	-

AM Peak 1145 - 1245 (303), AM PHF=0.96

MetroCount Traffic Executive
Event Counts

EventCount-421 -- English (ENU)

Datasets:

Site:	**[8021.13] AIRWAY RD (MICHAEL FARADAY DR-P. DE LAS AMERICAS) EASTBOUND**
Input A:	2 - East bound. - Added to totals. (1)
Input B:	0 - Unused or unknown. - Excluded from totals. (0)
Survey Duration:	21:05 Wednesday, March 05, 2008 => 12:11 Friday, March 07, 2008
File:	C:\Users\Gus\True Count\Projects\8021 DA OTAY\8021.13.E07Mar2008.EC0 (Regular)
Identifier:	S014F2C9 MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm:	Event Count
Data type:	Axle sensors - Separate (Count)

Profile:

Filter time:	**0:00 Thursday, March 06, 2008 => 0:00 Friday, March 07, 2008**
Name:	TC Default Profile
Scheme:	Count events divided by two.
Units:	Non metric (ft, mi, ft/s, mph, lb, ton)
In profile:	Events = 1938 / 2809 (68.99%)

*** Thursday, March 06, 2008=1937, 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	
11	**13**	**4**	**10**	**16**	**41**	**76**	**108**	**170**	**191**	**168**	**168**	**170**	**160**	**183**	**144**	**83**	**90**	**34**	**34**	**25**	**15**	**12**	**11**	
0	0	0	4	3	7	14	16	41	42	**47**	47	32	32	40	54	18	30	5	12	7	5	2	5	-
2	13	3	3	2	3	12	19	38	45	**48**	30	52	23	54	34	29	23	11	9	3	2	3	1	-
6	0	1	1	9	6	16	29	47	**55**	37	55	45	36	48	27	11	18	10	10	13	4	1	3	-
3	0	0	2	2	25	34	44	44	**49**	36	36	41	69	41	29	25	19	8	3	2	4	6	2	-

AM Peak 0930 - 1030 (199), AM PHF=0.90

MetroCount Traffic Executive
Event Counts

EventCount-422 -- English (ENU)

Datasets:

Site:	**[8021.13] AIRWAY RD (MICHAEL FARADAY DR-P. DE LAS AMERICAS) WESTBOUND**
Input A:	4 - West bound. - Added to totals. (1)
Input B:	0 - Unused or unknown. - Excluded from totals. (0)
Survey Duration:	21:07 Wednesday, March 05, 2008 => 12:10 Friday, March 07, 2008
File:	C:\Users\Gus\True Count\Projects\8021 DA OTAY\8021.13.W07Mar2008.EC0 (Regular)
Identifier:	S1079HQH MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm:	Event Count
Data type:	Axle sensors - Separate (Count)

Profile:

Filter time:	**0:00 Thursday, March 06, 2008 => 0:00 Friday, March 07, 2008**
Name:	TC Default Profile
Scheme:	Count events divided by two.
Units:	Non metric (ft, mi, ft/s, mph, lb, ton)
In profile:	Events = 2596 / 3503 (74.11%)

*** Thursday, March 06, 2008=2596, 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	
1	**0**	**0**	**4**	**3**	**6**	**111**	**154**	**165**	**230**	**216**	**238**	**258**	**199**	**218**	**193**	**158**	**217**	**102**	**89**	**17**	**11**	**3**	**3**	
0	0	0	4	0	0	1	38	30	48	**57**	62	60	59	46	50	31	67	46	39	4	0	2	3	-
0	0	0	0	0	0	18	36	40	48	**52**	65	53	51	60	48	43	52	32	20	11	3	0	0	-
1	0	0	0	3	4	51	43	46	**58**	58	54	65	54	68	41	51	55	20	19	1	7	1	0	-
0	0	0	0	0	2	41	37	49	**76**	49	57	80	35	44	54	33	43	4	11	1	1	0	0	-

AM Peak 0930 - 1030 (243), AM PHF=0.80

MetroCount Traffic Executive
Event Counts

EventCount-419 -- English (ENU)

Datasets:

Site:	**[8021.12] AIRWAY RD (ENRICO FERMI DR-MICHAEL FARADAY DR) EASTBOUND**
Input A:	2 - East bound. - Added to totals. (1)
Input B:	0 - Unused or unknown. - Excluded from totals. (0)
Survey Duration:	20:48 Wednesday, March 05, 2008 => 12:09 Friday, March 07, 2008
File:	C:\Users\Gus\True Count\Projects\8021 DA OTAY\8021.12.E07Mar2008.EC0 (Regular)
Identifier:	T54701F7 MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm:	Event Count
Data type:	Axle sensors - Separate (Count)

Profile:

Filter time:	**0:00 Thursday, March 06, 2008 => 0:00 Friday, March 07, 2008**
Name:	TC Default Profile
Scheme:	Count events divided by two.
Units:	Non metric (ft, mi, ft/s, mph, lb, ton)
In profile:	Events = 574 / 1324 (43.35%)

*** Thursday, March 06, 2008=574, 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	
4	**0**	**2**	**5**	**9**	**25**	**41**	**54**	**53**	**49**	**47**	**45**	**36**	**31**	**47**	**30**	**21**	**17**	**11**	**11**	**9**	**10**	**8**	**9**	
0	0	0	1	0	5	4	16	15	8	**20**	12	6	10	9	12	3	8	3	7	1	1	1	5	-
1	0	0	2	2	4	8	11	7	**13**	10	11	13	5	14	5	9	2	3	3	0	2	0	0	-
1	0	2	1	4	6	14	10	19	**13**	9	9	3	8	13	8	4	4	1	1	4	5	1	4	-
2	0	0	1	3	10	15	17	12	**15**	8	13	14	8	11	5	5	3	4	0	4	2	6	0	-

AM Peak 0915 - 1015 (61), AM PHF=0.76

MetroCount Traffic Executive
Event Counts

EventCount-420 -- English (ENU)

Datasets:

Site:	**[8021.12] AIRWAY RD (ENRICO FERMI DR-MICHAEL FARADAY DR) WESTBOUND**
Input A:	4 - West bound. - Added to totals. (1)
Input B:	0 - Unused or unknown. - Excluded from totals. (0)
Survey Duration:	20:38 Wednesday, March 05, 2008 => 12:08 Friday, March 07, 2008
File:	C:\Users\Gus\True Count\Projects\8021 DA OTAY\8021.12.W07Mar2008.EC0 (Regular)
Identifier:	T5450FAN MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm:	Event Count
Data type:	Axle sensors - Separate (Count)

Profile:

Filter time:	**0:00 Thursday, March 06, 2008 => 0:00 Friday, March 07, 2008**
Name:	TC Default Profile
Scheme:	Count events divided by two.
Units:	Non metric (ft, mi, ft/s, mph, lb, ton)
In profile:	Events = 2344 / 3535 (66.31%)

*** Thursday, March 06, 2008=2344, 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	
1	**0**	**0**	**4**	**0**	**3**	**129**	**161**	**175**	**205**	**194**	**219**	**231**	**169**	**173**	**157**	**143**	**154**	**106**	**95**	**14**	**5**	**3**	**3**	
0	0	0	0	0	0	4	34	30	39	**49**	63	45	56	43	45	28	48	41	35	4	0	2	2	-
0	0	0	4	0	0	32	31	57	48	**57**	61	55	46	37	37	33	35	33	17	9	2	0	0	-
1	0	0	0	0	2	43	50	38	**57**	50	40	54	38	52	32	46	48	19	27	0	0	1	1	-
0	0	0	0	0	1	50	46	50	**61**	38	55	77	29	41	43	36	23	13	16	1	3	0	0	-

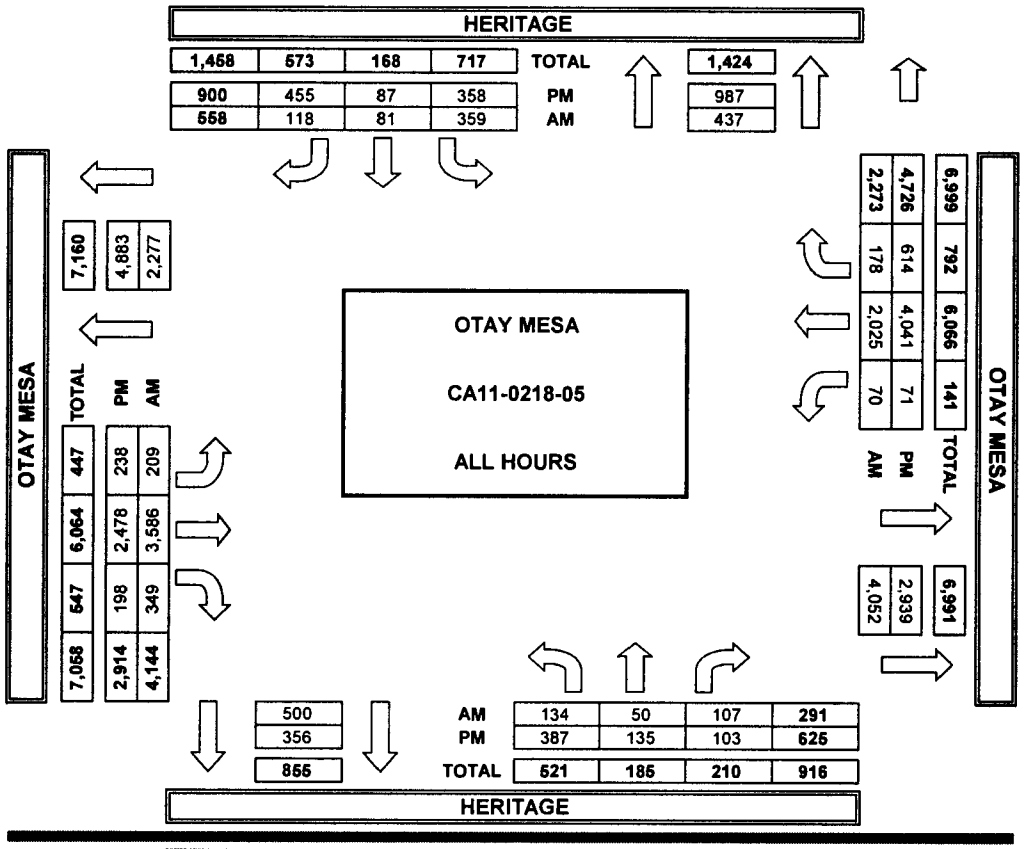
AM Peak 0930 - 1030 (224), AM PHF=0.92

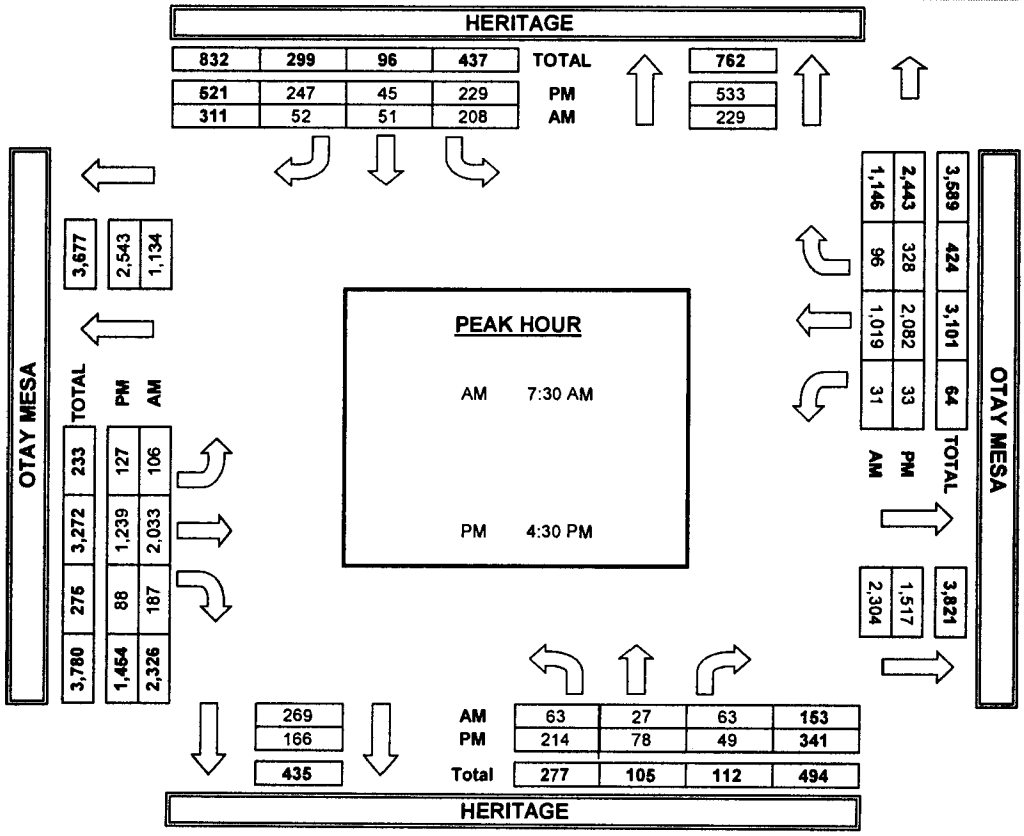
AM/PM Peak Hour Traffic Counts

2011 Counts

PACIFIC TRAFFIC DATA SERVICES

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: PACIFIC TRAFFIC DATA SERVICES

DATE:	LOCATION:	OTAY MESA	PROJECT #:	CA11-0218-05
2/15/11	NORTH & SOUTH:	HERITAGE	LOCATION #:	1
TUESDAY	EAST & WEST:	OTAY MESA	CONTROL:	SIGNAL

NOTES:

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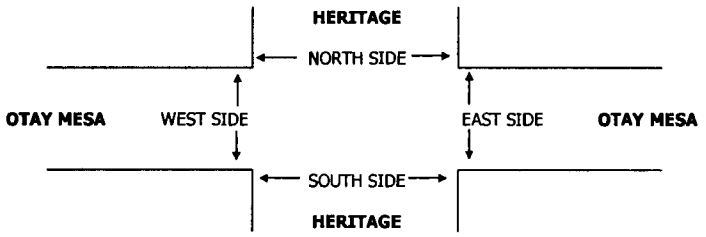
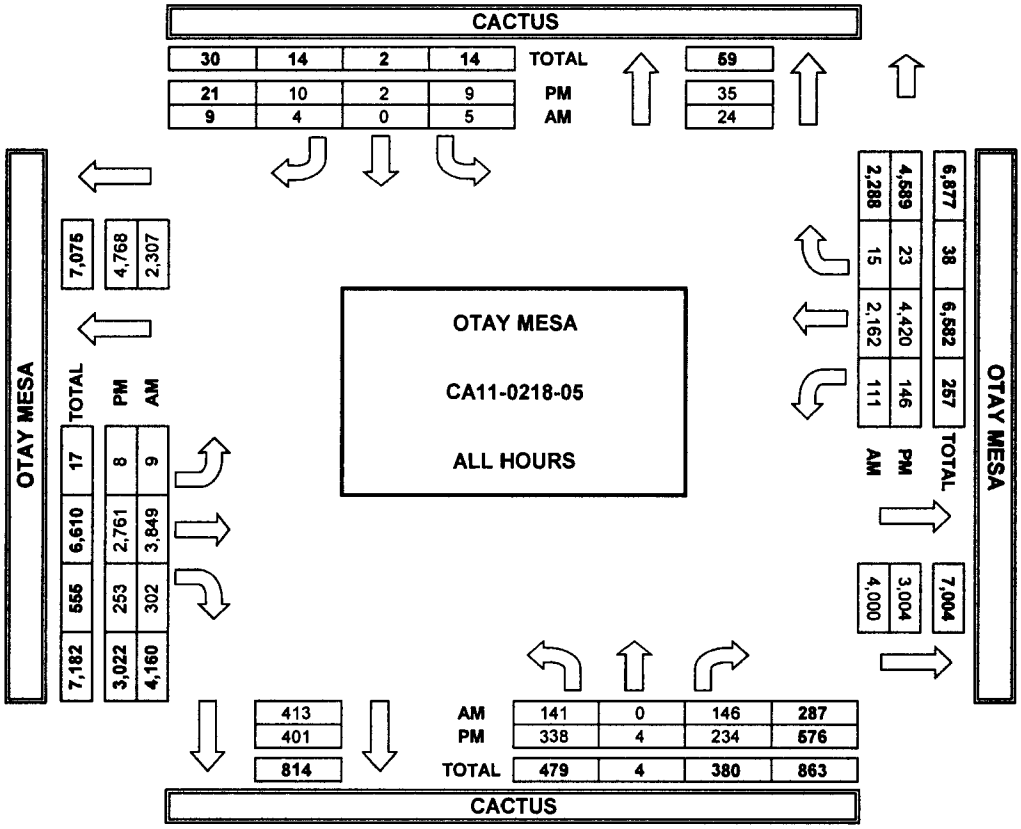
		NORTHBOUND HERITAGE			SOUTHBOUND HERITAGE			EASTBOUND OTAY MESA			WESTBOUND OTAY MESA				U-TURNS				
	LANES:	NL 1	NT 1	NR 0	SL 1	ST 1	SR 1	EL 2	ET 3	ER 1	WL 2	WT 3	WR 1	TOTAL	NB X	SB X	EB X	WB X	TTL
AM	7:00 AM	10	5	10	27	5	11	9	390	35	10	260	16	788					0
	7:15 AM	20	6	11	41	8	10	9	419	42	11	241	20	838					0
	7:30 AM	13	7	19	55	7	9	15	465	47	9	250	20	916					0
	7:45 AM	15	12	21	69	28	15	23	635	64	7	284	27	1,200					0
	8:00 AM	14	3	12	48	8	13	27	515	40	6	262	27	975					0
	8:15 AM	21	5	11	36	8	15	41	418	36	9	223	22	845					0
	8:30 AM	16	9	13	46	6	13	35	343	39	9	259	16	804					0
	8:45 AM	25	3	10	37	11	32	50	401	46	9	246	30	900					0
	VOLUMES	134	50	107	359	81	118	209	3,586	349	70	2,025	178	7,266	0	0	0	0	0
	APPROACH %	46%	17%	37%	64%	15%	21%	5%	87%	8%	3%	89%	8%						
	APP/DEPART	291	/	437	558	/	500	4,144	/	4,052	2,273	/	2,277	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	63	27	63	208	51	52	106	2,033	187	31	1,019	96	3,936					
	APPROACH %	41%	18%	41%	67%	16%	17%	5%	87%	8%	3%	89%	8%						
	PEAK HR FACTOR		0.797			0.694			0.805			0.901		0.820					
	APP/DEPART	153	/	229	311	/	269	2,326	/	2,304	1,146	/	1,134	0					
PM	4:00 PM	40	20	12	33	12	62	36	330	26	13	498	81	1,163					0
	4:15 PM	58	14	11	35	11	41	42	329	31	7	552	76	1,207					0
	4:30 PM	64	12	13	53	9	39	34	339	20	4	496	83	1,166					0
	4:45 PM	35	25	11	48	9	61	35	295	19	11	564	78	1,191					0
	5:00 PM	65	18	9	67	13	77	20	290	25	7	471	73	1,135					0
	5:15 PM	50	23	16	61	14	70	38	315	24	11	551	94	1,267					0
	5:30 PM	47	12	15	36	11	52	21	288	28	10	513	90	1,123					0
	5:45 PM	28	11	16	25	8	53	12	292	25	8	396	39	913					0
	VOLUMES	387	135	103	358	87	455	238	2,478	198	71	4,041	614	9,165	0	0	0	0	0
	APPROACH %	62%	22%	16%	40%	10%	51%	8%	85%	7%	2%	86%	13%						
	APP/DEPART	625	/	987	900	/	356	2,914	/	2,939	4,726	/	4,883	0					
	BEGIN PEAK HR		4:30 PM																
	VOLUMES	214	78	49	229	45	247	127	1,239	88	33	2,082	328	4,759					
	APPROACH %	63%	23%	14%	44%	9%	47%	9%	85%	6%	1%	85%	13%						
	PEAK HR FACTOR		0.927			0.830			0.925			0.931		0.939					
	APP/DEPART	341	/	533	521	/	166	1,454	/	1,517	2,443	/	2,543	0					

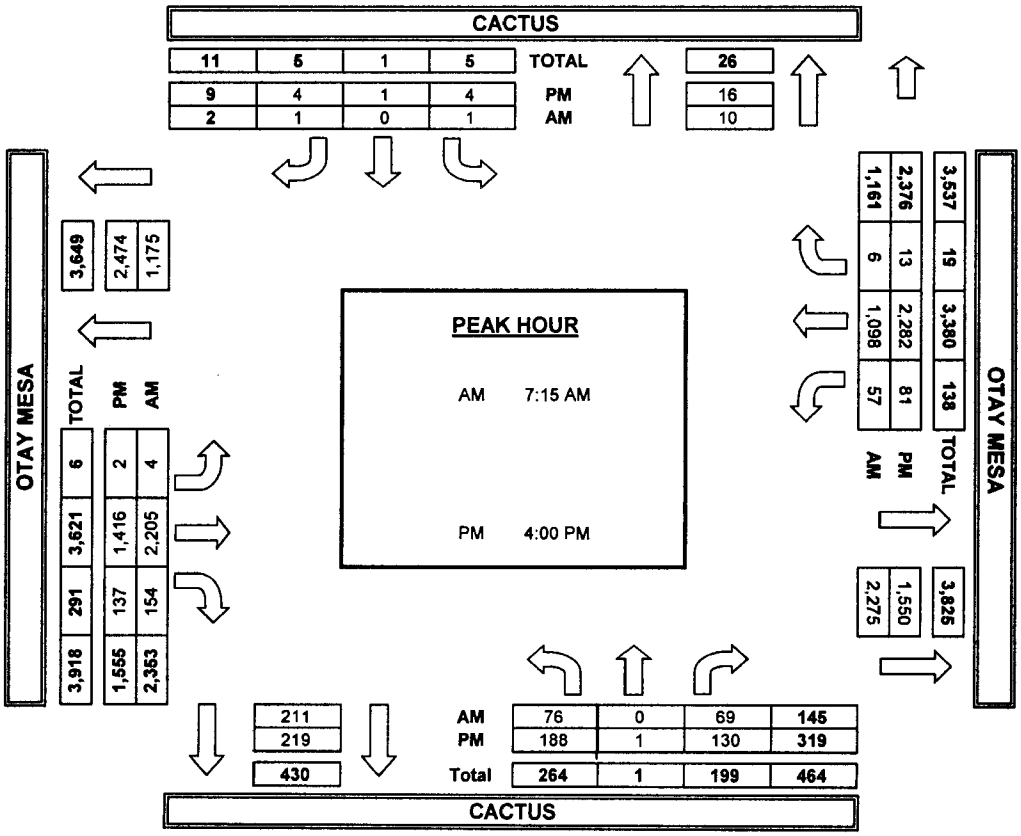


		PEDESTRIAN CROSSINGS					PEDESTRIAN ACTIVATIONS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM					0					0					0
	7:15 AM					0					0					0
	7:30 AM					0					0					0
	7:45 AM					0					0					0
	8:00 AM					0					0					0
	8:15 AM					0					0					0
	8:30 AM					0					0					0
	8:45 AM					0					0					0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM					0					0					0
	4:15 PM					0					0					0
	4:30 PM					0					0					0
	4:45 PM					0					0					0
	5:00 PM					0					0					0
	5:15 PM					0					0					0
	5:30 PM					0					0					0
	5:45 PM					0					0					0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PACIFIC TRAFFIC DATA SERVICES

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: PACIFIC TRAFFIC DATA SERVICES

DATE:	LOCATION:	OTAY MESA	PROJECT #:	CA11-0218-05
2/15/11	NORTH & SOUTH:	CACTUS	LOCATION #:	2
TUESDAY	EAST & WEST:	OTAY MESA	CONTROL:	SIGNAL

NOTES:

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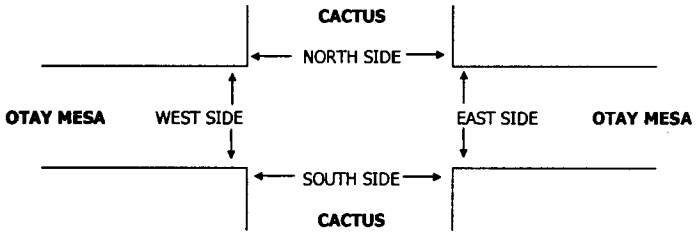
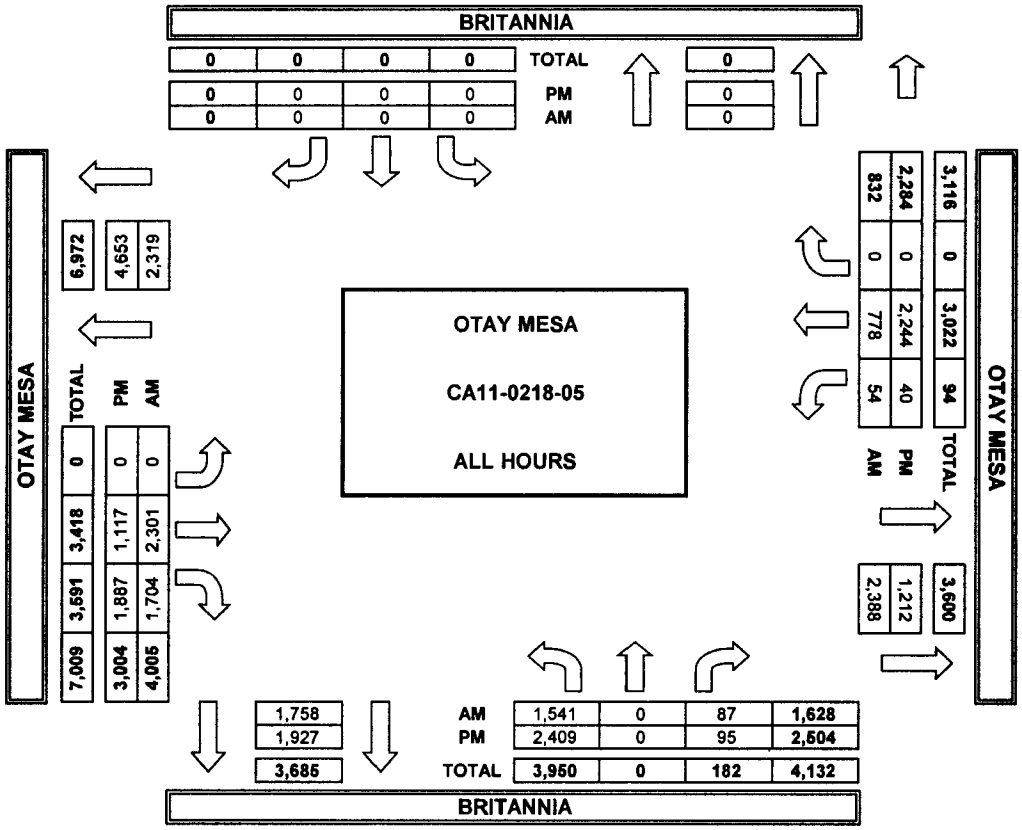
		NORTHBOUND CACTUS			SOUTHBOUND CACTUS			EASTBOUND OTAY MESA			WESTBOUND OTAY MESA				U-TURNS				
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB	TTL
	LANES:	1	1	0	0	1	0	2	2.5	0.5	2	3	0		X	X	X	X	
AM	7:00 AM	11	0	17	2	0	1	0	391	37	9	281	4	753					0
AM	7:15 AM	19	0	16	0	0	0	0	457	32	8	261	0	793					0
AM	7:30 AM	18	0	12	0	0	1	2	472	33	17	258	3	816					0
AM	7:45 AM	20	0	23	1	0	0	0	719	38	19	315	2	1,137					0
AM	8:00 AM	19	0	18	0	0	0	2	557	51	13	264	1	925					0
AM	8:15 AM	17	0	20	0	0	2	2	437	33	13	236	5	765					0
AM	8:30 AM	19	0	20	1	0	0	1	372	38	15	267	0	733					0
AM	8:45 AM	18	0	20	1	0	0	2	444	40	17	280	0	822					0
AM	VOLUMES	141	0	146	5	0	4	9	3,849	302	111	2,162	15	6,744	0	0	0	0	0
AM	APPROACH %	49%	0%	51%	56%	0%	44%	0%	93%	7%	5%	94%	1%						
AM	APP/DEPART	287	/	24	9	/	413	4,160	/	4,000	2,288	/	2,307	0					
AM	BEGIN PEAK HR		7:15 AM																
AM	VOLUMES	76	0	69	1	0	1	4	2,205	154	57	1,098	6	3,671					
AM	APPROACH %	52%	0%	48%	50%	0%	50%	0%	93%	7%	5%	95%	1%						
AM	PEAK HR FACTOR		0.843			0.500			0.780			0.864		0.807					
AM	APP/DEPART	145	/	10	2	/	211	2,363	/	2,275	1,161	/	1,175	0					
PM	4:00 PM	61	1	31	2	0	1	1	321	37	16	519	2	992					0
PM	4:15 PM	51	0	30	1	0	1	0	377	32	23	597	4	1,116					0
PM	4:30 PM	32	0	35	0	0	0	1	366	33	26	529	1	1,023					0
PM	4:45 PM	44	0	34	1	1	2	0	352	35	16	637	6	1,128					0
PM	5:00 PM	42	0	29	1	0	2	1	313	27	23	522	3	963					0
PM	5:15 PM	43	3	33	1	0	2	4	368	31	13	638	4	1,140					0
PM	5:30 PM	31	0	21	1	1	1	0	332	31	13	550	2	983					0
PM	5:45 PM	34	0	21	2	0	1	1	332	27	16	428	1	863					0
PM	VOLUMES	338	4	234	9	2	10	8	2,761	253	146	4,420	23	8,208	0	0	0	0	0
PM	APPROACH %	59%	1%	41%	43%	10%	48%	0%	91%	8%	3%	96%	1%						
PM	APP/DEPART	576	/	35	21	/	401	3,022	/	3,004	4,589	/	4,768	0					
PM	BEGIN PEAK HR		4:00 PM																
PM	VOLUMES	188	1	130	4	1	4	2	1,416	137	81	2,282	13	4,259					
PM	APPROACH %	59%	0%	41%	44%	11%	44%	0%	91%	9%	3%	96%	1%						
PM	PEAK HR FACTOR		0.858			0.563			0.950			0.901		0.944					
PM	APP/DEPART	319	/	16	9	/	219	1,555	/	1,550	2,376	/	2,474	0					

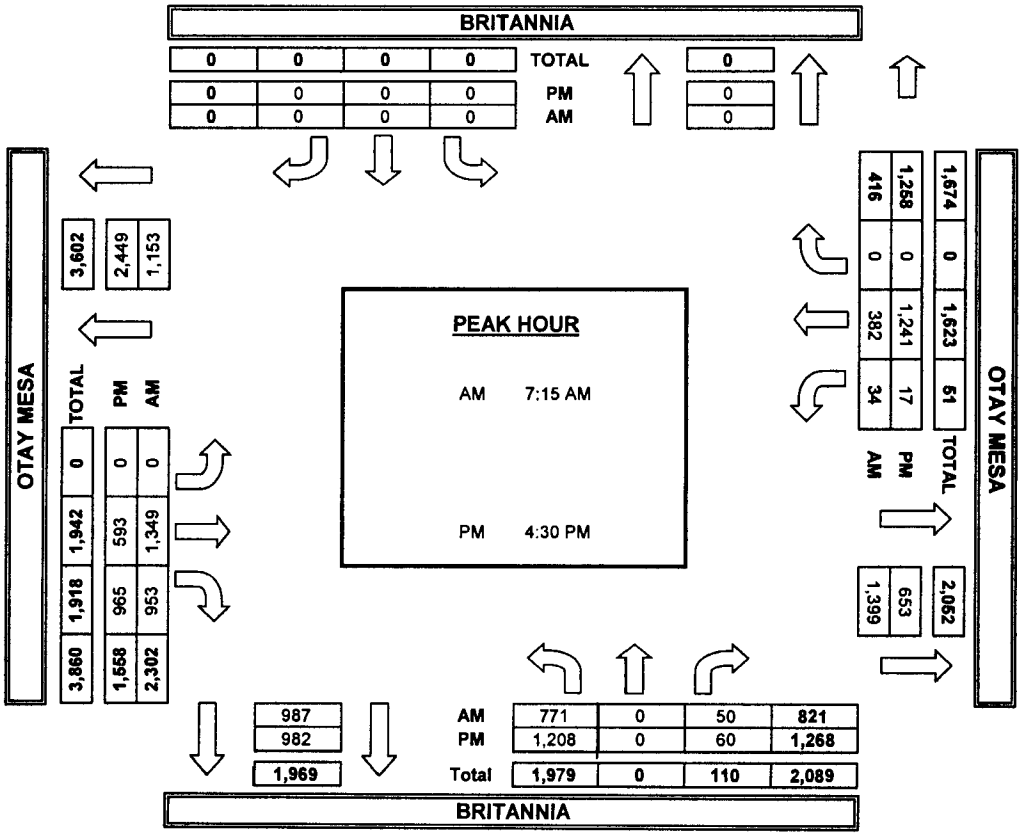


		PEDESTRIAN CROSSINGS					PEDESTRIAN ACTIVATIONS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM					0					0					0
AM	7:15 AM					0					0					0
AM	7:30 AM					0					0					0
AM	7:45 AM					0					0					0
AM	8:00 AM					0					0					0
AM	8:15 AM					0					0					0
AM	8:30 AM					0					0					0
AM	8:45 AM					0					0					0
AM	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM					0					0					0
PM	4:15 PM					0					0					0
PM	4:30 PM					0					0					0
PM	4:45 PM					0					0					0
PM	5:00 PM					0					0					0
PM	5:15 PM					0					0					0
PM	5:30 PM					0					0					0
PM	5:45 PM					0					0					0
PM	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PACIFIC TRAFFIC DATA SERVICES

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: PACIFIC TRAFFIC DATA SERVICES

DATE:	LOCATION:	OTAY MESA	PROJECT #:	CA11-0218-05
2/15/11	NORTH & SOUTH:	BRITANNIA	LOCATION #:	3
TUESDAY	EAST & WEST:	OTAY MESA	CONTROL:	SIGNAL

NOTES:

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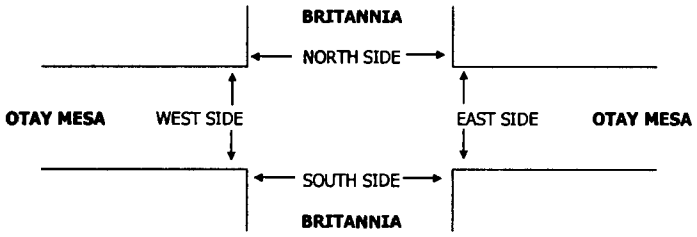
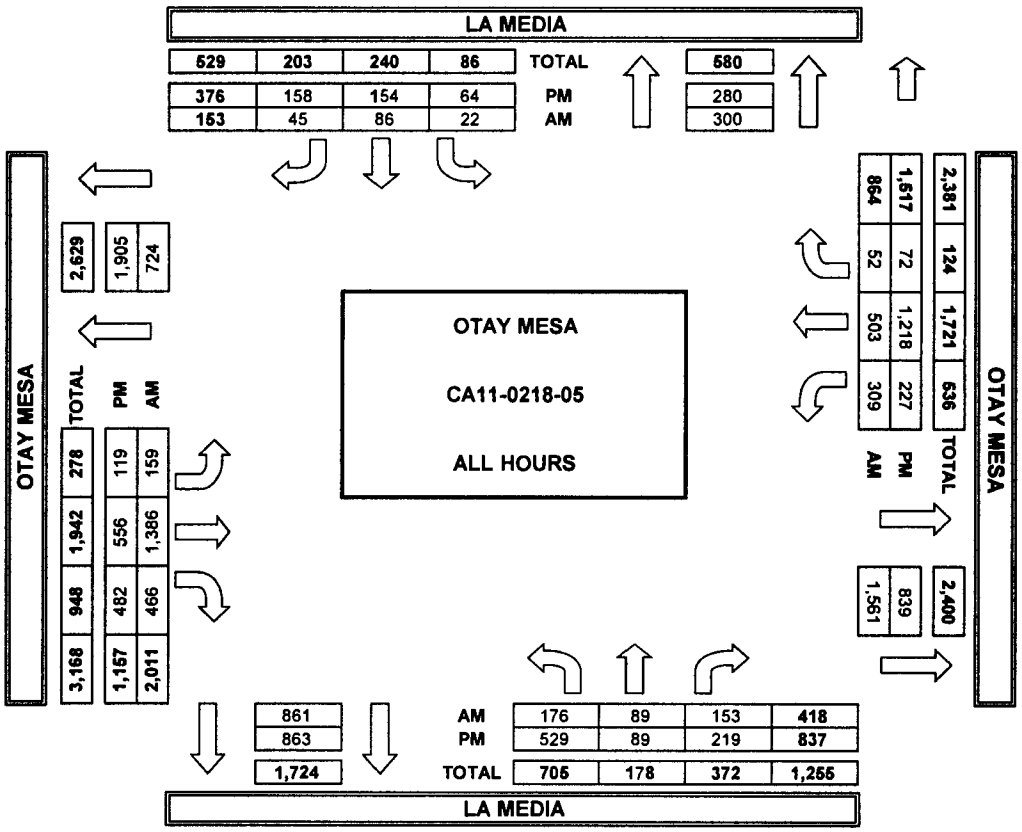
		NORTHBOUND BRITANNIA			SOUTHBOUND BRITANNIA			EASTBOUND OTAY MESA			WESTBOUND OTAY MESA				U-TURNS				
	LANES:	NL 2	NT X	NR 1	SL X	ST X	SR X	EL X	ET 3	ER 1	WL 2	WT 3	WR X	TOTAL	NB X	SB X	EB X	WB X	TTL
AM	7:00 AM	204		10					229	156	5	100		704					0
	7:15 AM	196		9					279	199	4	88		775					0
	7:30 AM	188		17					290	240	11	124		870					0
	7:45 AM	197		14					444	308	15	99		1,077					0
	8:00 AM	190		10					336	206	4	71		817					0
	8:15 AM	181		5					236	211	5	90		728					0
	8:30 AM	202		8					249	178	5	106		748					0
	8:45 AM	183		14					238	206	5	100		746					0
	VOLUMES	1,541	0	87	0	0	0	0	2,301	1,704	54	778	0	6,465	0	0	0	0	0
	APPROACH %	95%	0%	5%	0%	0%	0%	0%	57%	43%	6%	94%	0%						
	APP/DEPART	1,628	/	0	0	/	1,758	4,005	/	2,388	832	/	2,319	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	771	0	50	0	0	0	0	1,349	953	34	382	0	3,539					
	APPROACH %	94%	0%	6%	0%	0%	0%	0%	59%	41%	8%	92%	0%						
	PEAK HR FACTOR		0.973			0.000			0.765			0.770		0.821					
	APP/DEPART	821	/	0	0	/	987	2,302	/	1,399	416	/	1,153	0					
PM	4:00 PM	305		11					134	251	8	244		953					0
	4:15 PM	332		12					152	238	2	267		1,003					0
	4:30 PM	304		15					175	243	3	290		1,030					0
	4:45 PM	313		18					145	223	4	331		1,034					0
	5:00 PM	281		15					137	221	4	305		963					0
	5:15 PM	310		12					136	278	6	315		1,057					0
	5:30 PM	271		4					117	218	7	289		906					0
	5:45 PM	293		8					121	215	6	203		846					0
	VOLUMES	2,409	0	95	0	0	0	0	1,117	1,887	40	2,244	0	7,792	0	0	0	0	0
	APPROACH %	96%	0%	4%	0%	0%	0%	0%	37%	63%	2%	98%	0%						
	APP/DEPART	2,504	/	0	0	/	1,927	3,004	/	1,212	2,284	/	4,653	0					
	BEGIN PEAK HR		4:30 PM																
	VOLUMES	1,208	0	60	0	0	0	0	593	965	17	1,241	0	4,084					
	APPROACH %	95%	0%	5%	0%	0%	0%	0%	38%	62%	1%	99%	0%						
	PEAK HR FACTOR		0.958			0.000			0.932			0.939		0.966					
	APP/DEPART	1,268	/	0	0	/	982	1,558	/	653	1,258	/	2,449	0					

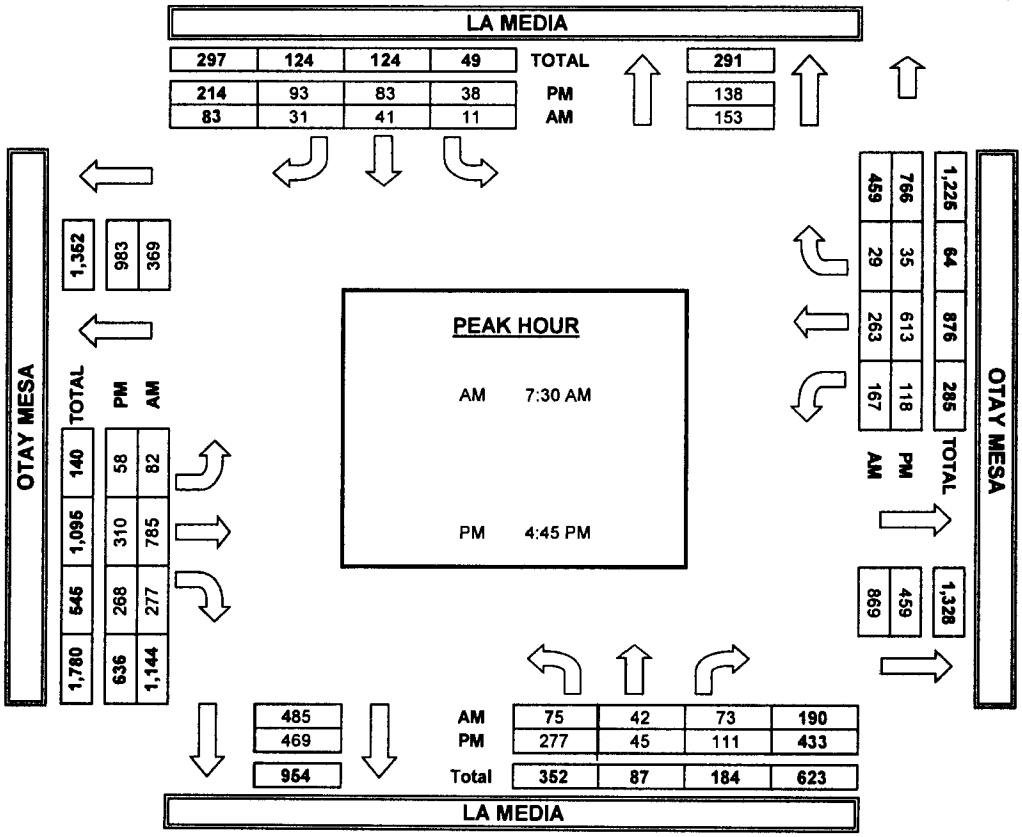


		PEDESTRIAN CROSSINGS					PEDESTRIAN ACTIVATIONS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM					0					0					0
	7:15 AM					0					0					0
	7:30 AM					0					0					0
	7:45 AM					0					0					0
	8:00 AM					0					0					0
	8:15 AM					0					0					0
	8:30 AM					0					0					0
	8:45 AM					0					0					0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM					0					0					0
	4:15 PM					0					0					0
	4:30 PM					0					0					0
	4:45 PM					0					0					0
	5:00 PM					0					0					0
	5:15 PM					0					0					0
	5:30 PM					0					0					0
	5:45 PM					0					0					0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PACIFIC TRAFFIC DATA SERVICES

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: PACIFIC TRAFFIC DATA SERVICES

DATE:	LOCATION:	OTAY MESA	PROJECT #:	CA11-0218-05
2/15/11	NORTH & SOUTH:	LA MEDIA	LOCATION #:	4
TUESDAY	EAST & WEST:	OTAY MESA	CONTROL:	SIGNAL

NOTES:

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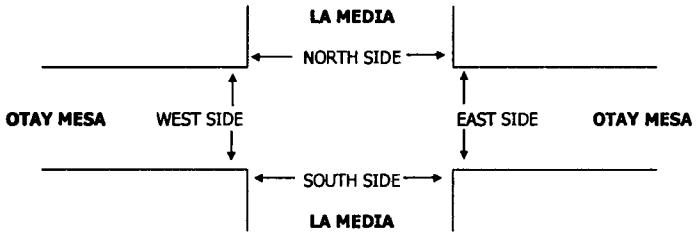
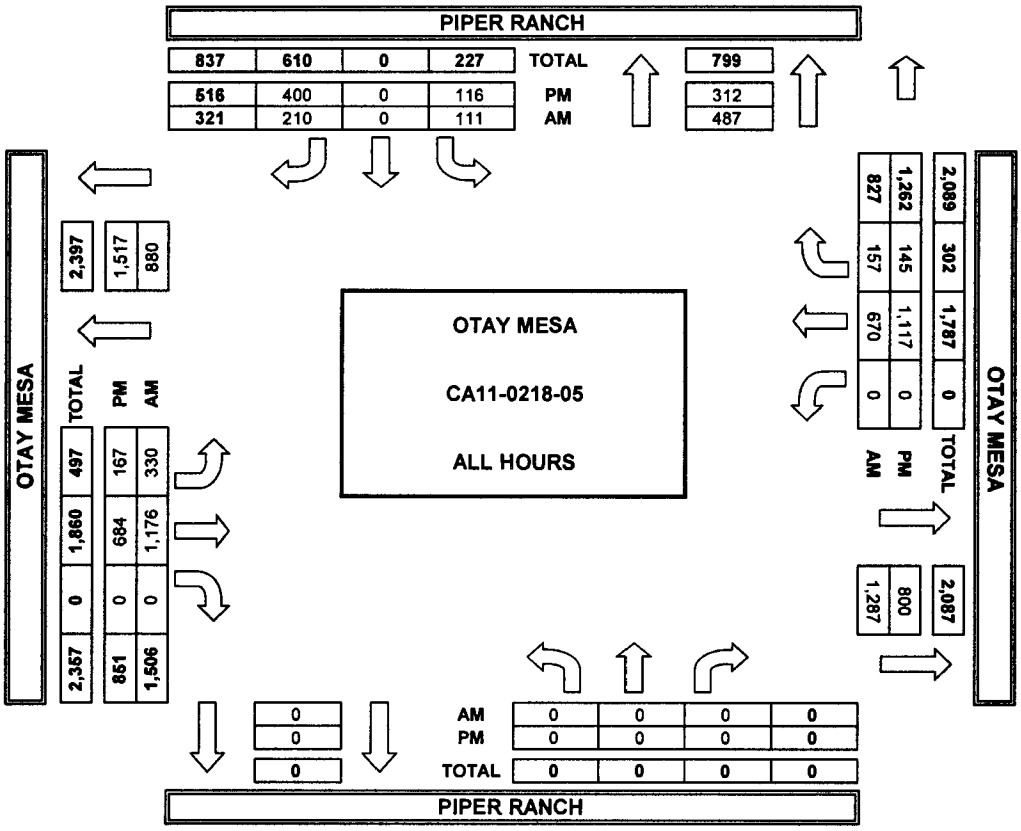
		NORTHBOUND LA MEDIA			SOUTHBOUND LA MEDIA			EASTBOUND OTAY MESA			WESTBOUND OTAY MESA				U-TURNS				
	LANES:	NL 1	NT 1	NR 0	SL 1	ST 1	SR 0	EL 1	ET 3	ER 1	WL 1	WT 3	WR 0	TOTAL	NB X	SB X	EB X	WB X	TTL
AM	7:00 AM	22	11	23	2	4	3	24	179	44	40	51	9	412					0
	7:15 AM	14	11	22	1	12	5	16	157	36	29	59	3	365					0
	7:30 AM	19	8	19	4	3	8	14	188	37	34	60	8	402					0
	7:45 AM	20	13	16	1	8	6	22	223	80	37	104	8	538					0
	8:00 AM	19	10	14	3	15	10	27	219	80	58	57	8	520					0
	8:15 AM	17	11	24	3	15	7	19	155	80	38	42	5	416					0
	8:30 AM	35	14	12	7	11	1	19	122	62	32	63	8	386					0
	8:45 AM	30	11	23	1	18	5	18	143	47	41	67	3	407					0
	VOLUMES	176	89	153	22	86	45	159	1,386	466	309	503	52	3,446	0	0	0	0	0
	APPROACH %	42%	21%	37%	14%	56%	29%	8%	69%	23%	36%	58%	6%						
	APP/DEPART	418	/	300	153	/	861	2,011	/	1,561	864	/	724	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	75	42	73	11	41	31	82	785	277	167	263	29	1,876					
	APPROACH %	39%	22%	38%	13%	49%	37%	7%	69%	24%	36%	57%	6%						
	PEAK HR FACTOR		0.913			0.741			0.877			0.770		0.872					
	APP/DEPART	190	/	153	83	/	485	1,144	/	869	459	/	369	0					
PM	4:00 PM	53	10	18	9	19	13	10	72	48	31	172	8	463					0
	4:15 PM	74	13	36	7	15	19	15	54	68	23	209	10	543					0
	4:30 PM	64	13	27	5	17	16	21	61	53	33	123	12	445					0
	4:45 PM	57	10	22	16	16	22	11	83	68	26	197	11	539					0
	5:00 PM	53	8	18	6	14	14	15	83	76	35	151	4	477					0
	5:15 PM	91	9	39	6	27	24	15	81	64	35	166	12	569					0
	5:30 PM	76	18	32	10	26	33	17	63	60	22	99	8	464					0
	5:45 PM	61	8	27	5	20	17	15	59	45	22	101	7	387					0
	VOLUMES	529	89	219	64	154	158	119	556	482	227	1,218	72	3,887	0	0	0	0	0
	APPROACH %	63%	11%	26%	17%	41%	42%	10%	48%	42%	15%	80%	5%						
	APP/DEPART	837	/	280	376	/	863	1,157	/	839	1,517	/	1,905	0					
	BEGIN PEAK HR		4:45 PM																
	VOLUMES	277	45	111	38	83	93	58	310	268	118	613	35	2,049					
	APPROACH %	64%	10%	26%	18%	39%	43%	9%	49%	42%	15%	80%	5%						
	PEAK HR FACTOR		0.779			0.775			0.914			0.818		0.900					
	APP/DEPART	433	/	138	214	/	469	636	/	459	766	/	983	0					

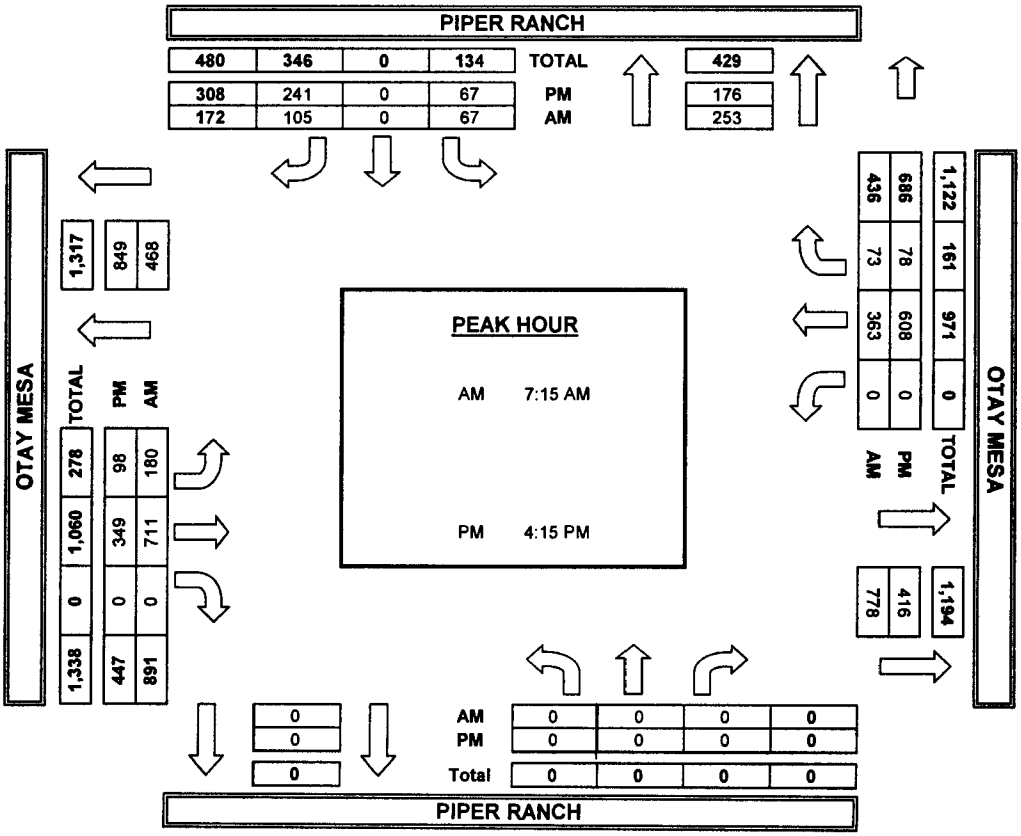


		PEDESTRIAN CROSSINGS					PEDESTRIAN ACTIVATIONS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM					0					0					0
	7:15 AM					0					0					0
	7:30 AM					0					0					0
	7:45 AM					0					0					0
	8:00 AM					0					0					0
	8:15 AM					0					0					0
	8:30 AM					0					0					0
	8:45 AM					0					0					0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM					0					0					0
	4:15 PM					0					0					0
	4:30 PM					0					0					0
	4:45 PM					0					0					0
	5:00 PM					0					0					0
	5:15 PM					0					0					0
	5:30 PM					0					0					0
	5:45 PM					0					0					0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PACIFIC TRAFFIC DATA SERVICES

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: PACIFIC TRAFFIC DATA SERVICES

DATE:	LOCATION:	OTAY MESA	PROJECT #:	CA11-0218-05
2/15/11	NORTH & SOUTH:	PIPER RANCH	LOCATION #:	5
TUESDAY	EAST & WEST:	OTAY MESA	CONTROL:	SIGNAL

NOTES:

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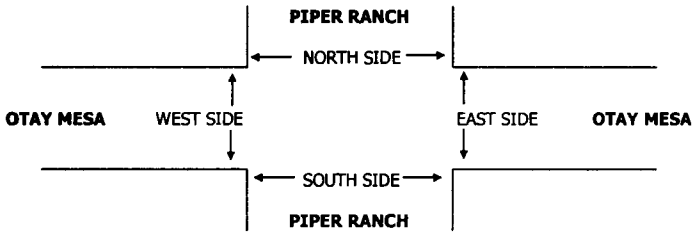
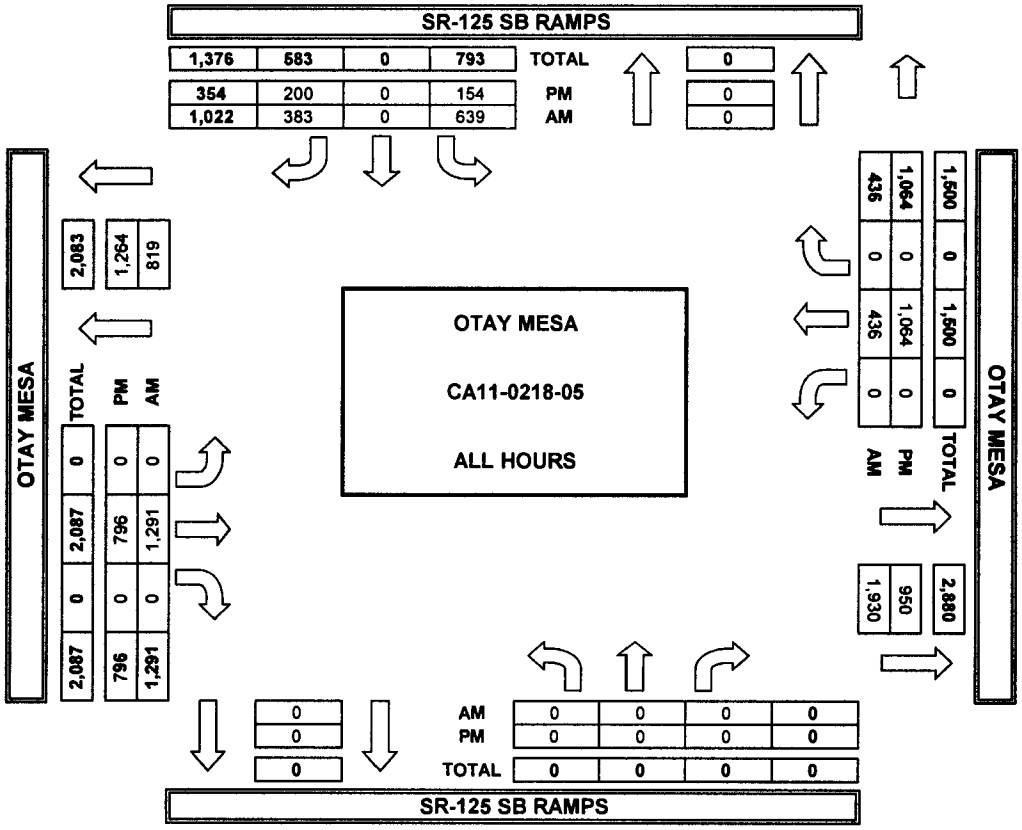
		NORTHBOUND PIPER RANCH			SOUTHBOUND PIPER RANCH			EASTBOUND OTAY MESA			WESTBOUND OTAY MESA				U-TURNS				
	LANES:	NL X	NT X	NR X	SL 1	ST X	SR 1	EL 1	ET 3	ER X	WL X	WT 3	WR 1	TOTAL	NB X	SB X	EB X	WB X	TTL
AM	7:00 AM				12		26	47	126			66	20	297					0
	7:15 AM				12		32	25	172			69	19	329					0
	7:30 AM				31		36	39	207			100	20	433					0
	7:45 AM				13		20	60	169			115	18	395					0
	8:00 AM				11		17	56	163			79	16	342					0
	8:15 AM				8		25	40	102			78	27	280					0
	8:30 AM				13		29	26	119			83	19	289					0
	8:45 AM				11		25	37	118			80	18	289					0
	VOLUMES	0	0	0	111	0	210	330	1,176	0	0	670	157	2,654	0	0	0	0	0
	APPROACH %	0%	0%	0%	35%	0%	65%	22%	78%	0%	0%	81%	19%						
	APP/DEPART	0	/	487	321	/	0	1,506	/	1,287	827	/	880	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	0	0	0	67	0	105	180	711	0	0	363	73	1,499					
	APPROACH %	0%	0%	0%	39%	0%	61%	20%	80%	0%	0%	83%	17%						
	PEAK HR FACTOR		0.000			0.642			0.905			0.820		0.865					
	APP/DEPART	0	/	253	172	/	0	891	/	778	436	/	468	0					
PM	4:00 PM				12		46	18	65			161	25	327					0
	4:15 PM				8		41	25	73			190	27	364					0
	4:30 PM				21		64	26	102			135	14	362					0
	4:45 PM				10		43	26	90			172	23	364					0
	5:00 PM				28		93	21	84			111	14	351					0
	5:15 PM				12		42	24	96			168	14	356					0
	5:30 PM				12		34	17	90			102	15	270					0
	5:45 PM				13		37	10	84			78	13	235					0
	VOLUMES	0	0	0	116	0	400	167	684	0	0	1,117	145	2,629	0	0	0	0	0
	APPROACH %	0%	0%	0%	22%	0%	78%	20%	80%	0%	0%	89%	11%						
	APP/DEPART	0	/	312	516	/	0	851	/	800	1,262	/	1,517	0					
	BEGIN PEAK HR		4:15 PM																
	VOLUMES	0	0	0	67	0	241	98	349	0	0	608	78	1,441					
	APPROACH %	0%	0%	0%	22%	0%	78%	22%	78%	0%	0%	89%	11%						
	PEAK HR FACTOR		0.000			0.636			0.873			0.790		0.990					
	APP/DEPART	0	/	176	308	/	0	447	/	416	686	/	849	0					

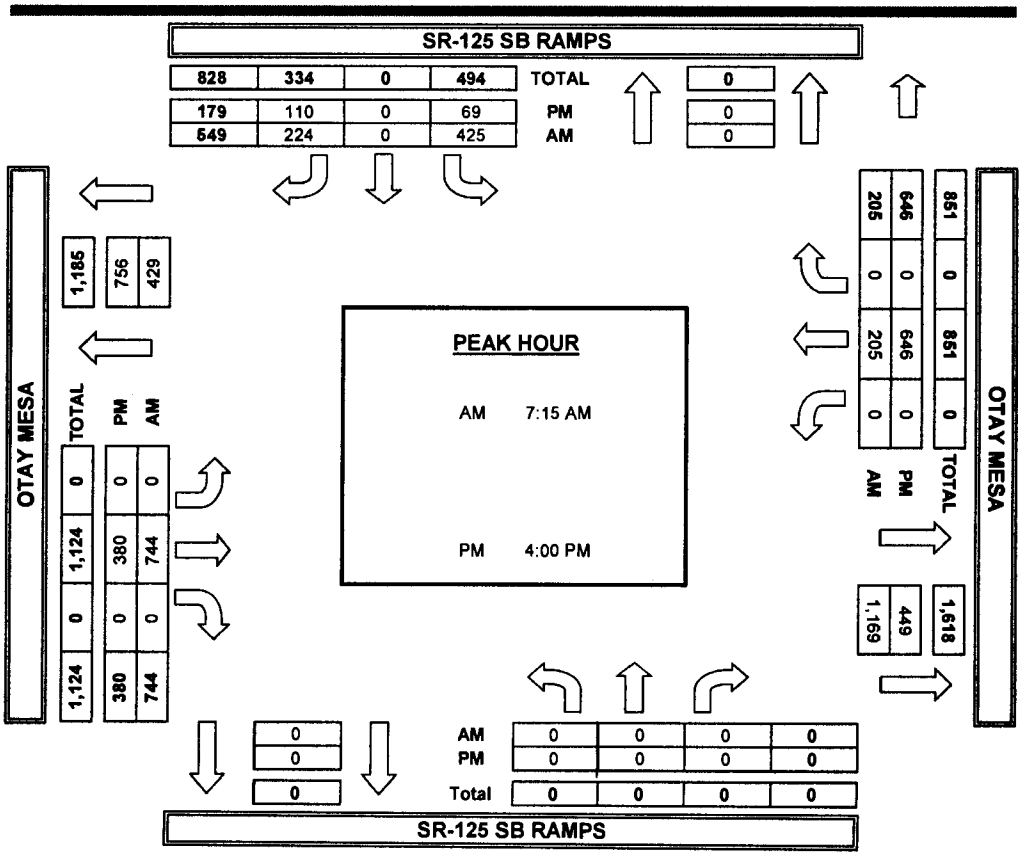


		PEDESTRIAN CROSSINGS					PEDESTRIAN ACTIVATIONS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM					0					0					0
	7:15 AM					0					0					0
	7:30 AM					0					0					0
	7:45 AM					0					0					0
	8:00 AM					0					0					0
	8:15 AM					0					0					0
	8:30 AM					0					0					0
	8:45 AM					0					0					0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM					0					0					0
	4:15 PM					0					0					0
	4:30 PM					0					0					0
	4:45 PM					0					0					0
	5:00 PM					0					0					0
	5:15 PM					0					0					0
	5:30 PM					0					0					0
	5:45 PM					0					0					0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PACIFIC TRAFFIC DATA SERVICES

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: PACIFIC TRAFFIC DATA SERVICES

DATE:	LOCATION:	OTAY MESA	PROJECT #:	CA11-0218-05
2/15/11	NORTH & SOUTH:	SR-125 SB RAMPS	LOCATION #:	6
TUESDAY	EAST & WEST:	OTAY MESA	CONTROL:	SIGNAL

NOTES:

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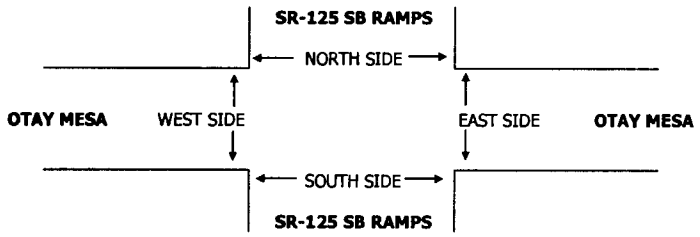
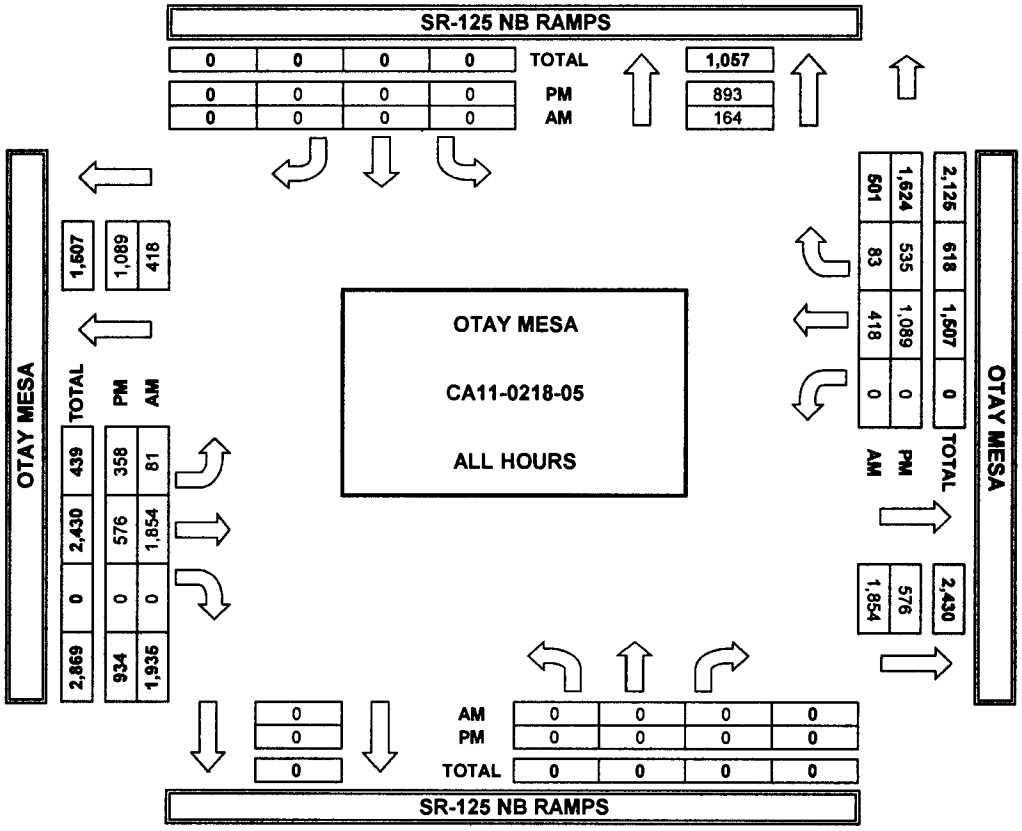
		NORTHBOUND SR-125 SB RAMPS			SOUTHBOUND SR-125 SB RAMPS			EASTBOUND OTAY MESA			WESTBOUND OTAY MESA				U-TURNS				
	LANES:	NL X	NT X	NR X	SL 1	ST X	SR 1	EL 1	ET 3	ER X	WL X	WT 3	WR 1	TOTAL	NB X	SB X	EB X	WB X	TTL
AM	7:00 AM				55		39		157			47		298					0
	7:15 AM				89		43		167			42		341					0
	7:30 AM				130		43		211			78		462					0
	7:45 AM				132		81		213			52		478					0
	8:00 AM				74		57		153			33		317					0
	8:15 AM				57		46		125			61		289					0
	8:30 AM				53		40		121			65		279					0
	8:45 AM				49		34		144			58		285					0
	VOLUMES	0	0	0	639	0	383	0	1,291	0	0	436	0	2,749	0	0	0	0	0
	APPROACH %	0%	0%	0%	63%	0%	37%	0%	100%	0%	0%	100%	0%						
	APP/DEPART	0	/	0	1,022	/	0	1,291	/	1,930	436	/	819	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	0	0	0	425	0	224	0	744	0	0	205	0	1,598					
	APPROACH %	0%	0%	0%	65%	0%	35%	0%	100%	0%	0%	100%	0%						
	PEAK HR FACTOR		0.000			0.762			0.873			0.657		0.836					
	APP/DEPART	0	/	0	649	/	0	744	/	1,169	205	/	429	0					
PM	4:00 PM				19		28		77			162		286					0
	4:15 PM				15		32		85			208		340					0
	4:30 PM				20		26		119			141		306					0
	4:45 PM				15		24		99			135		273					0
	5:00 PM				15		18		113			109		255					0
	5:15 PM				23		19		108			151		301					0
	5:30 PM				29		32		100			87		248					0
	5:45 PM				18		21		95			71		205					0
	VOLUMES	0	0	0	154	0	200	0	796	0	0	1,064	0	2,214	0	0	0	0	0
	APPROACH %	0%	0%	0%	44%	0%	56%	0%	100%	0%	0%	100%	0%						
	APP/DEPART	0	/	0	354	/	0	796	/	950	1,064	/	1,264	0					
	BEGIN PEAK HR		4:00 PM																
	VOLUMES	0	0	0	69	0	110	0	380	0	0	646	0	1,205					
	APPROACH %	0%	0%	0%	39%	0%	61%	0%	100%	0%	0%	100%	0%						
	PEAK HR FACTOR		0.000			0.952			0.798			0.776		0.886					
	APP/DEPART	0	/	0	179	/	0	380	/	449	646	/	756	0					

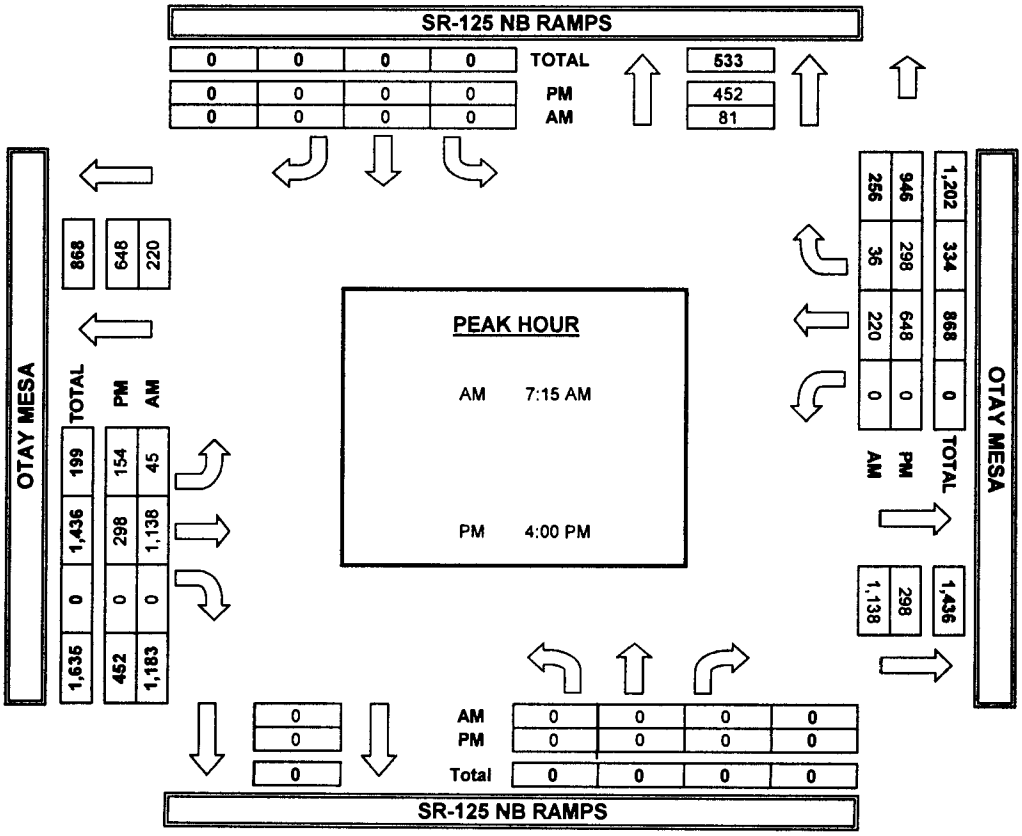


		PEDESTRIAN CROSSINGS					PEDESTRIAN ACTIVATIONS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM					0					0					0
	7:15 AM					0					0					0
	7:30 AM					0					0					0
	7:45 AM					0					0					0
	8:00 AM					0					0					0
	8:15 AM					0					0					0
	8:30 AM					0					0					0
	8:45 AM					0					0					0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM					0					0					0
	4:15 PM					0					0					0
	4:30 PM					0					0					0
	4:45 PM					0					0					0
	5:00 PM					0					0					0
	5:15 PM					0					0					0
	5:30 PM					0					0					0
	5:45 PM					0					0					0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PACIFIC TRAFFIC DATA SERVICES

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: PACIFIC TRAFFIC DATA SERVICES

DATE:	LOCATION:	OTAY MESA	PROJECT #:	CA11-0218-05
2/15/11	NORTH & SOUTH:	SR-125 NB RAMPS	LOCATION #:	7
TUESDAY	EAST & WEST:	OTAY MESA	CONTROL:	SIGNAL

NOTES:

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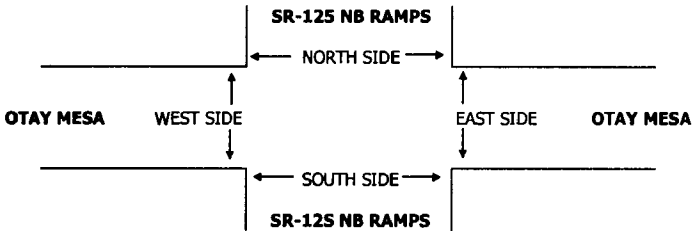
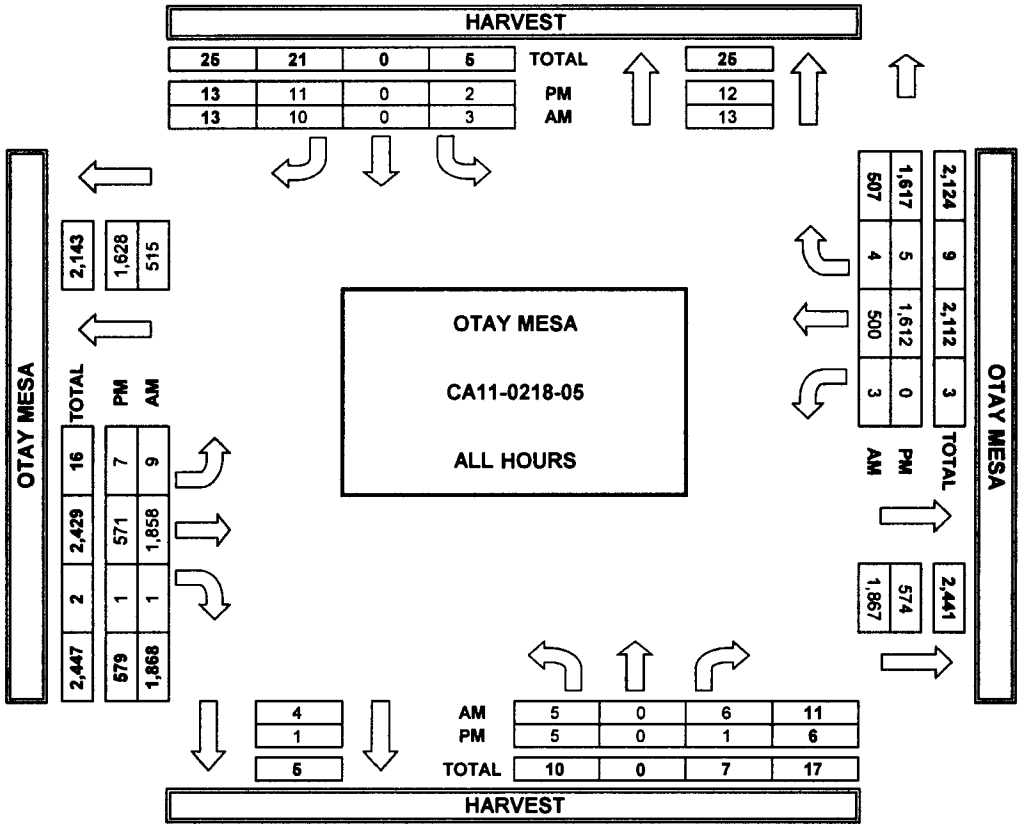
		NORTHBOUND SR-125 NB RAMPS			SOUTHBOUND SR-125 NB RAMPS			EASTBOUND OTAY MESA			WESTBOUND OTAY MESA				U-TURNS				
	LANES:	NL X	NT X	NR X	SL X	ST X	SR X	EL 1	ET 3	ER X	WL X	WT 3	WR 2	TOTAL	NB X	SB X	EB X	WB X	TTL
AM	7:00 AM							11	218			44	7	280					0
	7:15 AM							13	229			40	8	290					0
	7:30 AM							10	315			72	11	408					0
	7:45 AM							13	352			68	11	444					0
	8:00 AM							9	242			40	6	297					0
	8:15 AM							10	162			46	13	231					0
	8:30 AM							7	172			57	15	251					0
	8:45 AM							8	164			51	12	235					0
	VOLUMES	0	0	0	0	0	0	81	1,854	0	0	418	83	2,436	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	4%	96%	0%	0%	83%	17%						
	APP/DEPART	0	/	164	0	/	0	1,935	/	1,854	501	/	418	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	0	0	0	0	0	0	45	1,138	0	0	220	36	1,439					
	APPROACH %	0%	0%	0%	0%	0%	0%	4%	96%	0%	0%	86%	14%						
	PEAK HR FACTOR		0.000			0.000			0.810			0.771		0.810					
	APP/DEPART	0	/	81	0	/	0	1,183	/	1,138	256	/	220	0					
PM	4:00 PM							24	78			170	77	349					0
	4:15 PM							44	65			195	86	390					0
	4:30 PM							39	71			140	70	320					0
	4:45 PM							47	84			143	65	339					0
	5:00 PM							48	67			124	66	305					0
	5:15 PM							58	77			125	59	319					0
	5:30 PM							45	68			102	57	272					0
	5:45 PM							53	66			90	55	264					0
	VOLUMES	0	0	0	0	0	0	358	576	0	0	1,089	535	2,558	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	38%	62%	0%	0%	67%	33%						
	APP/DEPART	0	/	893	0	/	0	934	/	576	1,624	/	1,089	0					
	BEGIN PEAK HR		4:00 PM																
	VOLUMES	0	0	0	0	0	0	154	298	0	0	648	298	1,398					
	APPROACH %	0%	0%	0%	0%	0%	0%	34%	66%	0%	0%	68%	32%						
	PEAK HR FACTOR		0.000			0.000			0.863			0.842		0.896					
	APP/DEPART	0	/	452	0	/	0	452	/	298	946	/	648	0					

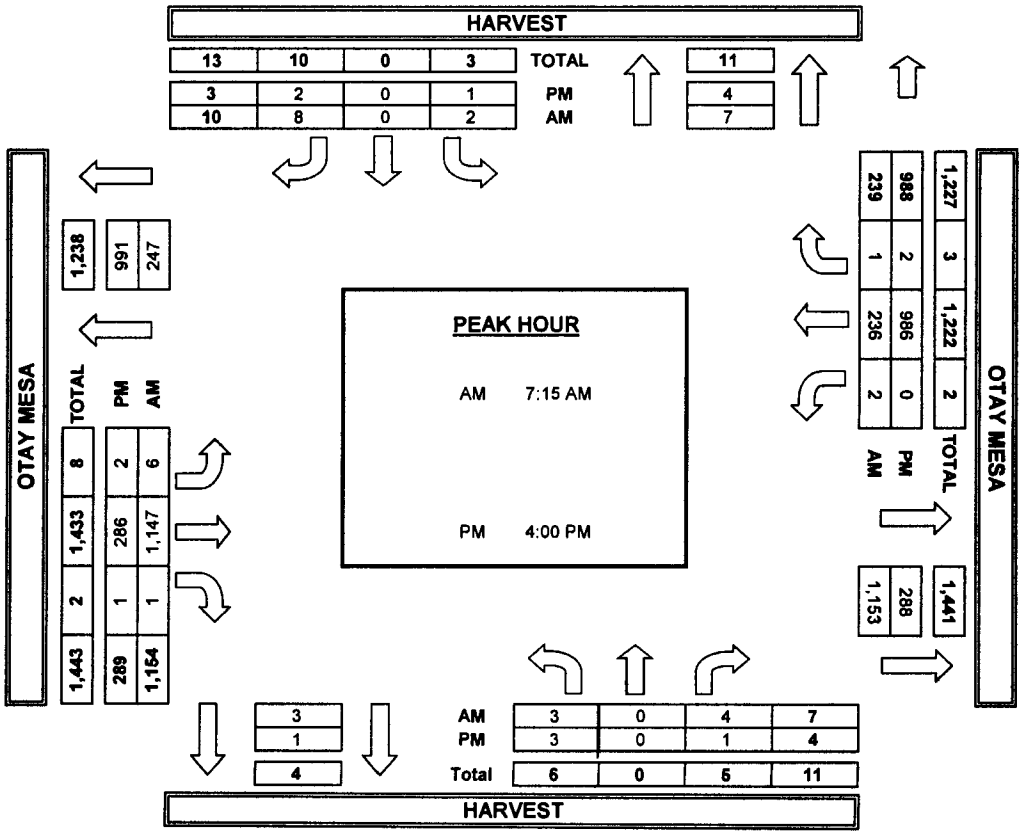


		PEDESTRIAN CROSSINGS					PEDESTRIAN ACTIVATIONS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM					0					0					0
	7:15 AM					0					0					0
	7:30 AM					0					0					0
	7:45 AM					0					0					0
	8:00 AM					0					0					0
	8:15 AM					0					0					0
	8:30 AM					0					0					0
	8:45 AM					0					0					0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM					0					0					0
	4:15 PM					0					0					0
	4:30 PM					0					0					0
	4:45 PM					0					0					0
	5:00 PM					0					0					0
	5:15 PM					0					0					0
	5:30 PM					0					0					0
	5:45 PM					0					0					0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PACIFIC TRAFFIC DATA SERVICES

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: PACIFIC TRAFFIC DATA SERVICES

DATE:	LOCATION:	OTAY MESA	PROJECT #:	CA11-0218-05
2/15/11	NORTH & SOUTH:	HARVEST	LOCATION #:	8
TUESDAY	EAST & WEST:	OTAY MESA	CONTROL:	SIGNAL

NOTES:

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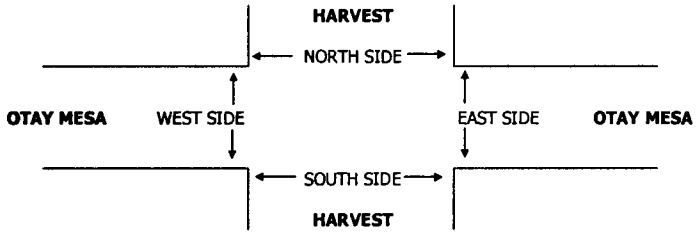
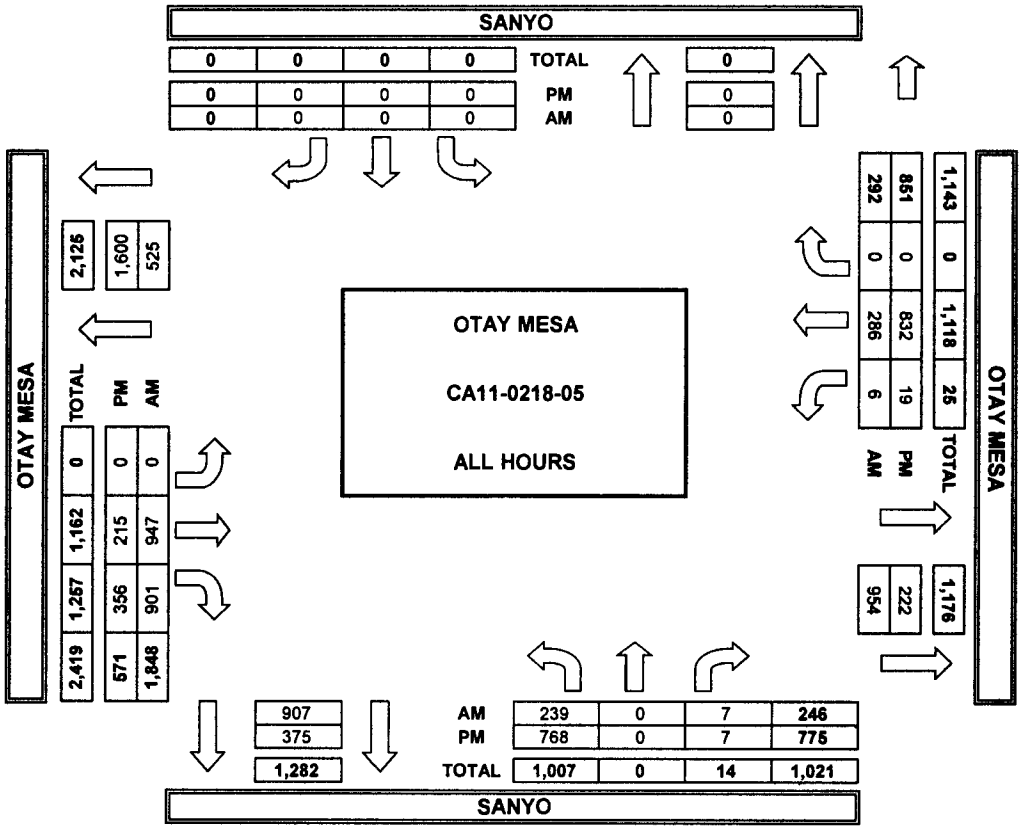
		NORTHBOUND HARVEST			SOUTHBOUND HARVEST			EASTBOUND OTAY MESA			WESTBOUND OTAY MESA				U-TURNS				
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL	NB X	SB X	EB X	WB X	TTL
AM	7:00 AM	0	0	1	0	0	1	0	221	0	1	48	1	273					0
	7:15 AM	0	0	0	0	0	2	2	224	0	1	50	0	279					0
	7:30 AM	2	0	2	1	0	2	0	308	1	1	71	1	389					0
	7:45 AM	0	0	1	1	0	2	1	345	0	0	75	0	425					0
	8:00 AM	1	0	1	0	0	2	3	270	0	0	40	0	317					0
	8:15 AM	1	0	0	0	0	0	2	161	0	0	63	0	227					0
	8:30 AM	1	0	0	1	0	0	1	169	0	0	75	1	248					0
	8:45 AM	0	0	1	0	0	1	0	160	0	0	78	1	241					0
	VOLUMES	5	0	6	3	0	10	9	1,858	1	3	500	4	2,399	0	0	0	0	0
	APPROACH %	45%	0%	55%	23%	0%	77%	0%	99%	0%	1%	99%	1%						
	APP/DEPART	11	/	13	13	/	4	1,868	/	1,867	507	/	515	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	3	0	4	2	0	8	6	1,147	1	2	236	1	1,410					
	APPROACH %	43%	0%	57%	20%	0%	80%	1%	99%	0%	1%	99%	0%						
	PEAK HR FACTOR		0.438			0.833			0.834			0.797		0.829					
	APP/DEPART	7	/	7	10	/	3	1,154	/	1,153	239	/	247	0					
PM	4:00 PM	2	0	0	0	0	1	0	68	0	0	251	0	322					0
	4:15 PM	0	0	0	1	0	0	0	62	0	0	305	0	368					0
	4:30 PM	1	0	0	0	0	1	2	70	0	0	217	0	291					0
	4:45 PM	0	0	1	0	0	0	0	86	1	0	213	2	303					0
	5:00 PM	1	0	0	0	0	2	0	68	0	0	200	0	271					0
	5:15 PM	0	0	0	0	0	0	2	82	0	0	165	2	251					0
	5:30 PM	0	0	0	0	0	5	0	66	0	0	152	0	223					0
	5:45 PM	1	0	0	1	0	2	3	69	0	0	109	1	186					0
	VOLUMES	5	0	1	2	0	11	7	571	1	0	1,612	5	2,215	0	0	0	0	0
	APPROACH %	83%	0%	17%	15%	0%	85%	1%	99%	0%	0%	100%	0%						
	APP/DEPART	6	/	12	13	/	1	579	/	574	1,617	/	1,628	0					
	BEGIN PEAK HR		4:00 PM																
	VOLUMES	3	0	1	1	0	2	2	286	1	0	986	2	1,284					
	APPROACH %	75%	0%	25%	33%	0%	67%	1%	99%	0%	0%	100%	0%						
	PEAK HR FACTOR		0.500			0.750			0.830			0.810		0.872					
	APP/DEPART	4	/	4	3	/	1	289	/	288	988	/	991	0					

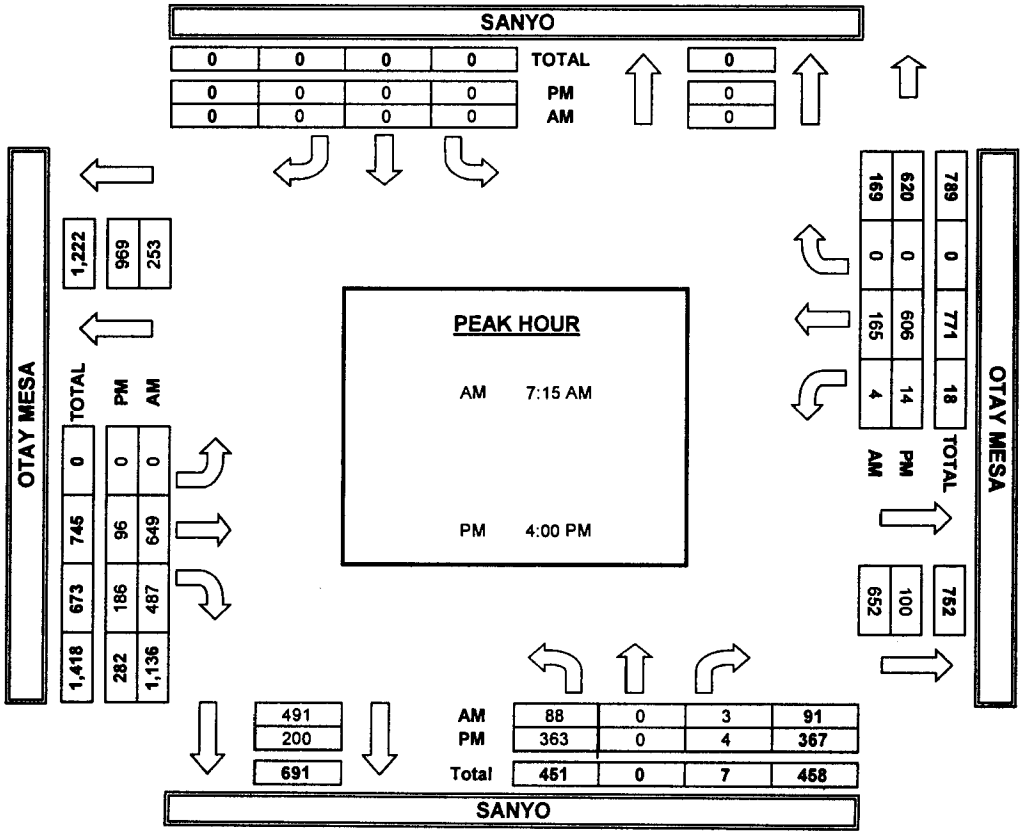


		PEDESTRIAN CROSSINGS					PEDESTRIAN ACTIVATIONS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM					0					0					0
	7:15 AM					0					0					0
	7:30 AM					0					0					0
	7:45 AM					0					0					0
	8:00 AM					0					0					0
	8:15 AM					0					0					0
	8:30 AM					0					0					0
	8:45 AM					0					0					0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM					0					0					0
	4:15 PM					0					0					0
	4:30 PM					0					0					0
	4:45 PM					0					0					0
	5:00 PM					0					0					0
	5:15 PM					0					0					0
	5:30 PM					0					0					0
	5:45 PM					0					0					0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PACIFIC TRAFFIC DATA SERVICES

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: PACIFIC TRAFFIC DATA SERVICES

DATE:	LOCATION:	OTAY MESA	PROJECT #:	CA11-0218-05
2/15/11	NORTH & SOUTH:	SANYO	LOCATION #:	9
TUESDAY	EAST & WEST:	OTAY MESA	CONTROL:	SIGNAL

NOTES:

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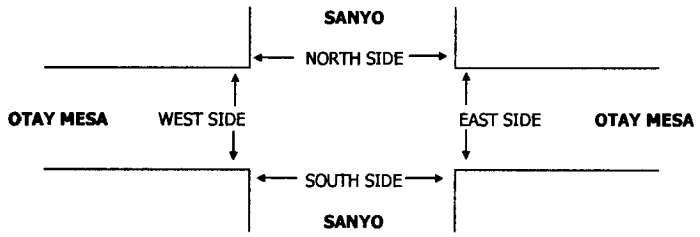
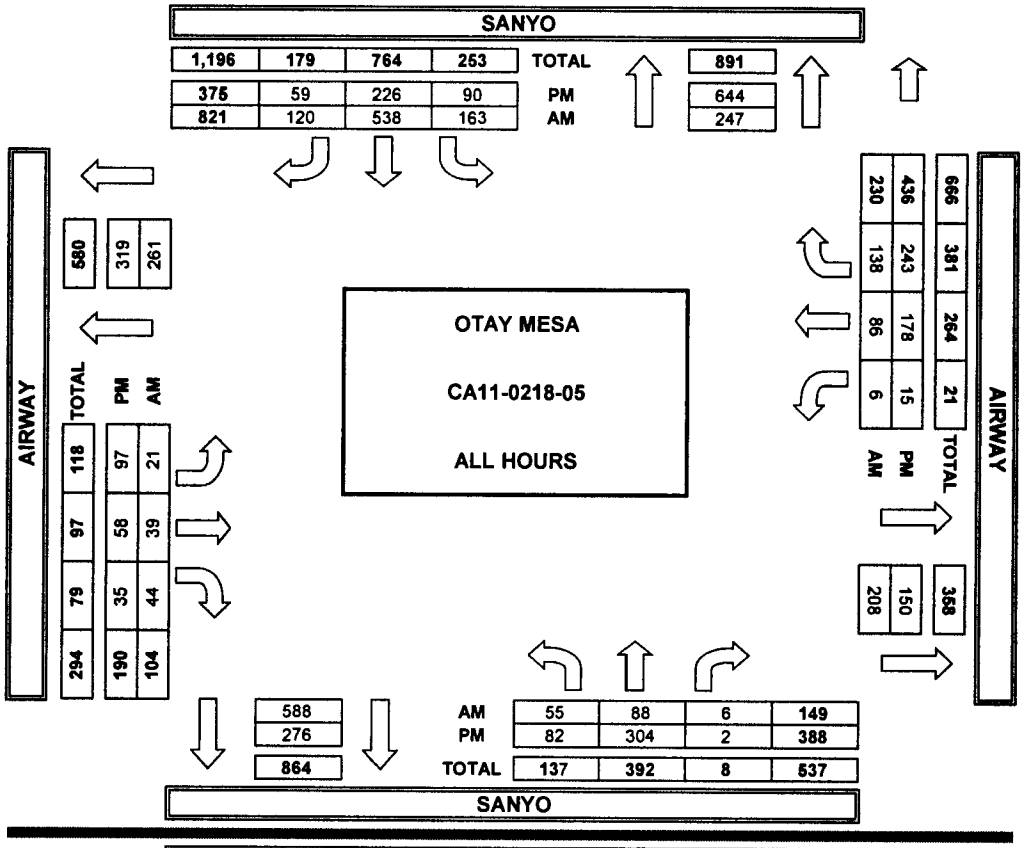
		NORTHBOUND SANYO			SOUTHBOUND SANYO			EASTBOUND OTAY MESA			WESTBOUND OTAY MESA				U-TURNS				
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 1	ET 1	ER 0	WL 1	WT 1	WR 0	TOTAL	NB X	SB X	EB X	WB X	TTL
AM	7:00 AM	22	0	1	0	0	0	0	121	88	0	28	0	260					0
	7:15 AM	21	0	0	0	0	0	0	126	90	1	44	0	282					0
	7:30 AM	28	0	1	0	0	0	0	194	136	1	72	0	432					0
	7:45 AM	18	0	0	0	0	0	0	190	151	0	28	0	387					0
	8:00 AM	21	0	2	0	0	0	0	139	110	2	21	0	295					0
	8:15 AM	38	0	1	0	0	0	0	56	109	0	33	0	237					0
	8:30 AM	55	0	2	0	0	0	0	63	109	2	29	0	260					0
	8:45 AM	36	0	0	0	0	0	0	58	108	0	31	0	233					0
	VOLUMES	239	0	7	0	0	0	0	947	901	6	286	0	2,386	0	0	0	0	0
	APPROACH %	97%	0%	3%	0%	0%	0%	0%	51%	49%	2%	98%	0%						
	APP/DEPART	246	/	0	0	/	907	1,848	/	954	292	/	525	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	88	0	3	0	0	0	0	649	487	4	165	0	1,396					
	APPROACH %	97%	0%	3%	0%	0%	0%	0%	57%	43%	2%	98%	0%						
	PEAK HR FACTOR		0.784			0.000			0.833			0.579		0.808					
	APP/DEPART	91	/	0	0	/	491	1,136	/	652	169	/	253	0					
PM	4:00 PM	110	0	1	0	0	0	0	19	36	7	151	0	324					0
	4:15 PM	59	0	2	0	0	0	0	16	44	3	208	0	332					0
	4:30 PM	94	0	0	0	0	0	0	40	54	3	156	0	347					0
	4:45 PM	100	0	1	0	0	0	0	21	52	1	91	0	266					0
	5:00 PM	132	0	3	0	0	0	0	20	49	3	71	0	278					0
	5:15 PM	111	0	0	0	0	0	0	31	49	1	55	0	247					0
	5:30 PM	76	0	0	0	0	0	0	45	36	1	54	0	212					0
	5:45 PM	86	0	0	0	0	0	0	23	36	0	46	0	191					0
	VOLUMES	768	0	7	0	0	0	0	215	356	19	832	0	2,197	0	0	0	0	0
	APPROACH %	99%	0%	1%	0%	0%	0%	0%	38%	62%	2%	98%	0%						
	APP/DEPART	775	/	0	0	/	375	571	/	222	851	/	1,600	0					
	BEGIN PEAK HR		4:00 PM																
	VOLUMES	363	0	4	0	0	0	0	96	186	14	606	0	1,269					
	APPROACH %	99%	0%	1%	0%	0%	0%	0%	34%	66%	2%	98%	0%						
	PEAK HR FACTOR		0.827			0.000			0.750			0.735		0.914					
	APP/DEPART	367	/	0	0	/	200	282	/	100	620	/	969	0					

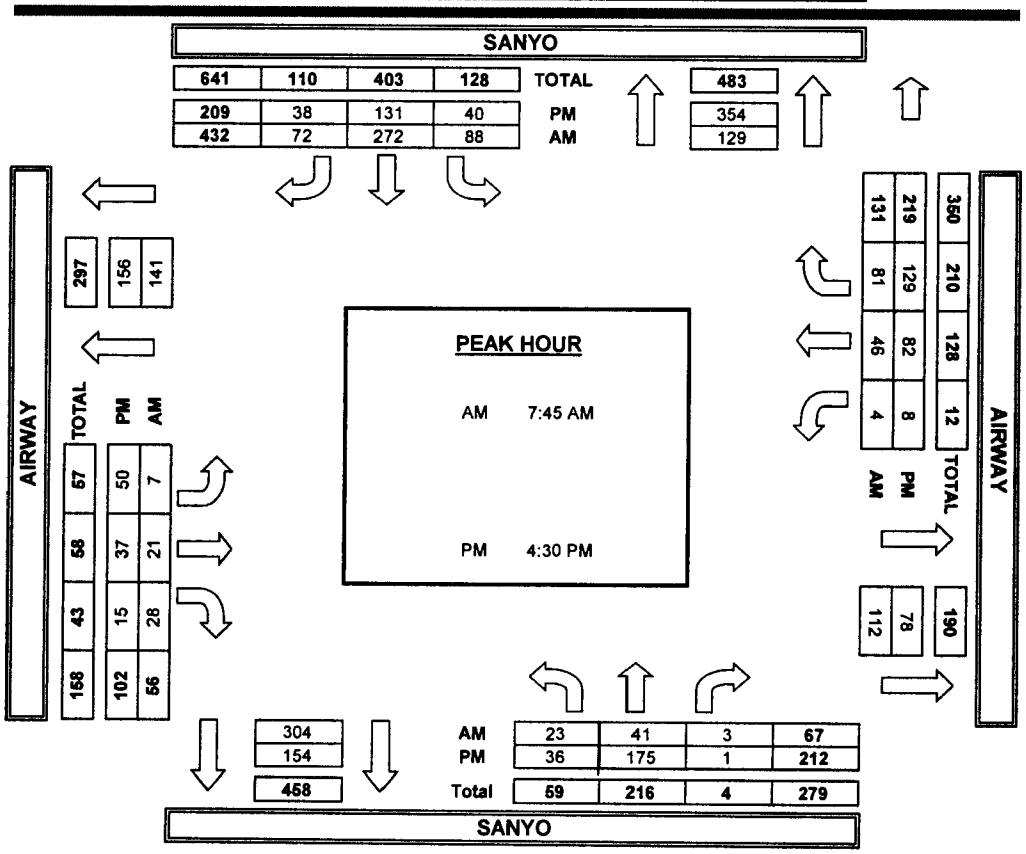


		PEDESTRIAN CROSSINGS					PEDESTRIAN ACTIVATIONS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM					0					0					0
	7:15 AM					0					0					0
	7:30 AM					0					0					0
	7:45 AM					0					0					0
	8:00 AM					0					0					0
	8:15 AM					0					0					0
	8:30 AM					0					0					0
	8:45 AM					0					0					0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM					0					0					0
	4:15 PM					0					0					0
	4:30 PM					0					0					0
	4:45 PM					0					0					0
	5:00 PM					0					0					0
	5:15 PM					0					0					0
	5:30 PM					0					0					0
	5:45 PM					0					0					0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PACIFIC TRAFFIC DATA SERVICES

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: PACIFIC TRAFFIC DATA SERVICES

DATE:	LOCATION:	OTAY MESA	PROJECT #:	CA11-0218-05
2/15/11	NORTH & SOUTH:	SANYO	LOCATION #:	10
TUESDAY	EAST & WEST:	AIRWAY	CONTROL:	4-WAY STOP

NOTES:

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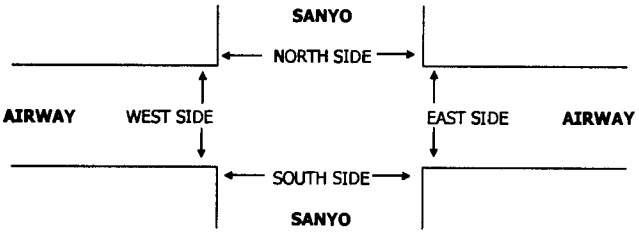
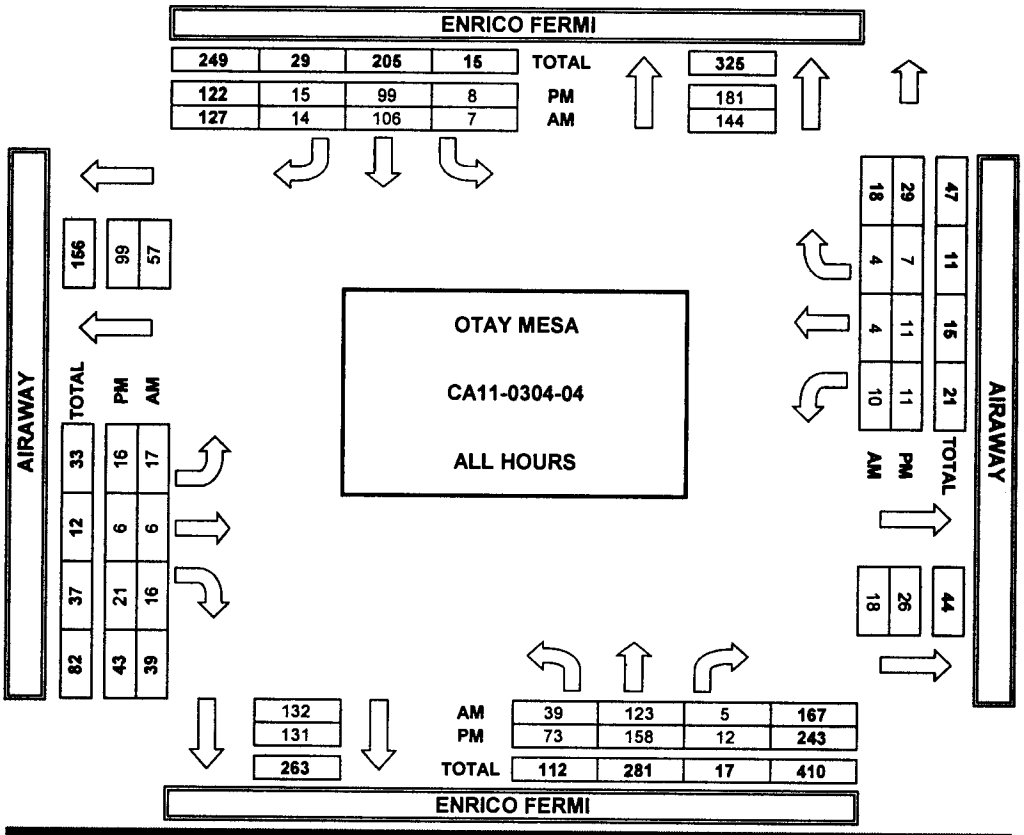
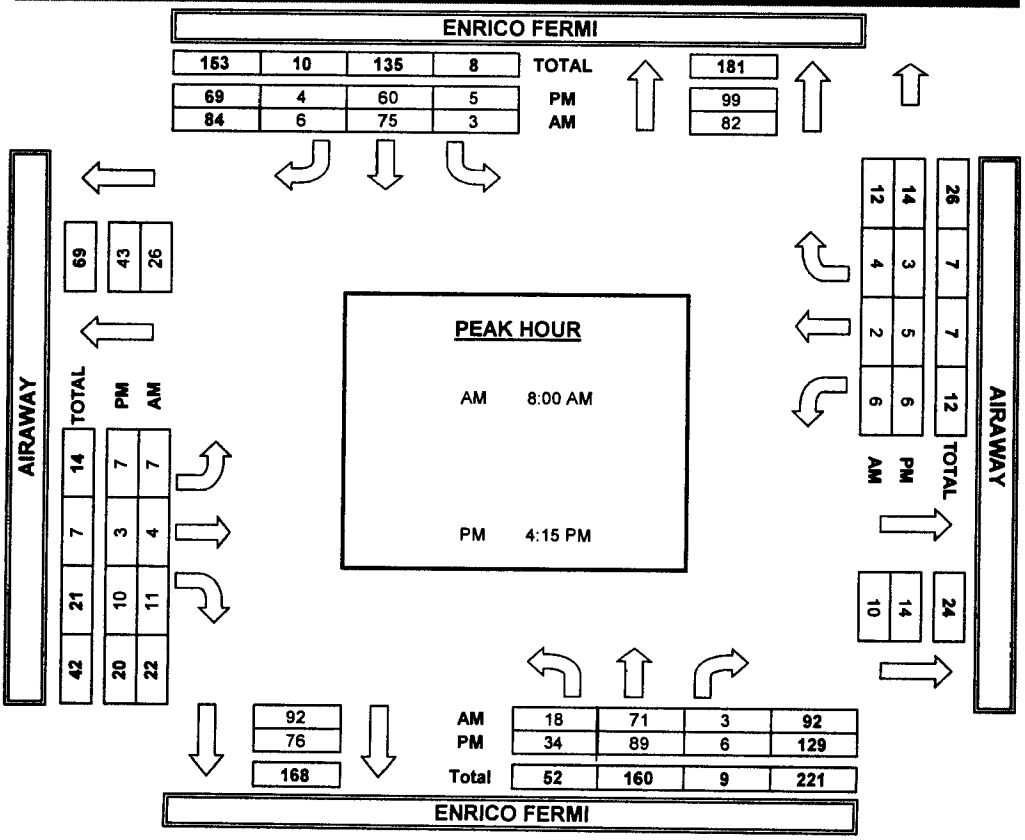
		NORTHBOUND SANYO			SOUTHBOUND SANYO			EASTBOUND AIRWAY			WESTBOUND AIRWAY				U-TURNS				
	LANES:	NL 1	NT 0.5	NR 0.5	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL	NB X	SB X	EB X	WB X	TTL
AM	7:00 AM	9	10	0	17	60	9	1	3	3	1	9	7	129					0
	7:15 AM	10	12	1	22	59	11	5	4	2	0	10	12	148					0
	7:30 AM	6	17	2	19	81	16	6	4	3	1	11	8	174					0
	7:45 AM	7	7	1	20	91	28	1	6	7	2	9	9	188					0
	8:00 AM	2	6	2	22	62	18	3	4	5	0	11	18	153					0
	8:15 AM	10	17	0	25	62	12	1	4	9	1	11	19	171					0
	8:30 AM	4	11	0	21	57	14	2	7	7	1	15	35	174					0
	8:45 AM	7	8	0	17	66	12	2	7	8	0	10	30	167					0
	VOLUMES	55	88	6	163	538	120	21	39	44	6	86	138	1,304	0	0	0	0	0
	APPROACH %	37%	59%	4%	20%	66%	15%	20%	38%	42%	3%	37%	60%						
	APP/DEPART	149	/	247	821	/	588	104	/	208	230	/	261	0					
	BEGIN PEAK HR		7:45 AM																
	VOLUMES	23	41	3	88	272	72	7	21	28	4	46	81	686					
	APPROACH %	34%	61%	4%	20%	63%	17%	13%	38%	50%	3%	35%	62%						
	PEAK HR FACTOR		0.620			0.777			0.875			0.642		0.912					
	APP/DEPART	67	/	129	432	/	304	56	/	112	131	/	141	0					
PM	4:00 PM	10	38	0	13	28	9	16	5	6	2	25	28	180					0
	4:15 PM	15	31	0	15	22	7	10	9	6	1	27	28	171					0
	4:30 PM	9	31	1	5	38	10	7	10	4	1	20	32	168					0
	4:45 PM	6	41	0	9	29	18	10	13	2	5	25	33	191					0
	5:00 PM	9	58	0	11	33	5	20	7	6	1	20	40	210					0
	5:15 PM	12	45	0	15	31	5	13	7	3	1	17	24	173					0
	5:30 PM	15	29	1	10	21	5	5	1	4	3	23	31	148					0
	5:45 PM	6	31	0	12	24	0	16	6	4	1	21	27	148					0
	VOLUMES	82	304	2	90	226	59	97	58	35	15	178	243	1,389	0	0	0	0	0
	APPROACH %	21%	78%	1%	24%	60%	16%	51%	31%	18%	3%	41%	56%						
	APP/DEPART	388	/	644	375	/	276	190	/	150	436	/	319	0					
	BEGIN PEAK HR		4:30 PM																
	VOLUMES	36	175	1	40	131	38	50	37	15	8	82	129	742					
	APPROACH %	17%	83%	0%	19%	63%	18%	49%	36%	15%	4%	37%	59%						
	PEAK HR FACTOR		0.791			0.933			0.773			0.869		0.883					
	APP/DEPART	212	/	354	209	/	154	102	/	78	219	/	156	0					



		PEDESTRIAN CROSSINGS					PEDESTRIAN ACTIVATIONS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM					0					0					0
	7:15 AM					0					0					0
	7:30 AM					0					0					0
	7:45 AM					0					0					0
	8:00 AM					0					0					0
	8:15 AM					0					0					0
	8:30 AM					0					0					0
	8:45 AM					0					0					0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM					0					0					0
	4:15 PM					0					0					0
	4:30 PM					0					0					0
	4:45 PM					0					0					0
	5:00 PM					0					0					0
	5:15 PM					0					0					0
	5:30 PM					0					0					0
	5:45 PM					0					0					0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PACIFIC TRAFFIC DATA SERVICES
TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

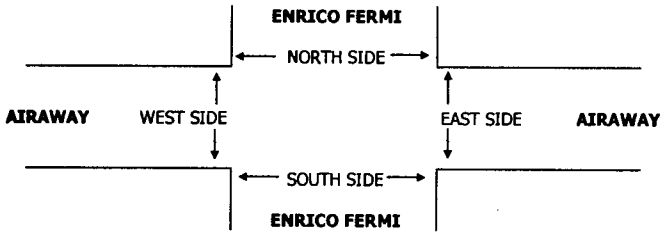
PREPARED BY: PACIFIC TRAFFIC DATA SERVICES

DATE:	LOCATION:	OTAY MESA	PROJECT #:	CA11-0304-04
3/1/11	NORTH & SOUTH:	ENRICO FERMI	LOCATION #:	1
TUESDAY	EAST & WEST:	AIRAWAY	CONTROL:	SIGNAL

NOTES:

N ▲ ◄ W E ► S ▼

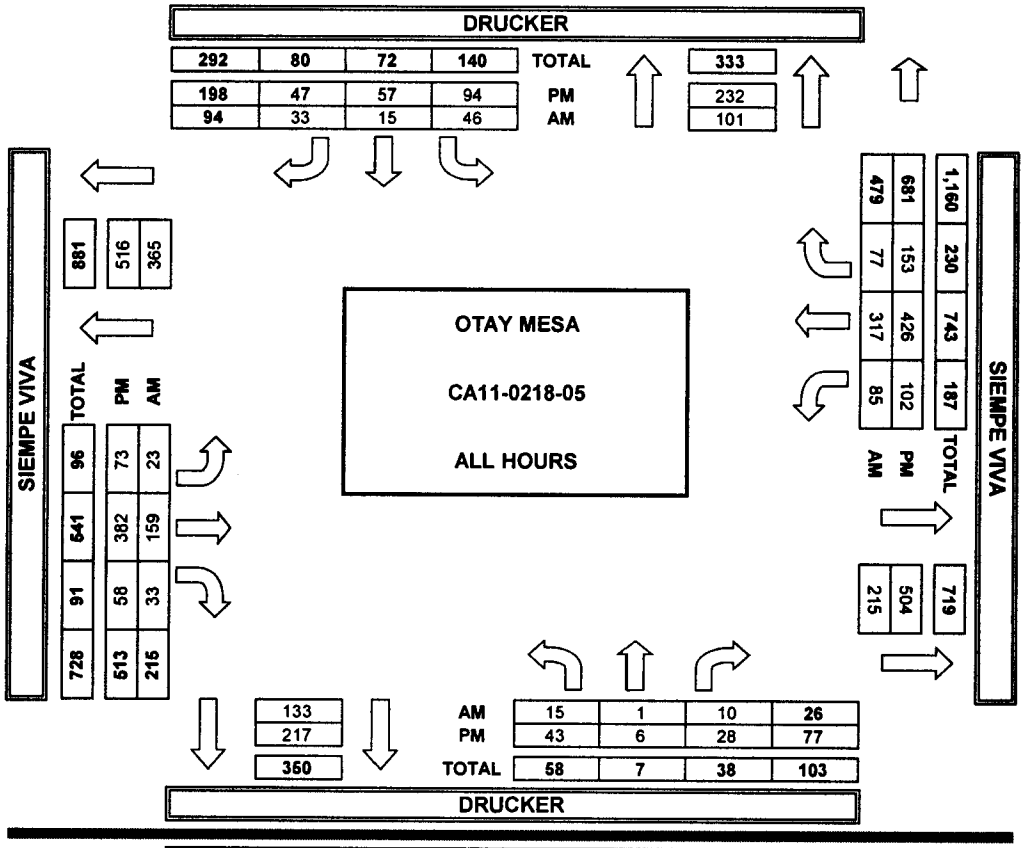
		NORTHBOUND ENRICO FERMI			SOUTHBOUND ENRICO FERMI			EASTBOUND AIRAWAY			WESTBOUND AIRAWAY				U-TURNS				
	LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 1	ET 1	ER 0	WL 1	WT 1	WR 0	TOTAL	NB X	SB X	EB X	WB X	TTL
AM	7:00 AM	4	14	0	3	2	1	4	0	1	0	0	0	29					0
	7:15 AM	1	12	1	0	6	1	3	1	1	1	1	0	28					0
	7:30 AM	11	19	0	0	11	6	1	0	1	2	0	0	51					0
	7:45 AM	5	7	1	1	12	0	2	1	2	1	1	0	33					0
	8:00 AM	5	10	1	1	13	0	1	0	2	2	1	2	38					0
	8:15 AM	1	19	0	1	18	3	1	3	3	0	1	0	50					0
	8:30 AM	5	20	2	0	15	1	2	1	2	3	0	0	51					0
	8:45 AM	7	22	0	1	29	2	3	0	4	1	0	2	71					0
	VOLUMES	39	123	5	7	106	14	17	6	16	10	4	4	351	0	0	0	0	0
	APPROACH %	23%	74%	3%	6%	83%	11%	44%	15%	41%	56%	22%	22%						
	APP/DEPART	167	/	144	127	/	132	39	/	18	18	/	57	0					
	BEGIN PEAK HR		8:00 AM																
	VOLUMES	18	71	3	3	75	6	7	4	11	6	2	4	210					
	APPROACH %	20%	77%	3%	4%	89%	7%	32%	18%	50%	50%	17%	33%						
	PEAK HR FACTOR		0.793			0.656			0.786			0.600		0.739					
	APP/DEPART	92	/	82	84	/	92	22	/	10	12	/	26	0					
PM	4:00 PM	10	15	0	3	11	7	4	3	2	0	2	2	59					0
	4:15 PM	9	18	1	1	14	1	0	2	4	0	2	0	52					0
	4:30 PM	9	20	1	2	13	1	3	1	0	1	2	0	53					0
	4:45 PM	8	21	3	0	17	1	0	0	2	2	1	1	56					0
	5:00 PM	8	30	1	2	16	1	4	0	4	3	0	2	71					0
	5:15 PM	9	13	2	0	4	3	2	0	3	3	2	2	43					0
	5:30 PM	13	20	3	0	6	0	1	0	3	1	2	0	49					0
	5:45 PM	7	21	1	0	18	1	2	0	3	1	0	0	54					0
	VOLUMES	73	158	12	8	99	15	16	6	21	11	11	7	437	0	0	0	0	0
	APPROACH %	30%	65%	5%	7%	81%	12%	37%	14%	49%	38%	38%	24%						
	APP/DEPART	243	/	181	122	/	131	43	/	26	29	/	99	0					
	BEGIN PEAK HR		4:15 PM																
	VOLUMES	34	89	6	5	60	4	7	3	10	6	5	3	232					
	APPROACH %	26%	69%	5%	7%	87%	6%	35%	15%	50%	43%	36%	21%						
	PEAK HR FACTOR		0.827			0.908			0.625			0.700		0.817					
	APP/DEPART	129	/	99	69	/	76	20	/	14	14	/	43	0					

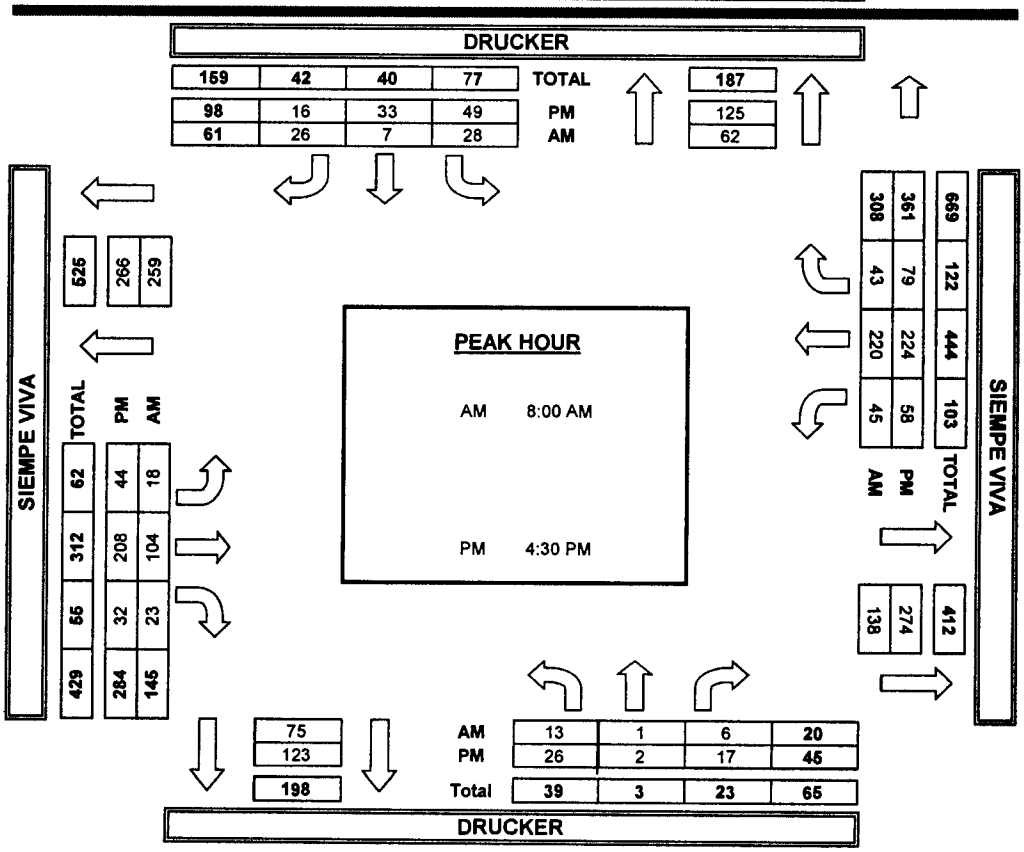


		PEDESTRIAN CROSSINGS					PEDESTRIAN ACTIVATIONS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM					0					0					0
	7:15 AM					0					0					0
	7:30 AM					0					0					0
	7:45 AM					0					0					0
	8:00 AM					0					0					0
	8:15 AM					0					0					0
	8:30 AM					0					0					0
	8:45 AM					0					0					0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM					0					0					0
	4:15 PM					0					0					0
	4:30 PM					0					0					0
	4:45 PM					0					0					0
	5:00 PM					0					0					0
	5:15 PM					0					0					0
	5:30 PM					0					0					0
	5:45 PM					0					0					0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PACIFIC TRAFFIC DATA SERVICES

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: PACIFIC TRAFFIC DATA SERVICES

DATE:	LOCATION:	OTAY MESA	PROJECT #:	CA11-0218-05
2/15/11	NORTH & SOUTH:	DRUCKER	LOCATION #:	11
TUESDAY	EAST & WEST:	SIEMPE VIVA	CONTROL:	SIGNAL

NOTES:

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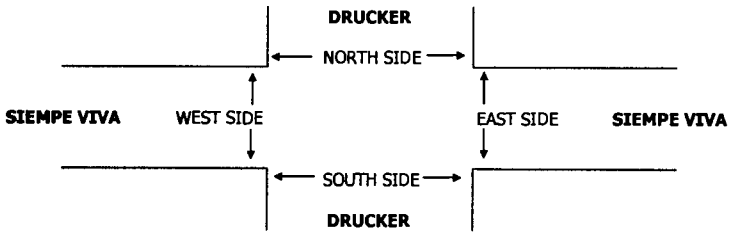
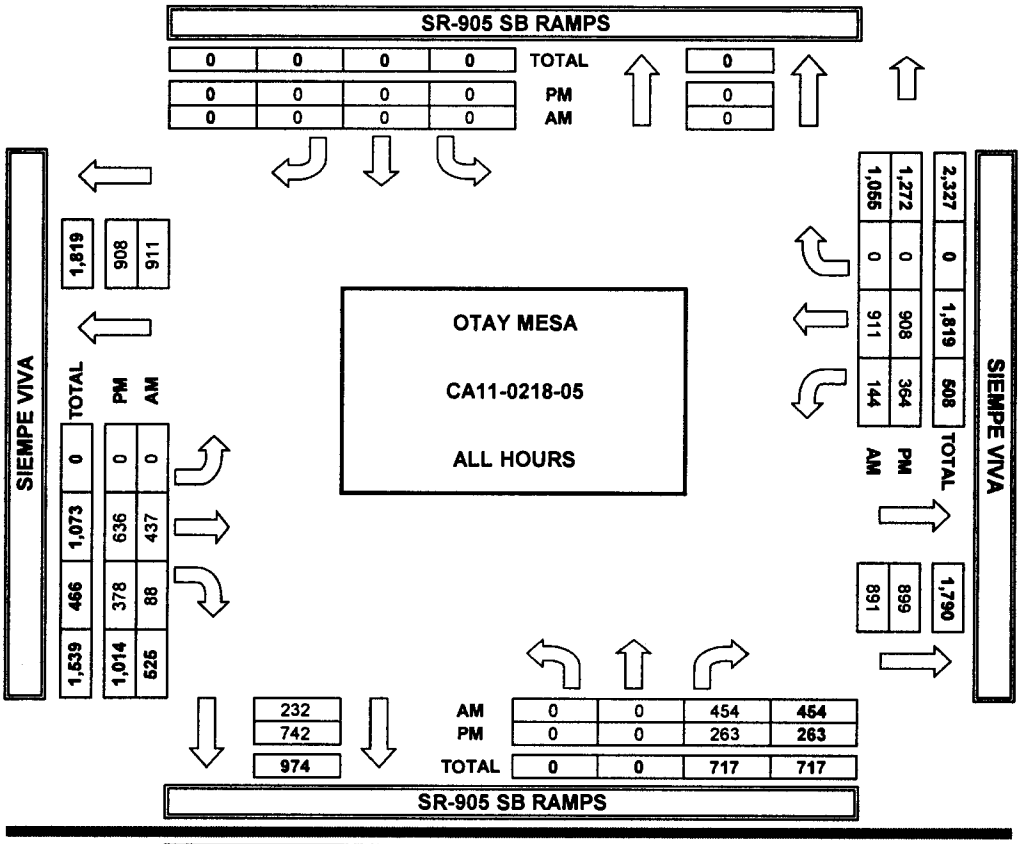
		NORTHBOUND DRUCKER			SOUTHBOUND DRUCKER			EASTBOUND SIEMPE VIVA			WESTBOUND SIEMPE VIVA				U-TURNS				
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL	NB X	SB X	EB X	WB X	TTL
AM	7:00 AM	0	0	0	4	0	1	1	12	0	11	15	5	49	0	0	1	3	4
	7:15 AM	1	0	1	4	0	2	1	21	1	4	28	8	71	0	0	0	1	1
	7:30 AM	1	0	1	6	1	3	3	6	2	5	23	15	66	0	0	0	1	1
	7:45 AM	0	0	2	4	7	1	0	16	7	20	31	6	94	0	0	0	4	4
	8:00 AM	1	0	2	4	1	4	4	21	5	15	58	3	118	0	0	2	8	10
	8:15 AM	4	1	0	10	1	7	4	21	4	9	64	11	136	0	0	0	6	6
	8:30 AM	3	0	3	10	3	6	5	32	6	6	42	19	135	0	0	1	1	2
	8:45 AM	5	0	1	4	2	9	5	30	8	15	56	10	145	0	0	2	6	8
	VOLUMES	15	1	10	46	15	33	23	159	33	85	317	77	814	0	0	6	30	36
	APPROACH %	58%	4%	38%	49%	16%	35%	11%	74%	15%	18%	66%	16%						
	APP/DEPART	26	/	101	94	/	133	215	/	215	479	/	365	0					
	BEGIN PEAK HR		8:00 AM																
	VOLUMES	13	1	6	28	7	26	18	104	23	45	220	43	534					
	APPROACH %	65%	5%	30%	46%	11%	43%	12%	72%	16%	15%	71%	14%						
	PEAK HR FACTOR		0.833			0.803			0.843			0.917		0.921					
	APP/DEPART	20	/	62	61	/	75	145	/	138	308	/	259	0					
PM	4:00 PM	3	0	4	13	5	13	12	49	6	12	62	24	203	0	0	1	5	6
	4:15 PM	7	3	3	11	9	10	8	53	8	15	50	16	193	0	0	1	6	7
	4:30 PM	9	1	1	7	9	5	13	39	9	11	59	15	178	0	0	0	2	2
	4:45 PM	9	0	1	12	7	3	7	50	6	18	61	15	189	0	0	1	11	12
	5:00 PM	3	0	6	18	6	4	11	58	7	11	56	25	205	0	0	5	2	7
	5:15 PM	5	1	9	12	11	4	13	61	10	18	48	24	216	0	0	4	7	11
	5:30 PM	7	0	4	14	5	3	7	39	7	10	50	18	164	0	0	2	4	6
	5:45 PM	0	1	0	7	5	5	2	33	5	7	40	16	121	0	0	1	2	3
	VOLUMES	43	6	28	94	57	47	73	382	58	102	426	153	1,469	0	0	15	39	54
	APPROACH %	56%	8%	36%	47%	29%	24%	14%	74%	11%	15%	63%	22%						
	APP/DEPART	77	/	232	198	/	217	513	/	504	681	/	516	0					
	BEGIN PEAK HR		4:30 PM																
	VOLUMES	26	2	17	49	33	16	44	208	32	58	224	79	788					
	APPROACH %	58%	4%	38%	50%	34%	16%	15%	73%	11%	16%	62%	22%						
	PEAK HR FACTOR		0.750			0.875			0.845			0.960		0.912					
	APP/DEPART	45	/	125	98	/	123	284	/	274	361	/	266	0					

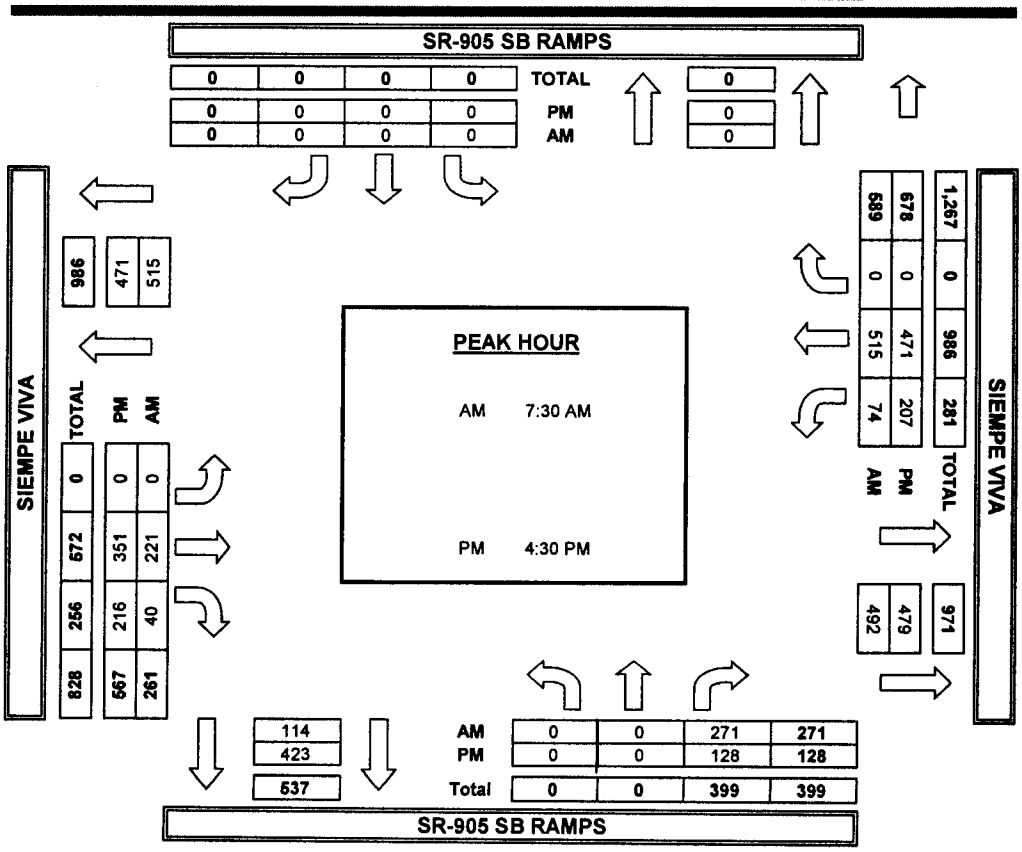


		PEDESTRIAN CROSSINGS					PEDESTRIAN ACTIVATIONS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM					0					0					0
	7:15 AM					0					0					0
	7:30 AM					0					0					0
	7:45 AM					0					0					0
	8:00 AM					0					0					0
	8:15 AM					0					0					0
	8:30 AM					0					0					0
	8:45 AM					0					0					0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM					0					0					0
	4:15 PM					0					0					0
	4:30 PM					0					0					0
	4:45 PM					0					0					0
	5:00 PM					0					0					0
	5:15 PM					0					0					0
	5:30 PM					0					0					0
	5:45 PM					0					0					0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PACIFIC TRAFFIC DATA SERVICES

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

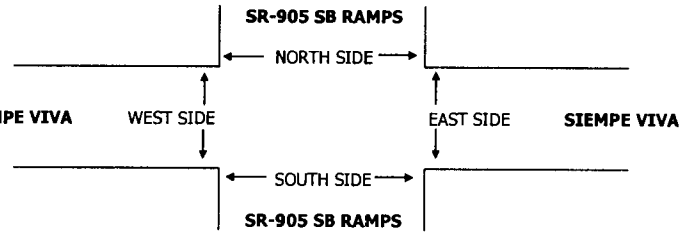
PREPARED BY: PACIFIC TRAFFIC DATA SERVICES

DATE:	LOCATION:	OTAY MESA	PROJECT #:	CA11-0218-05
2/15/11	NORTH & SOUTH:	SR-905 SB RAMPS	LOCATION #:	12
TUESDAY	EAST & WEST:	SIEMPE VIVA	CONTROL:	SIGNAL

NOTES:

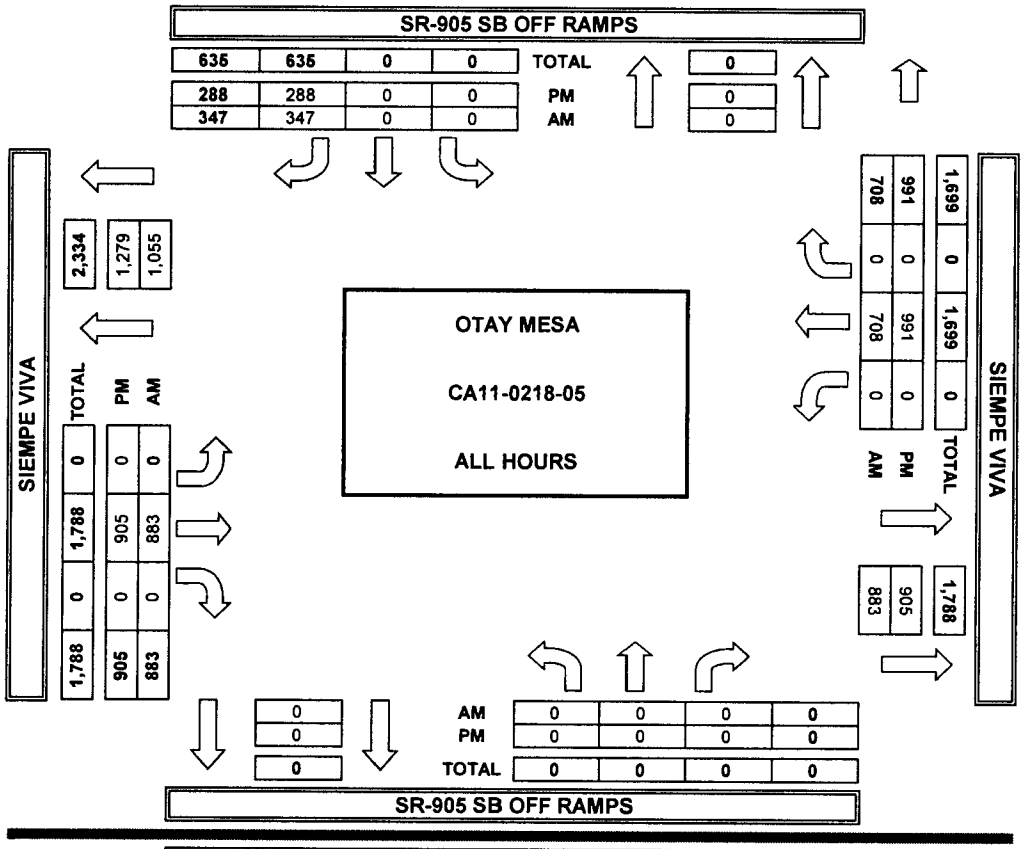
AM PM MD OTHER OTHER ◄ W E ► ▲ N S ▼

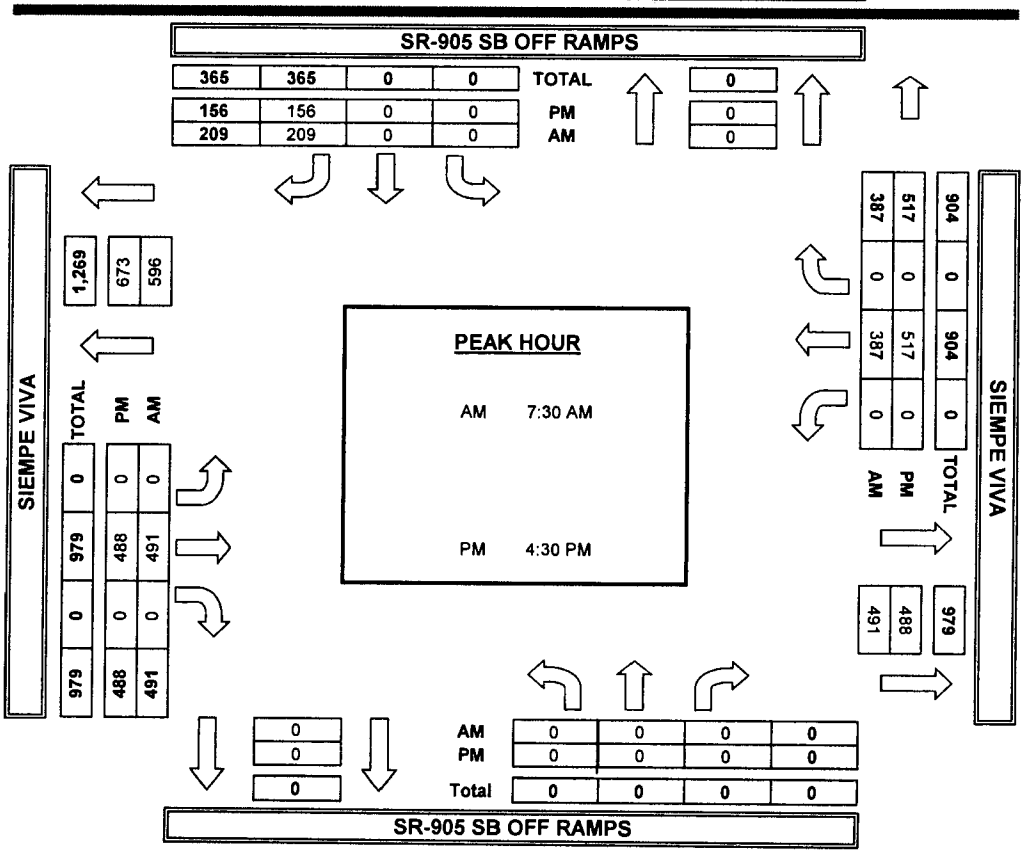
		NORTHBOUND SR-905 SB RAMPS			SOUTHBOUND SR-905 SB RAMPS			EASTBOUND SIEMPE VIVA			WESTBOUND SIEMPE VIVA				U-TURNS				
	LANES:	NL X	NT X	NR 2	SL X	ST X	SR X	EL X	ET 2	ER 1	WL 2	WT 3	WR X	TOTAL	NB X	SB X	EB X	WB X	TTL
AM	7:00 AM			32					42	8	17	71		170					0
	7:15 AM			50					53	9	18	90		220					0
	7:30 AM			64					52	9	25	100		250					0
	7:45 AM			70					53	12	23	128		286					0
	8:00 AM			79					54	8	15	150		306					0
	8:15 AM			58					62	11	11	137		279					0
	8:30 AM			41					53	15	18	118		245					0
	8:45 AM			60					68	16	17	117		278					0
	VOLUMES	0	0	454	0	0	0	0	437	88	144	911	0	2,034	0	0	0	0	0
	APPROACH %	0%	0%	100%	0%	0%	0%	0%	83%	17%	14%	86%	0%						
	APP/DEPART	454	/	0	0	/	232	525	/	891	1,055	/	911	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	0	0	271	0	0	0	0	221	40	74	515	0	1,121					
	APPROACH %	0%	0%	100%	0%	0%	0%	0%	85%	15%	13%	87%	0%						
	PEAK HR FACTOR		0.858			0.000			0.894			0.892		0.916					
	APP/DEPART	271	/	0	0	/	114	261	/	492	589	/	515	0					
PM	4:00 PM			43					71	41	43	127		325					0
	4:15 PM			38					78	44	37	120		317					0
	4:30 PM			33					96	44	49	119		341					0
	4:45 PM			34					84	55	44	118		335					0
	5:00 PM			29					92	56	63	107		347					0
	5:15 PM			32					79	61	51	127		350					0
	5:30 PM			34					70	39	42	95		280					0
	5:45 PM			20					66	38	35	95		254					0
	VOLUMES	0	0	263	0	0	0	0	636	378	364	908	0	2,549	0	0	0	0	0
	APPROACH %	0%	0%	100%	0%	0%	0%	0%	63%	37%	29%	71%	0%						
	APP/DEPART	263	/	0	0	/	742	1,014	/	899	1,272	/	908	0					
	BEGIN PEAK HR		4:30 PM																
	VOLUMES	0	0	128	0	0	0	0	351	216	207	471	0	1,373					
	APPROACH %	0%	0%	100%	0%	0%	0%	0%	62%	38%	31%	69%	0%						
	PEAK HR FACTOR		0.941			0.000			0.958			0.952		0.981					
	APP/DEPART	128	/	0	0	/	423	567	/	479	678	/	471	0					



		PEDESTRIAN CROSSINGS					PEDESTRIAN ACTIVATIONS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM					0					0					0
	7:15 AM					0					0					0
	7:30 AM					0					0					0
	7:45 AM					0					0					0
	8:00 AM					0					0					0
	8:15 AM					0					0					0
	8:30 AM					0					0					0
	8:45 AM					0					0					0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM					0					0					0
	4:15 PM					0					0					0
	4:30 PM					0					0					0
	4:45 PM					0					0					0
	5:00 PM					0					0					0
	5:15 PM					0					0					0
	5:30 PM					0					0					0
	5:45 PM					0					0					0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PACIFIC TRAFFIC DATA SERVICES
TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

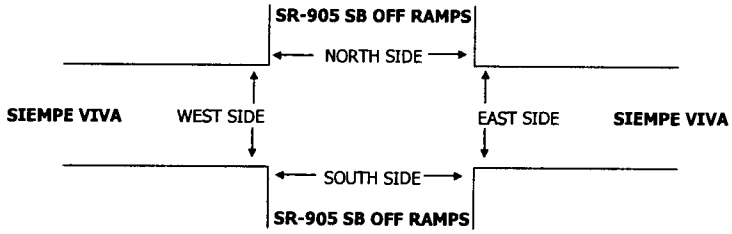
PREPARED BY: PACIFIC TRAFFIC DATA SERVICES

DATE:	LOCATION:	OTAY MESA	PROJECT #:	CA11-0218-05
2/15/11	NORTH & SOUTH:	SR-905 SB OFF RAMPS	LOCATION #:	13
TUESDAY	EAST & WEST:	SIEMPE VIVA	CONTROL:	SIGNAL

NOTES:

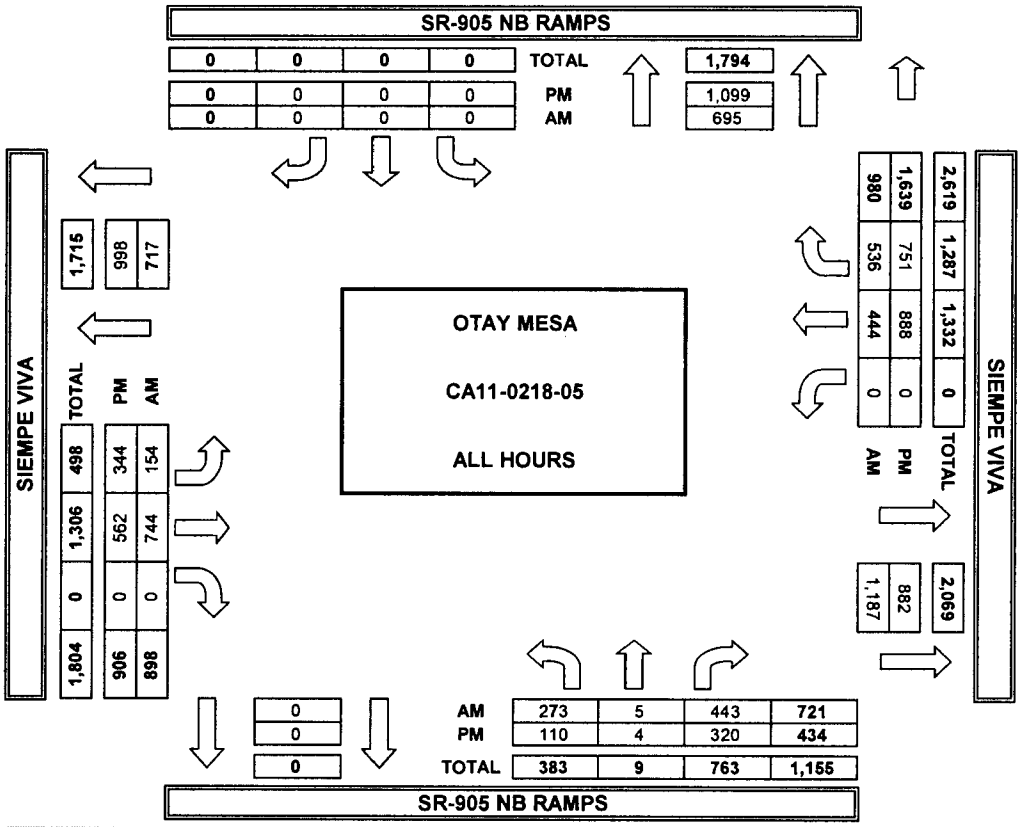
N ▲ ◄ W E ► S ▼

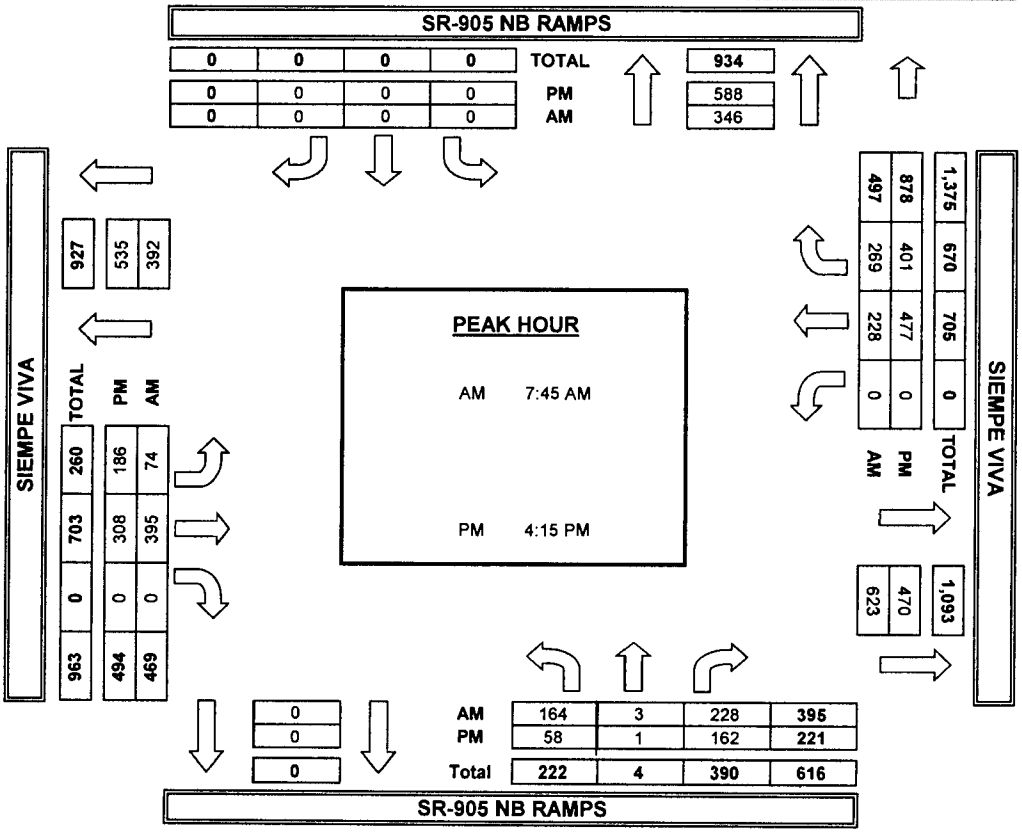
		NORTHBOUND SR-905 SB OFF RAMPS			SOUTHBOUND SR-905 SB OFF RAMPS			EASTBOUND SIEMPE VIVA			WESTBOUND SIEMPE VIVA				U-TURNS				
	LANES:	NL X	NT X	NR X	SL X	ST X	SR 1	EL X	ET 2	ER X	WL X	WT 2	WR X	TOTAL	NB X	SB X	EB X	WB X	TTL
AM	7:00 AM						20		74			61		155					0
	7:15 AM						33		97			76		206					0
	7:30 AM						39		116			89		244					0
	7:45 AM						56		128			101		285					0
	8:00 AM						60		132			96		288					0
	8:15 AM						54		115			101		270					0
	8:30 AM						49		94			88		231					0
	8:45 AM						36		127			96		259					0
	VOLUMES	0	0	0	0	0	347	0	883	0	0	708	0	1,938	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	100%	0%						
	APP/DEPART	0	/	0	347	/	0	883	/	883	708	/	1,055	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	0	0	0	0	0	209	0	491	0	0	387	0	1,087					
	APPROACH %	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	100%	0%						
	PEAK HR FACTOR		0.000			0.871			0.930			0.958		0.944					
	APP/DEPART	0	/	0	209	/	0	491	/	491	387	/	596	0					
PM	4:00 PM						33		112			144		289					0
	4:15 PM						35		115			121		271					0
	4:30 PM						24		129			133		286					0
	4:45 PM						45		122			124		291					0
	5:00 PM						38		124			133		295					0
	5:15 PM						49		113			127		289					0
	5:30 PM						30		108			115		253					0
	5:45 PM						34		82			94		210					0
	VOLUMES	0	0	0	0	0	288	0	905	0	0	991	0	2,184	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	100%	0%						
	APP/DEPART	0	/	0	288	/	0	905	/	905	991	/	1,279	0					
	BEGIN PEAK HR		4:30 PM																
	VOLUMES	0	0	0	0	0	156	0	488	0	0	517	0	1,161					
	APPROACH %	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	100%	0%						
	PEAK HR FACTOR		0.000			0.796			0.946			0.972		0.984					
	APP/DEPART	0	/	0	156	/	0	488	/	488	517	/	673	0					



		PEDESTRIAN CROSSINGS					PEDESTRIAN ACTIVATIONS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM					0					0					0
	7:15 AM					0					0					0
	7:30 AM					0					0					0
	7:45 AM					0					0					0
	8:00 AM					0					0					0
	8:15 AM					0					0					0
	8:30 AM					0					0					0
	8:45 AM					0					0					0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM					0					0					0
	4:15 PM					0					0					0
	4:30 PM					0					0					0
	4:45 PM					0					0					0
	5:00 PM					0					0					0
	5:15 PM					0					0					0
	5:30 PM					0					0					0
	5:45 PM					0					0					0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PACIFIC TRAFFIC DATA SERVICES
TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: PACIFIC TRAFFIC DATA SERVICES

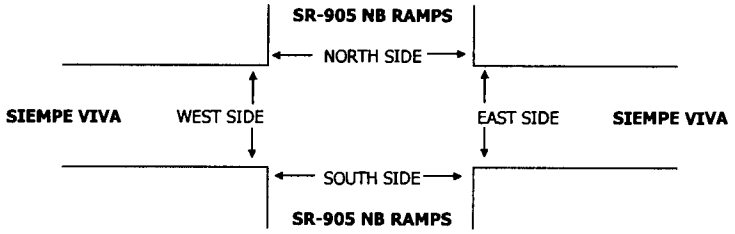
DATE:	LOCATION:	OTAY MESA	PROJECT #:	CA11-0218-05
2/15/11	NORTH & SOUTH:	SR-905 NB RAMPS	LOCATION #:	14
TUESDAY	EAST & WEST:	SIEMPE VIVA	CONTROL:	SIGNAL

NOTES:

AM PM MD OTHER OTHER

N ▲ ◄ W E ► S ▼

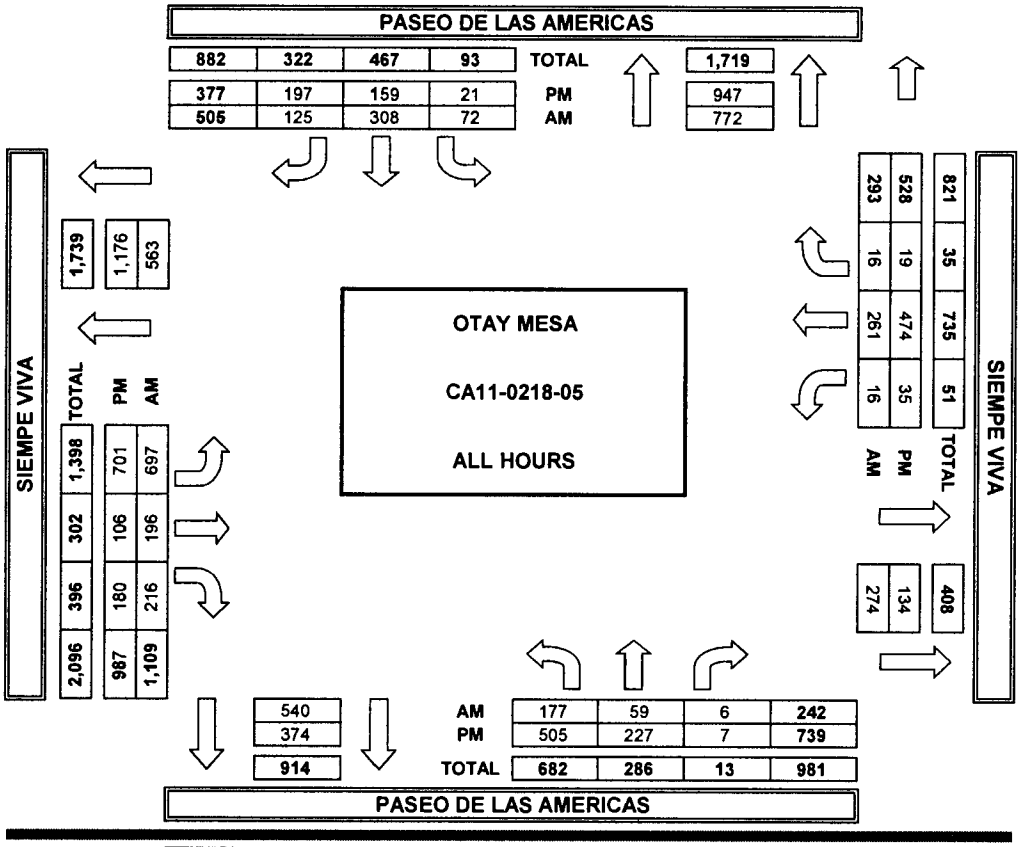
		NORTHBOUND SR-905 NB RAMPS			SOUTHBOUND SR-905 NB RAMPS			EASTBOUND SIEMPE VIVA			WESTBOUND SIEMPE VIVA				U-TURNS				
	LANES:	NL 0.5	NT 0.5	NR 2	SL X	ST X	SR X	EL 2	ET 3	ER X	WL X	WT 2.5	WR 1.5	TOTAL	NB X	SB X	EB X	WB X	TTL
AM	7:00 AM	26	1	56				19	72			36	59	269					0
	7:15 AM	21	1	52				21	81			55	68	299					0
	7:30 AM	30	0	52				23	90			65	77	337					0
	7:45 AM	37	0	56				15	112			60	68	348					0
	8:00 AM	51	1	59				21	105			50	66	353					0
	8:15 AM	40	0	63				19	79			55	65	321					0
	8:30 AM	36	2	50				19	99			63	70	339					0
	8:45 AM	32	0	55				17	106			60	63	333					0
	VOLUMES	273	5	443	0	0	0	154	744	0	0	444	536	2,599	0	0	0	0	0
	APPROACH %	38%	1%	61%	0%	0%	0%	17%	83%	0%	0%	45%	55%						
	APP/DEPART	721	/	695	0	/	0	898	/	1,187	980	/	717	0					
	BEGIN PEAK HR		7:45 AM																
	VOLUMES	164	3	228	0	0	0	74	395	0	0	228	269	1,361					
	APPROACH %	42%	1%	58%	0%	0%	0%	16%	84%	0%	0%	46%	54%						
	PEAK HR FACTOR		0.890			0.000			0.923			0.934		0.964					
	APP/DEPART	395	/	346	0	/	0	469	/	623	497	/	392	0					
PM	4:00 PM	20	1	43				37	80			103	90	374					0
	4:15 PM	25	0	42				37	84			114	82	384					0
	4:30 PM	14	0	41				51	77			127	112	422					0
	4:45 PM	10	1	45				42	77			112	116	403					0
	5:00 PM	9	0	34				56	70			124	91	384					0
	5:15 PM	14	1	42				45	71			115	73	361					0
	5:30 PM	6	0	36				53	52			98	110	355					0
	5:45 PM	12	1	37				23	51			95	77	296					0
	VOLUMES	110	4	320	0	0	0	344	562	0	0	888	751	2,979	0	0	0	0	0
	APPROACH %	25%	1%	74%	0%	0%	0%	38%	62%	0%	0%	54%	46%						
	APP/DEPART	434	/	1,099	0	/	0	906	/	882	1,639	/	998	0					
	BEGIN PEAK HR		4:15 PM																
	VOLUMES	58	1	162	0	0	0	186	308	0	0	477	401	1,593					
	APPROACH %	26%	0%	73%	0%	0%	0%	38%	62%	0%	0%	54%	46%						
	PEAK HR FACTOR		0.825			0.000			0.965			0.918		0.944					
	APP/DEPART	221	/	588	0	/	0	494	/	470	878	/	535	0					

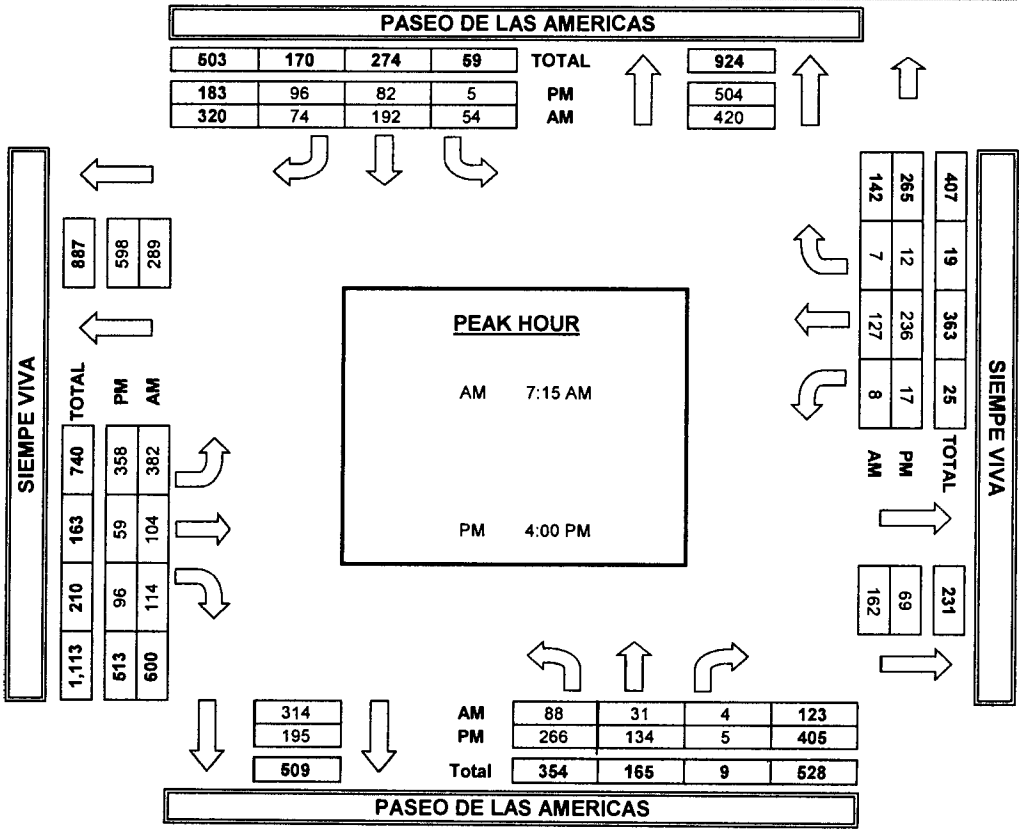


		PEDESTRIAN CROSSINGS					PEDESTRIAN ACTIVATIONS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM					0					0					0
	7:15 AM					0					0					0
	7:30 AM					0					0					0
	7:45 AM					0					0					0
	8:00 AM					0					0					0
	8:15 AM					0					0					0
	8:30 AM					0					0					0
	8:45 AM					0					0					0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM					0					0					0
	4:15 PM					0					0					0
	4:30 PM					0					0					0
	4:45 PM					0					0					0
	5:00 PM					0					0					0
	5:15 PM					0					0					0
	5:30 PM					0					0					0
	5:45 PM					0					0					0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PACIFIC TRAFFIC DATA SERVICES

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: PACIFIC TRAFFIC DATA SERVICES

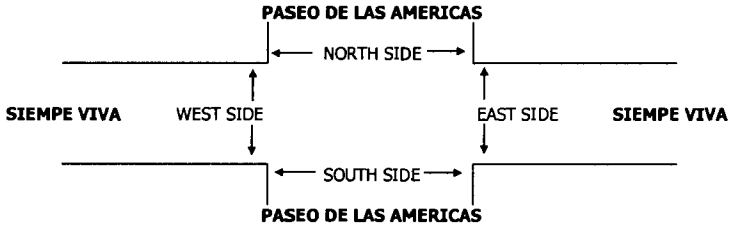
DATE:	LOCATION:	OTAY MESA	PROJECT #:	CA11-0218-05
2/15/11	NORTH & SOUTH:	PASEO DE LAS AMERICAS	LOCATION #:	15
TUESDAY	EAST & WEST:	SIEMPE VIVA	CONTROL:	SIGNAL

NOTES:

AM PM MD OTHER OTHER

N ▲ ◄ W E ► S ▼

		NORTHBOUND PASEO DE LAS AMERICAS			SOUTHBOUND PASEO DE LAS AMERICAS			EASTBOUND SIEMPE VIVA			WESTBOUND SIEMPE VIVA				U-TURNS				
	LANES:	NL 1	NT 2	NR 0	SL 1	ST 1.5	SR 0.5	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL	NB X	SB X	EB X	WB X	TTL
AM	7:00 AM	20	7	0	11	35	10	84	19	21	1	26	1	235			41		41
AM	7:15 AM	25	9	0	10	48	17	92	22	28	2	30	3	286			58		58
AM	7:30 AM	22	5	1	18	51	19	90	30	26	2	35	2	301			55		55
AM	7:45 AM	16	8	3	16	54	18	105	25	30	1	40	1	317			63		63
AM	8:00 AM	25	9	0	10	39	20	95	27	30	3	22	1	281			55		55
AM	8:15 AM	15	6	0	2	34	6	78	26	37	4	27	1	236			46		46
AM	8:30 AM	24	4	0	5	29	15	76	23	24	1	38	4	243			48		48
AM	8:45 AM	30	11	2	0	18	20	77	24	20	2	43	3	250			47		47
AM	VOLUMES	177	59	6	72	308	125	697	196	216	16	261	16	2,149	0	0	413	0	413
AM	APPROACH %	73%	24%	2%	14%	61%	25%	63%	18%	19%	5%	89%	5%						
AM	APP/DEPART	242	/	772	505	/	540	1,109	/	274	293	/	563	0					
AM	BEGIN PEAK HR		7:15 AM																
AM	VOLUMES	88	31	4	54	192	74	382	104	114	8	127	7	1,185					
AM	APPROACH %	72%	25%	3%	17%	60%	23%	64%	17%	19%	6%	89%	5%						
AM	PEAK HR FACTOR		0.904			0.909			0.938			0.845		0.935					
AM	APP/DEPART	123	/	420	320	/	314	600	/	162	142	/	289	0					
PM	4:00 PM	67	36	2	2	23	18	91	14	21	4	61	2	341			63		63
PM	4:15 PM	57	36	1	0	17	29	83	23	23	7	70	4	350			58		58
PM	4:30 PM	66	30	0	2	16	20	100	13	28	2	59	2	338			69		69
PM	4:45 PM	76	32	2	1	26	29	84	9	24	4	46	4	337			64		64
PM	5:00 PM	59	23	1	3	17	28	107	13	21	3	44	3	322			65		65
PM	5:15 PM	60	34	0	1	22	33	86	13	23	7	74	2	355			53		53
PM	5:30 PM	65	21	0	4	20	20	78	11	18	3	69	0	309			53		53
PM	5:45 PM	55	15	1	8	18	20	72	10	22	5	51	2	279			45		45
PM	VOLUMES	505	227	7	21	159	197	701	106	180	35	474	19	2,631	0	0	470	0	470
PM	APPROACH %	68%	31%	1%	6%	42%	52%	71%	11%	18%	7%	90%	4%						
PM	APP/DEPART	739	/	947	377	/	374	987	/	134	528	/	1,176	0					
PM	BEGIN PEAK HR		4:00 PM																
PM	VOLUMES	266	134	5	5	82	96	358	59	96	17	236	12	1,366					
PM	APPROACH %	66%	33%	1%	3%	45%	52%	70%	12%	19%	6%	89%	5%						
PM	PEAK HR FACTOR		0.920			0.817			0.910			0.818		0.976					
PM	APP/DEPART	405	/	504	183	/	195	513	/	69	265	/	598	0					



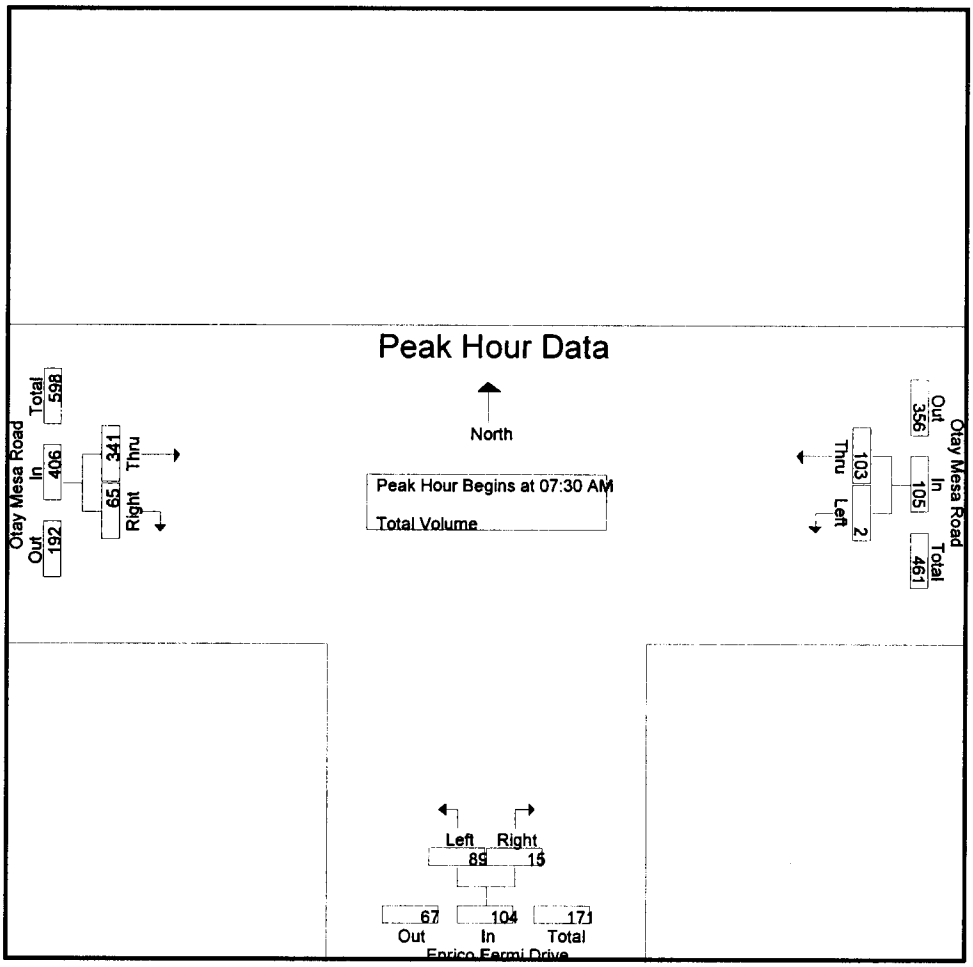
		PEDESTRIAN CROSSINGS					PEDESTRIAN ACTIVATIONS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM					0					0					0
AM	7:15 AM					0					0					0
AM	7:30 AM					0					0					0
AM	7:45 AM					0					0					0
AM	8:00 AM					0					0					0
AM	8:15 AM					0					0					0
AM	8:30 AM					0					0					0
AM	8:45 AM					0					0					0
AM	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM					0					0					0
PM	4:15 PM					0					0					0
PM	4:30 PM					0					0					0
PM	4:45 PM					0					0					0
PM	5:00 PM					0					0					0
PM	5:15 PM					0					0					0
PM	5:30 PM					0					0					0
PM	5:45 PM					0					0					0
PM	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

2010 Counts

Counts Unlimited Inc.
25286 Jaclyn Avenue
Moreno Valley, CA 92557
951-485-7934

County of San Diego
N/S: Enrico Fermi Drive
E/W: Otay Mesa Road
Weather: Sunny

File Name : SDCEFOMAM
Site Code : 10112011
Start Date : 5/27/2010
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

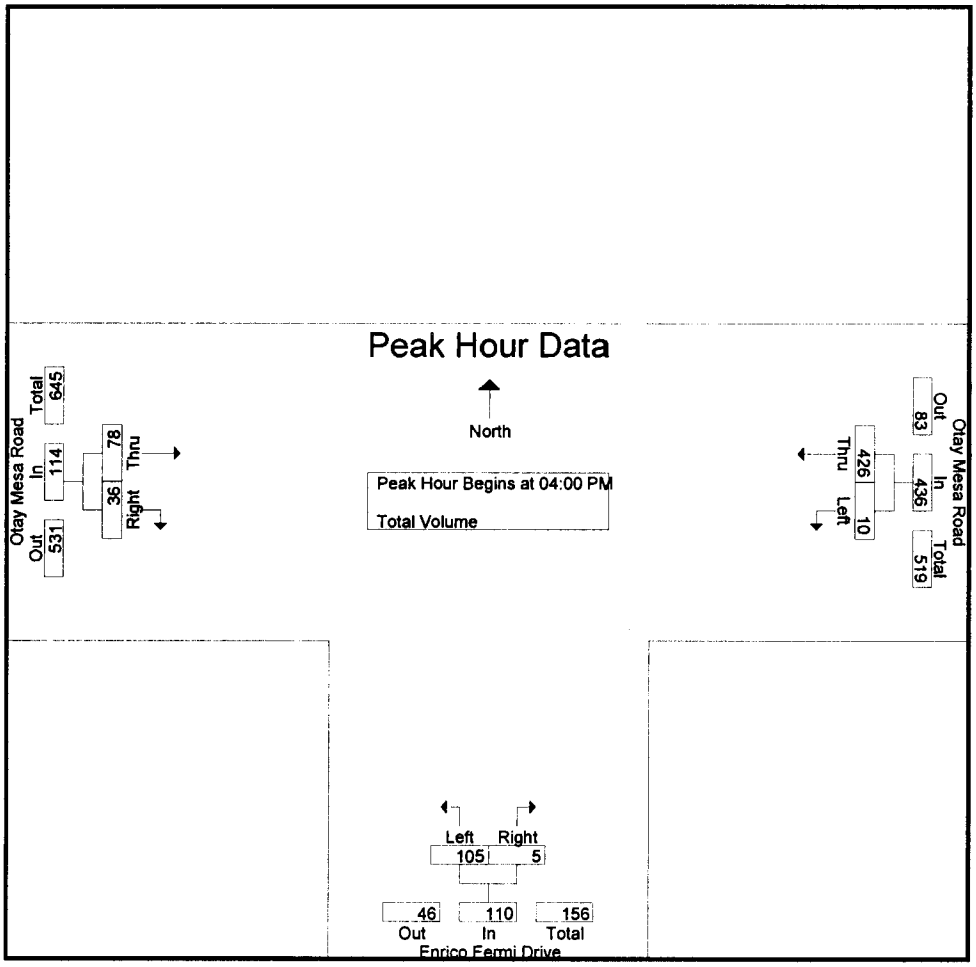
Peak Hour for Each Approach Begins at:

	07:45 AM			07:30 AM			07:15 AM		
+0 mins.	0	**39**	**39**	22	3	25	64	5	69
+15 mins.	1	27	28	**27**	3	**30**	103	6	109
+30 mins.	0	23	23	17	**6**	23	**132**	11	**143**
+45 mins.	**4**	22	**26**	23	3	26	62	**28**	90
Total Volume	5	111	116	89	15	104	361	50	411
% App. Total	4.3	95.7		85.6	14.4		87.8	12.2	
PHF	.313	.712	.744	.824	.625	.867	.684	.446	.719

Counts Unlimited Inc.
25286 Jaclyn Avenue
Moreno Valley, CA 92557
951-485-7934

County of San Diego
N/S: Enrico Fermi Drive
E/W: Otay Mesa Road
Weather: Sunny

File Name : SDCEFOMPM
Site Code : 10112011
Start Date : 5/26/2010
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:00 PM			05:00 PM			04:45 PM		
+0 mins.	4	**150**	**154**	27	5	32	**29**	8	**37**
+15 mins.	0	82	82	24	**6**	30	13	**14**	27
+30 mins.	1	118	119	**31**	5	**36**	26	6	32
+45 mins.	**5**	76	81	31	2	33	26	6	32
Total Volume	10	426	436	113	18	131	94	34	128
% App. Total	2.3	97.7		86.3	13.7		73.4	26.6	
PHF	.500	.710	.708	.911	.750	.910	.810	.607	.865

Counts Unlimited Inc.
25286 Jaclyn Avenue
Moreno Valley, CA 92557
951-485-7934

County of San Diego
N/S: Enrico Fermi Drive
E/W: Otay Mesa Road
Weather: Sunny

File Name : SDCEFOMAM
Site Code : 10112011
Start Date : 5/27/2010
Page No : 1

Groups Printed- Total Volume

	Otay Mesa Road Westbound			Enrico Fermi Drive Northbound			Otay Mesa Road Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	0	10	10	12	2	14	69	8	77	101
07:15 AM	2	14	16	21	2	23	64	5	69	108
07:30 AM	1	14	15	22	3	25	103	6	109	149
07:45 AM	0	39	39	27	3	30	132	11	143	212
Total	3	77	80	82	10	92	368	30	398	570
08:00 AM	1	27	28	17	6	23	62	28	90	141
08:15 AM	0	23	23	23	3	26	44	20	64	113
08:30 AM	4	22	26	20	1	21	40	10	50	97
08:45 AM	0	15	15	21	1	22	39	11	50	87
Total	5	87	92	81	11	92	185	69	254	438
Grand Total	8	164	172	163	21	184	553	99	652	1008
Apprch %	4.7	95.3		88.6	11.4		84.8	15.2		
Total %	0.8	16.3	17.1	16.2	2.1	18.3	54.9	9.8	64.7	

	Otay Mesa Road Westbound			Enrico Fermi Drive Northbound			Otay Mesa Road Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:30 AM										
07:30 AM	**1**	14	15	22	3	25	103	6	109	149
07:45 AM	0	**39**	**39**	**27**	3	**30**	**132**	11	**143**	**212**
08:00 AM	1	27	28	17	**6**	23	62	**28**	90	141
08:15 AM	0	23	23	23	3	26	44	20	64	113
Total Volume	2	103	105	89	15	104	341	65	406	615
% App. Total	1.9	98.1		85.6	14.4		84	16		
PHF	.500	.660	.673	.824	.625	.867	.646	.580	.710	.725

Counts Unlimited Inc.
25286 Jaclyn Avenue
Moreno Valley, CA 92557
951-485-7934

County of San Diego
N/S: Enrico Fermi Drive
E/W: Otay Mesa Road
Weather: Sunny

File Name : SDCEFOMPM
Site Code : 10112011
Start Date : 5/26/2010
Page No : 1

Groups Printed- Total Volume

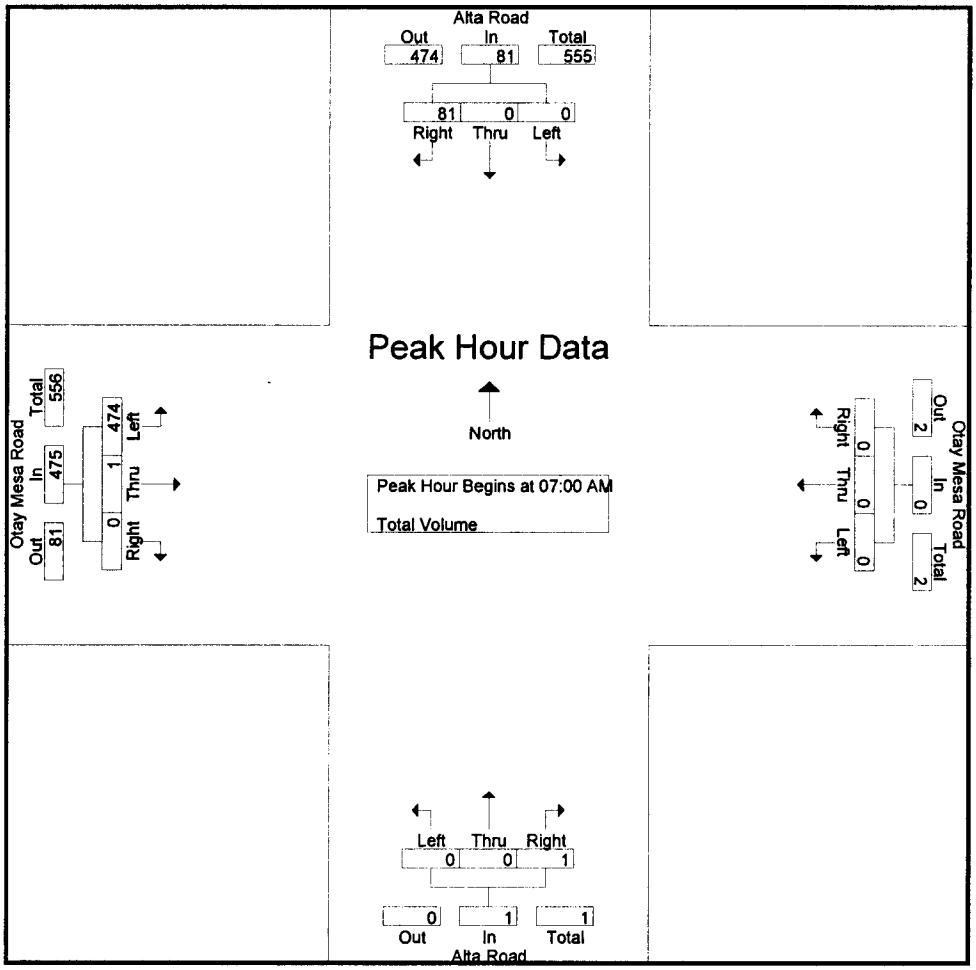
	Otay Mesa Road Westbound			Enrico Fermi Drive Northbound			Otay Mesa Road Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	4	150	154	21	0	21	11	11	22	197
04:15 PM	0	82	82	30	1	31	20	8	28	141
04:30 PM	1	118	119	30	0	30	18	9	27	176
04:45 PM	5	76	81	24	4	28	29	8	37	146
Total	10	426	436	105	5	110	78	36	114	660
05:00 PM	2	87	89	27	5	32	13	14	27	148
05:15 PM	8	36	44	24	6	30	26	6	32	106
05:30 PM	2	42	44	31	5	36	26	6	32	112
05:45 PM	0	23	23	31	2	33	30	3	33	89
Total	12	188	200	113	18	131	95	29	124	455
Grand Total	22	614	636	218	23	241	173	65	238	1115
Apprch %	3.5	96.5		90.5	9.5		72.7	27.3		
Total %	2	55.1	57	19.6	2.1	21.6	15.5	5.8	21.3	

	Otay Mesa Road Westbound			Enrico Fermi Drive Northbound			Otay Mesa Road Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	**4**	**150**	**154**	21	0	21	11	**11**	22	**197**
04:15 PM	0	82	82	**30**	1	**31**	20	8	28	141
04:30 PM	1	118	119	30	0	30	18	9	27	176
04:45 PM	**5**	76	81	24	**4**	28	**29**	8	**37**	146
Total Volume	10	426	436	105	5	110	78	36	114	660
% App. Total	2.3	97.7		95.5	4.5		68.4	31.6		
PHF	.500	.710	.708	.875	.313	.887	.672	.818	.770	.838

Counts Unlimited Inc.
25286 Jaclyn Avenue
Moreno Valley, CA 92557
951-485-7934

County of San Diego
N/S: Alta Road
E/W: Otay Mesa Road
Weather: Sunny

File Name : SDCALOTAM
Site Code : 10100001
Start Date : 5/6/2010
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

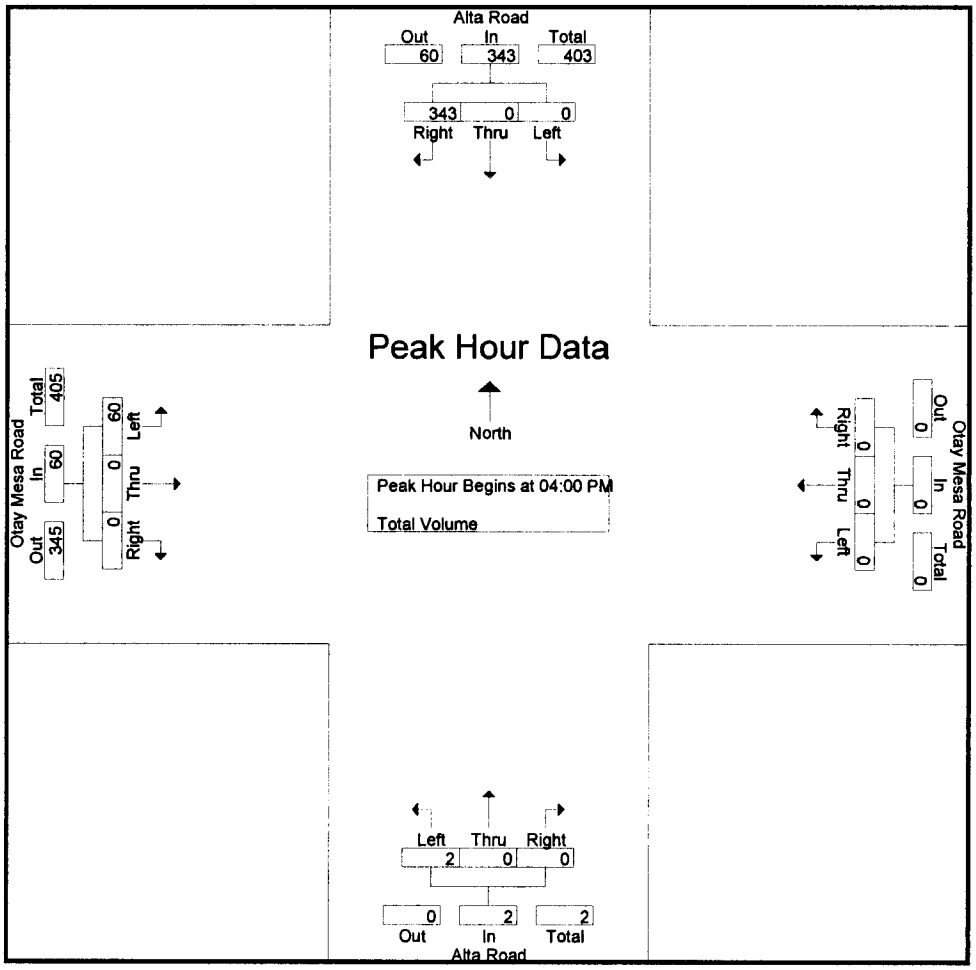
Peak Hour for Each Approach Begins at:

	07:30 AM				07:00 AM				07:30 AM				07:00 AM			
+0 mins.	0	0	30	30	0	0	0	0	0	0	0	0	111	0	0	111
+15 mins.	0	0	**32**	**32**	0	0	0	0	0	0	0	0	77	0	0	77
+30 mins.	0	0	14	14	0	0	0	0	1	0	0	1	130	**1**	0	131
+45 mins.	0	**1**	21	22	0	0	0	0	**2**	**1**	0	**3**	**156**	0	0	**156**
Total Volume	0	1	97	98	0	0	0	0	3	1	0	4	474	1	0	475
% App. Total	0	1	99		0	0	0		75	25	0		99.8	0.2	0	
PHF	.000	.250	.758	.766	.000	.000	.000	.000	.375	.250	.000	.333	.760	.250	.000	.761

Counts Unlimited Inc.
25286 Jaclyn Avenue
Moreno Valley, CA 92557
951-485-7934

County of San Diego
N/S: Alta Road
E/W: Otay Mesa Road
Weather: Sunny

File Name : SDCALOTPM
Site Code : 10100001
Start Date : 5/6/2010
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:00 PM				04:45 PM			
+0 mins.	0	0	122	122	0	0	0	0	2	0	0	2	20	0	0	20
+15 mins.	0	0	70	70	0	0	0	0	0	0	0	0	13	0	1	14
+30 mins.	0	0	98	98	0	0	0	0	0	0	0	0	25	0	0	25
+45 mins.	0	0	53	53	0	0	0	0	0	0	0	0	30	0	0	30
Total Volume	0	0	343	343	0	0	0	0	2	0	0	2	88	0	1	89
% App. Total	0	0	100		0	0	0		100	0	0		98.9	0	1.1	
PHF	.000	.000	.703	.703	.000	.000	.000	.000	.250	.000	.000	.250	.733	.000	.250	.742

Counts Unlimited Inc.
25286 Jaclyn Avenue
Moreno Valley, CA 92557
951-485-7934

County of San Diego
N/S: Alta Road
E/W: Otay Mesa Road
Weather: Sunny

File Name : SDCALOTAM
Site Code : 10100001
Start Date : 5/6/2010
Page No : 1

Groups Printed- Total Volume

	Alta Road Southbound				Otay Mesa Road Westbound				Alta Road Northbound				Otay Mesa Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	11	11	0	0	0	0	0	0	1	1	111	0	0	111	123
07:15 AM	0	0	8	8	0	0	0	0	0	0	0	0	77	0	0	77	85
07:30 AM	0	0	30	30	0	0	0	0	0	0	0	0	130	1	0	131	161
07:45 AM	0	0	32	32	0	0	0	0	0	0	0	0	156	0	0	156	188
Total	0	0	81	81	0	0	0	0	0	0	1	1	474	1	0	475	557
08:00 AM	0	0	14	14	0	0	0	0	1	0	0	1	66	1	1	68	83
08:15 AM	0	1	21	22	0	0	0	0	2	1	0	3	60	0	0	60	85
08:30 AM	0	0	19	19	0	0	0	0	0	0	0	0	46	0	0	46	65
08:45 AM	0	0	19	19	0	0	0	0	0	0	0	0	31	0	1	32	51
Total	0	1	73	74	0	0	0	0	3	1	0	4	203	1	2	206	284
Grand Total	0	1	154	155	0	0	0	0	3	1	1	5	677	2	2	681	841
Apprch %	0	0.6	99.4		0	0	0		60	20	20		99.4	0.3	0.3		
Total %	0	0.1	18.3	18.4	0	0	0	0	0.4	0.1	0.1	0.6	80.5	0.2	0.2	81	

	Alta Road Southbound				Otay Mesa Road Westbound				Alta Road Northbound				Otay Mesa Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	11	11	0	0	0	0	0	0	1	1	111	0	0	111	123
07:15 AM	0	0	8	8	0	0	0	0	0	0	0	0	77	0	0	77	85
07:30 AM	0	0	30	30	0	0	0	0	0	0	0	0	130	1	0	131	161
07:45 AM	0	0	32	32	0	0	0	0	0	0	0	0	156	0	0	156	188
Total Volume	0	0	81	81	0	0	0	0	0	0	1	1	474	1	0	475	557
% App. Total	0	0	100		0	0	0		0	0	100		99.8	0.2	0		
PHF	.000	.000	.633	.633	.000	.000	.000	.000	.000	.000	.250	.250	.760	.250	.000	.761	.741

Counts Unlimited Inc.
25286 Jaclyn Avenue
Moreno Valley, CA 92557
951-485-7934

County of San Diego
N/S: Alta Road
E/W: Otay Mesa Road
Weather: Sunny

File Name : SDCALOTPM
Site Code : 10100001
Start Date : 5/6/2010
Page No : 1

Groups Printed- Total Volume

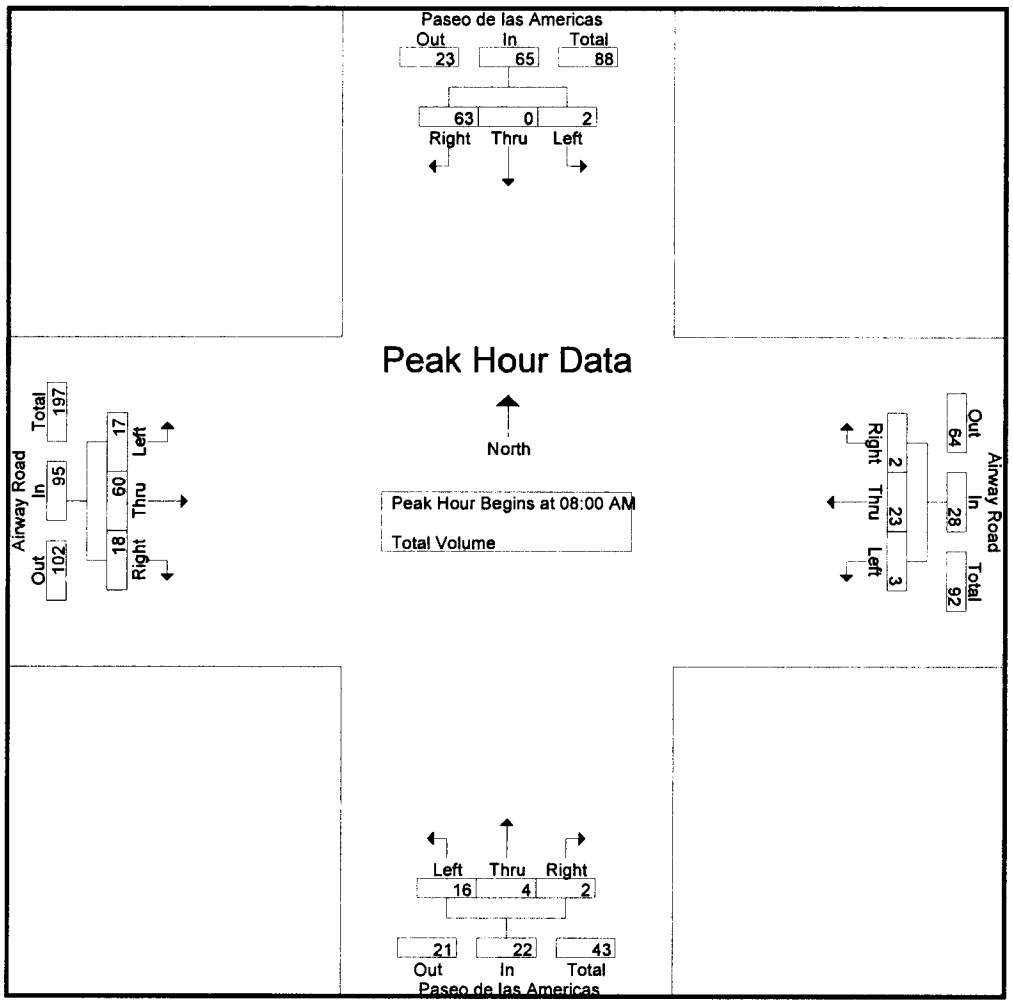
	Alta Road Southbound				Otay Mesa Road Westbound				Alta Road Northbound				Otay Mesa Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	122	122	0	0	0	0	2	0	0	2	13	0	0	13	137
04:15 PM	0	0	70	70	0	0	0	0	0	0	0	0	14	0	0	14	84
04:30 PM	0	0	98	98	0	0	0	0	0	0	0	0	13	0	0	13	111
04:45 PM	0	0	53	53	0	0	0	0	0	0	0	0	20	0	0	20	73
Total	0	0	343	343	0	0	0	0	2	0	0	2	60	0	0	60	405
05:00 PM	1	0	69	70	0	0	0	0	0	0	0	0	13	0	1	14	84
05:15 PM	0	0	36	36	0	0	0	0	0	1	0	1	25	0	0	25	62
05:30 PM	0	0	39	39	0	0	0	0	0	0	0	0	30	0	0	30	69
05:45 PM	0	0	24	24	0	0	0	0	0	0	0	0	19	0	0	19	43
Total	1	0	168	169	0	0	0	0	0	1	0	1	87	0	1	88	258
Grand Total	1	0	511	512	0	0	0	0	2	1	0	3	147	0	1	148	663
Apprch %	0.2	0	99.8		0	0	0		66.7	33.3	0		99.3	0	0.7		
Total %	0.2	0	77.1	77.2	0	0	0	0	0.3	0.2	0	0.5	22.2	0	0.2	22.3	

	Alta Road Southbound				Otay Mesa Road Westbound				Alta Road Northbound				Otay Mesa Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	**122**	**122**	0	0	0	0	**2**	0	0	**2**	13	0	0	13	**137**
04:15 PM	0	0	70	70	0	0	0	0	0	0	0	0	14	0	0	14	84
04:30 PM	0	0	98	98	0	0	0	0	0	0	0	0	13	0	0	13	111
04:45 PM	0	0	53	53	0	0	0	0	0	0	0	0	**20**	0	0	**20**	73
Total Volume	0	0	343	343	0	0	0	0	2	0	0	2	60	0	0	60	405
% App. Total	0	0	100		0	0	0		100	0	0		100	0	0		
PHF	.000	.000	.703	.703	.000	.000	.000	.000	.250	.000	.000	.250	.750	.000	.000	.750	.739

Counts Unlimited Inc.
25286 Jaclyn Avenue
Moreno Valley, CA 92557
951-485-7934

County of San Diego
N/S: Paseo de las Americas
E/W: Airway Road
Weather: Sunny

File Name : SDCPAAIAM
Site Code : 10112001
Start Date : 5/26/2010
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

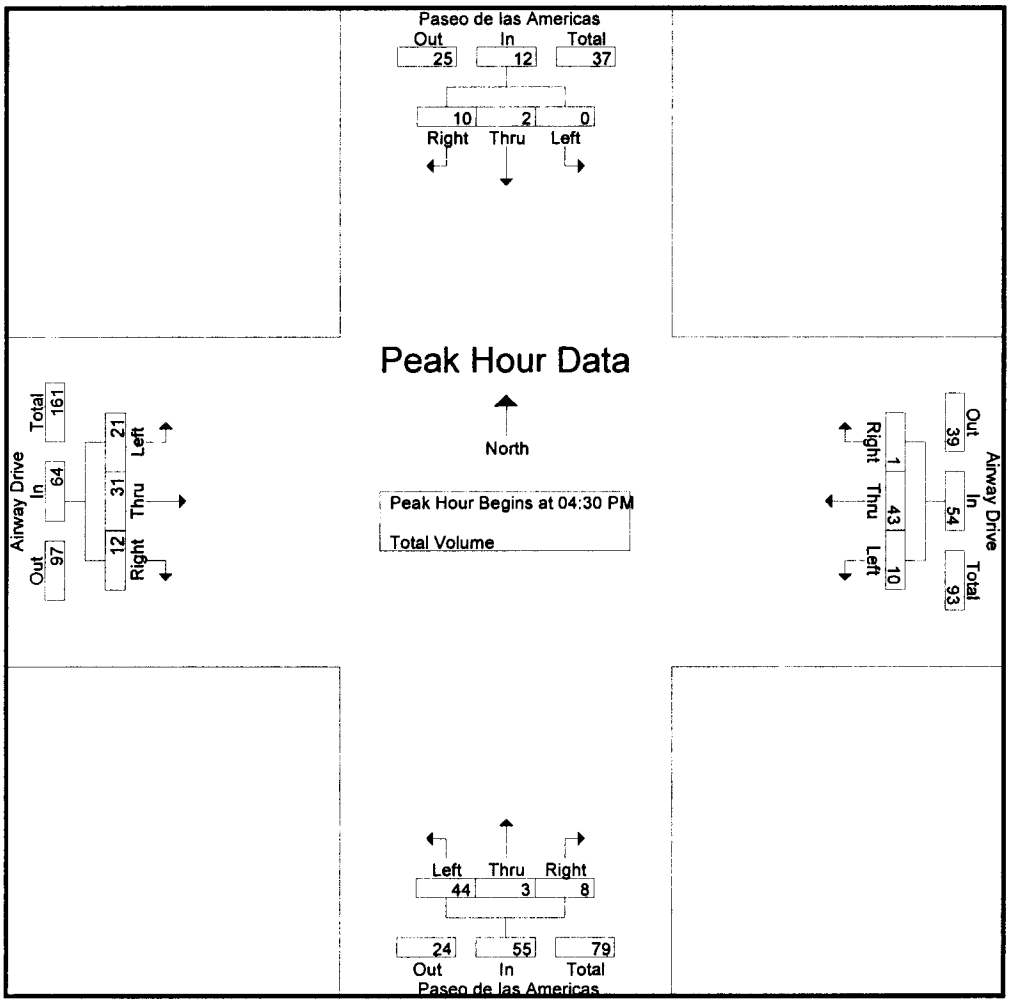
Peak Hour for Each Approach Begins at:

	08:00 AM				08:00 AM				08:00 AM				08:00 AM			
+0 mins.	1	0	5	6	0	4	0	4	5	0	0	5	7	20	8	35
+15 mins.	0	0	7	7	1	3	1	5	3	0	0	3	2	7	6	15
+30 mins.	1	0	33	34	2	11	1	14	6	3	0	9	4	15	1	20
+45 mins.	0	0	18	18	0	5	0	5	2	1	2	5	4	18	3	25
Total Volume	2	0	63	65	3	23	2	28	16	4	2	22	17	60	18	95
% App. Total	3.1	0	96.9		10.7	82.1	7.1		72.7	18.2	9.1		17.9	63.2	18.9	
PHF	.500	.000	.477	.478	.375	.523	.500	.500	.667	.333	.250	.611	.607	.750	.563	.679

Counts Unlimited Inc.
25286 Jaclyn Avenue
Moreno Valley, CA 92557
951-485-7934

County of San Diego
N/S: Paseo de las Americas
E/W: Airway Drive
Weather: Sunny

File Name : SDCPAAIPM
Site Code : 10112001
Start Date : 5/26/2010
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:45 PM				04:15 PM				04:45 PM				04:15 PM			
+0 mins.	0	0	2	2	3	11	0	14	11	1	1	13	3	**13**	1	17
+15 mins.	0	0	1	1	**4**	7	0	11	7	0	0	7	3	12	3	18
+30 mins.	0	1	**7**	**8**	2	8	0	10	**13**	**2**	**5**	**20**	4	8	1	13
+45 mins.	0	0	2	2	2	**16**	**1**	**19**	13	1	4	18	**10**	7	**7**	**24**
Total Volume	0	1	12	13	11	42	1	54	44	4	10	58	20	40	12	72
% App. Total	0	7.7	92.3		20.4	77.8	1.9		75.9	6.9	17.2		27.8	55.6	16.7	
PHF	.000	.250	.429	.406	.688	.656	.250	.711	.846	.500	.500	.725	.500	.769	.429	.750

Counts Unlimited Inc.
25286 Jaclyn Avenue
Moreno Valley, CA 92557
951-485-7934

County of San Diego
N/S: Paseo de las Americas
E/W: Airway Road
Weather: Sunny

File Name : SDCPAAIAM
Site Code : 10112001
Start Date : 5/26/2010
Page No : 1

Groups Printed- Total Volume

	Paseo de las Americas Southbound				Airway Road Westbound				Paseo de las Americas Northbound				Airway Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	1	1	0	2	0	1	1	2	4	4	0	8	12
07:15 AM	0	0	1	1	1	2	0	3	3	0	0	3	5	8	3	16	23
07:30 AM	0	0	1	1	3	1	0	4	2	0	0	2	6	5	1	12	19
07:45 AM	0	0	0	0	1	1	0	2	2	1	0	3	4	8	3	15	20
Total	0	0	2	2	6	5	0	11	7	2	1	10	19	25	7	51	74
08:00 AM	1	0	5	6	0	4	0	4	5	0	0	5	7	20	8	35	50
08:15 AM	0	0	7	7	1	3	1	5	3	0	0	3	2	7	6	15	30
08:30 AM	1	0	33	34	2	11	1	14	6	3	0	9	4	15	1	20	77
08:45 AM	0	0	18	18	0	5	0	5	2	1	2	5	4	18	3	25	53
Total	2	0	63	65	3	23	2	28	16	4	2	22	17	60	18	95	210
Grand Total	2	0	65	67	9	28	2	39	23	6	3	32	36	85	25	146	284
Apprch %	3	0	97		23.1	71.8	5.1		71.9	18.8	9.4		24.7	58.2	17.1		
Total %	0.7	0	22.9	23.6	3.2	9.9	0.7	13.7	8.1	2.1	1.1	11.3	12.7	29.9	8.8	51.4	

	Paseo de las Americas Southbound				Airway Road Westbound				Paseo de las Americas Northbound				Airway Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	1	0	5	6	0	4	0	4	5	0	0	5	7	20	8	35	50
08:15 AM	0	0	7	7	1	3	1	5	3	0	0	3	2	7	6	15	30
08:30 AM	1	0	33	34	2	11	1	14	6	3	0	9	4	15	1	20	77
08:45 AM	0	0	18	18	0	5	0	5	2	1	2	5	4	18	3	25	53
Total Volume	2	0	63	65	3	23	2	28	16	4	2	22	17	60	18	95	210
% App. Total	3.1	0	96.9		10.7	82.1	7.1		72.7	18.2	9.1		17.9	63.2	18.9		
PHF	.500	.000	.477	.478	.375	.523	.500	.500	.667	.333	.250	.611	.607	.750	.563	.679	.682

Counts Unlimited Inc.
25286 Jaclyn Avenue
Moreno Valley, CA 92557
951-485-7934

County of San Diego
N/S: Paseo de las Americas
E/W: Airway Drive
Weather: Sunny

File Name : SDCPAAIPM
Site Code : 10112001
Start Date : 5/26/2010
Page No : 1

Groups Printed- Total Volume

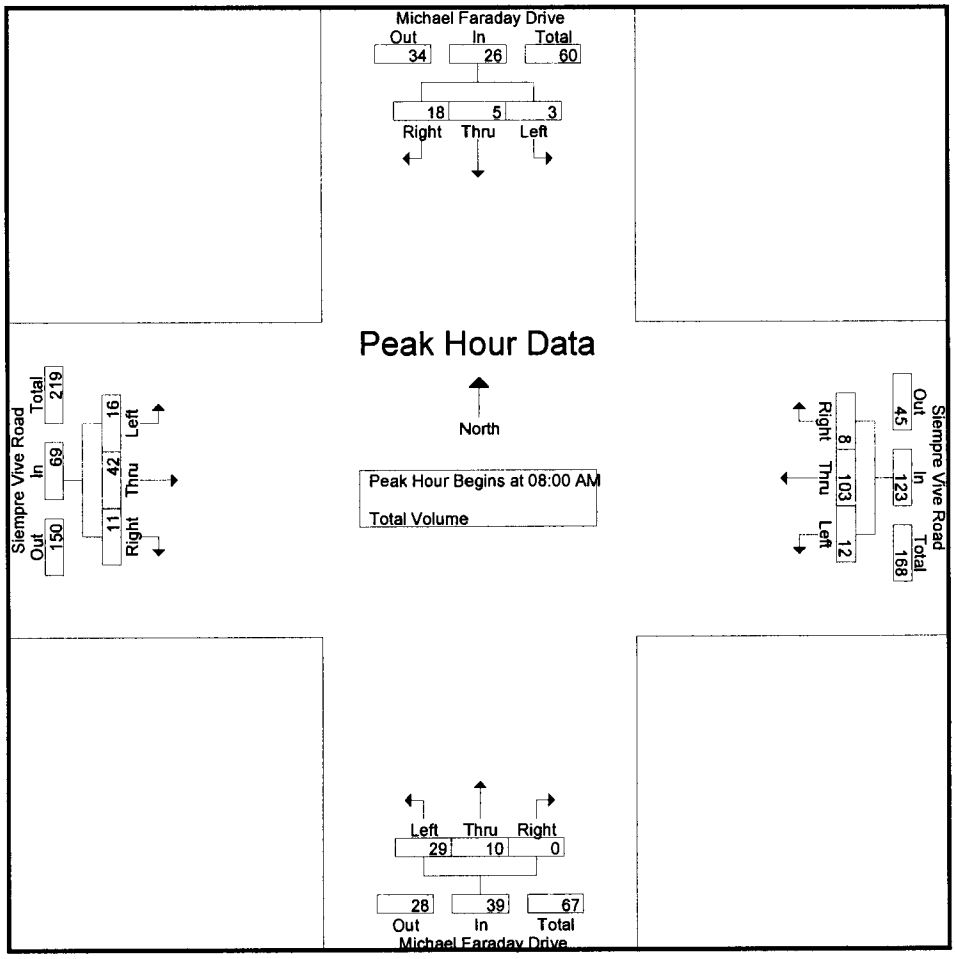
	Paseo de las Americas Southbound				Airway Drive Westbound				Paseo de las Americas Northbound				Airway Drive Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	1	2	3	0	10	3	13	14	1	6	21	3	9	2	14	51
04:15 PM	1	0	3	4	3	11	0	14	5	0	1	6	3	13	1	17	41
04:30 PM	0	1	0	1	4	7	0	11	13	0	2	15	3	12	3	18	45
04:45 PM	0	0	2	2	2	8	0	10	11	1	1	13	4	8	1	13	38
Total	1	2	7	10	9	36	3	48	43	2	10	55	13	42	7	62	175
05:00 PM	0	0	1	1	2	16	1	19	7	0	0	7	10	7	7	24	51
05:15 PM	0	1	7	8	2	12	0	14	13	2	5	20	4	4	1	9	51
05:30 PM	0	0	2	2	2	7	1	10	13	1	4	18	4	4	4	12	42
05:45 PM	0	0	1	1	0	5	0	5	2	1	2	5	0	4	0	4	15
Total	0	1	11	12	6	40	2	48	35	4	11	50	18	19	12	49	159
Grand Total	1	3	18	22	15	76	5	96	78	6	21	105	31	61	19	111	334
Apprch %	4.5	13.6	81.8		15.6	79.2	5.2		74.3	5.7	20		27.9	55	17.1		
Total %	0.3	0.9	5.4	6.6	4.5	22.8	1.5	28.7	23.4	1.8	6.3	31.4	9.3	18.3	5.7	33.2	

	Paseo de las Americas Southbound				Airway Drive Westbound				Paseo de las Americas Northbound				Airway Drive Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	**1**	0	1	4	7	0	11	**13**	0	2	15	3	**12**	3	18	45
04:45 PM	0	0	2	2	2	8	0	10	11	1	1	13	4	8	1	13	38
05:00 PM	0	0	1	**1**	2	**16**	**1**	**19**	7	0	0	7	**10**	7	**7**	**24**	**51**
05:15 PM	0	1	**7**	**8**	2	12	0	14	13	**2**	**5**	**20**	4	4	1	9	51
Total Volume	0	2	10	12	10	43	1	54	44	3	8	55	21	31	12	64	185
% App. Total	0	16.7	83.3		18.5	79.6	1.9		80	5.5	14.5		32.8	48.4	18.8		
PHF	.000	.500	.357	.375	.625	.672	.250	.711	.846	.375	.400	.688	.525	.646	.429	.667	.907

Counts Unlimited Inc.
25286 Jaclyn Avenue
Moreno Valley, CA 92557
951-485-7934

County of San Diego
N/S: Michael Faraday Drive
E/W: Siempre Viva Road
Weather: Sunny

File Name : SDCMFSVAM
Site Code : 10112111
Start Date : 5/25/2010
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	08:00 AM				07:00 AM				08:00 AM				07:15 AM			
+0 mins.	0	2	4	6	**3**	**34**	**3**	**40**	4	1	0	5	3	11	**10**	24
+15 mins.	0	**3**	4	7	2	31	0	33	10	**8**	0	**18**	**8**	12	8	**28**
+30 mins.	1	0	2	3	1	26	0	27	1	0	0	1	6	9	9	24
+45 mins.	**2**	0	**8**	**10**	2	24	0	26	**14**	1	0	15	7	**14**	7	28
Total Volume	3	5	18	26	8	115	3	126	29	10	0	39	24	46	34	104
% App. Total	11.5	19.2	69.2		6.3	91.3	2.4		74.4	25.6	0		23.1	44.2	32.7	
PHF	.375	.417	.563	.650	.667	.846	.250	.788	.518	.313	.000	.542	.750	.821	.850	.929

Counts Unlimited Inc.
25286 Jaclyn Avenue
Moreno Valley, CA 92557
951-485-7934

County of San Diego
N/S: Michael Faraday Drive
E/W: Siempre Viva Road
Weather: Sunny

File Name : SDCMFSVPM
Site Code : 10112001
Start Date : 5/25/2010
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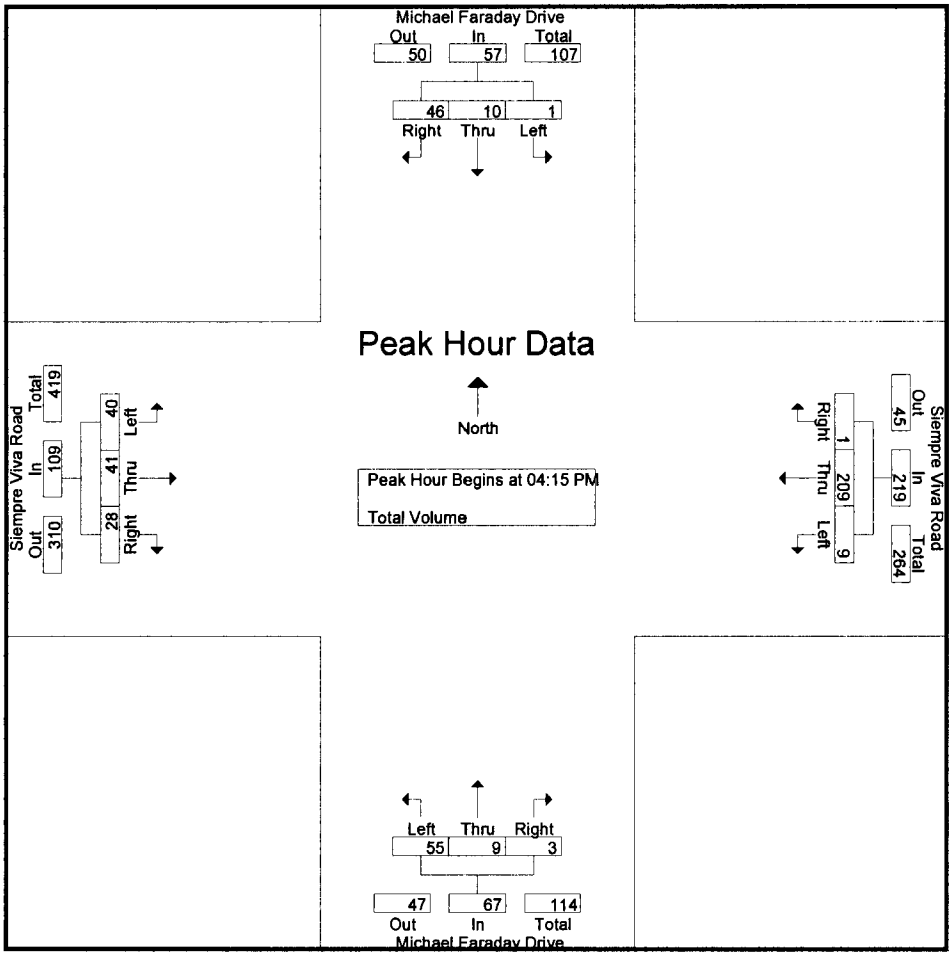


Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:15 PM				05:00 PM				05:00 PM				04:00 PM			
+0 mins.	0	**3**	**22**	**25**	0	**61**	0	**61**	22	1	0	23	7	15	7	29
+15 mins.	**1**	3	9	13	**5**	45	1	51	17	4	0	21	13	**16**	7	**36**
+30 mins.	0	3	7	10	1	54	0	55	**24**	1	0	**25**	7	8	6	21
+45 mins.	0	1	8	9	0	52	**2**	54	15	**5**	0	20	**17**	9	**9**	35
Total Volume	1	10	46	57	6	212	3	221	78	11	0	89	44	48	29	121
% App. Total	1.8	17.5	80.7		2.7	95.9	1.4		87.6	12.4	0		36.4	39.7	24	
PHF	.250	.833	.523	.570	.300	.869	.375	.906	.813	.550	.000	.890	.647	.750	.806	.840

Counts Unlimited Inc.
25286 Jaclyn Avenue
Moreno Valley, CA 92557
951-485-7934

County of San Diego
N/S: Michael Faraday Drive
E/W: Siempre Viva Road
Weather: Sunny

File Name : SDCMFSVAM
Site Code : 10112111
Start Date : 5/25/2010
Page No : 1

Groups Printed- Total Volume

	Michael Faraday Drive Southbound				Siempre Vive Road Westbound				Michael Faraday Drive Northbound				Siempre Vive Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	1	2	3	3	34	3	40	0	0	0	0	4	4	3	11	54
07:15 AM	0	1	2	3	2	31	0	33	4	0	0	4	3	11	10	24	64
07:30 AM	0	0	6	6	1	26	0	27	1	1	2	4	8	12	8	28	65
07:45 AM	0	1	3	4	2	24	0	26	5	0	0	5	6	9	9	24	59
Total	0	3	13	16	8	115	3	126	10	1	2	13	21	36	30	87	242
08:00 AM	0	2	4	6	1	18	0	19	4	1	0	5	7	14	7	28	58
08:15 AM	0	3	4	7	5	23	3	31	10	8	0	18	4	8	3	15	71
08:30 AM	1	0	2	3	2	30	3	35	1	0	0	1	0	8	0	8	47
08:45 AM	2	0	8	10	4	32	2	38	14	1	0	15	5	12	1	18	81
Total	3	5	18	26	12	103	8	123	29	10	0	39	16	42	11	69	257
Grand Total	3	8	31	42	20	218	11	249	39	11	2	52	37	78	41	156	499
Apprch %	7.1	19	73.8		8	87.6	4.4		75	21.2	3.8		23.7	50	26.3		
Total %	0.6	1.6	6.2	8.4	4	43.7	2.2	49.9	7.8	2.2	0.4	10.4	7.4	15.6	8.2	31.3	

	Michael Faraday Drive Southbound				Siempre Vive Road Westbound				Michael Faraday Drive Northbound				Siempre Vive Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	0	2	4	6	1	18	0	19	4	1	0	5	**7**	**14**	**7**	**28**	58
08:15 AM	0	**3**	4	7	**5**	23	**3**	31	10	**8**	0	**18**	4	8	3	15	71
08:30 AM	1	0	2	3	2	30	3	35	1	0	0	1	0	8	0	8	47
08:45 AM	**2**	0	**8**	**10**	4	**32**	2	**38**	**14**	1	0	15	5	12	1	18	**81**
Total Volume	3	5	18	26	12	103	8	123	29	10	0	39	16	42	11	69	257
% App. Total	11.5	19.2	69.2		9.8	83.7	6.5		74.4	25.6	0		23.2	60.9	15.9		
PHF	.375	.417	.563	.650	.600	.805	.667	.809	.518	.313	.000	.542	.571	.750	.393	.616	.793

Counts Unlimited Inc.
25286 Jaclyn Avenue
Moreno Valley, CA 92557
951-485-7934

County of San Diego
N/S: Michael Faraday Drive
E/W: Siempre Viva Road
Weather: Sunny

File Name : SDCMFSVPM
Site Code : 10112001
Start Date : 5/25/2010
Page No : 1

Groups Printed- Total Volume

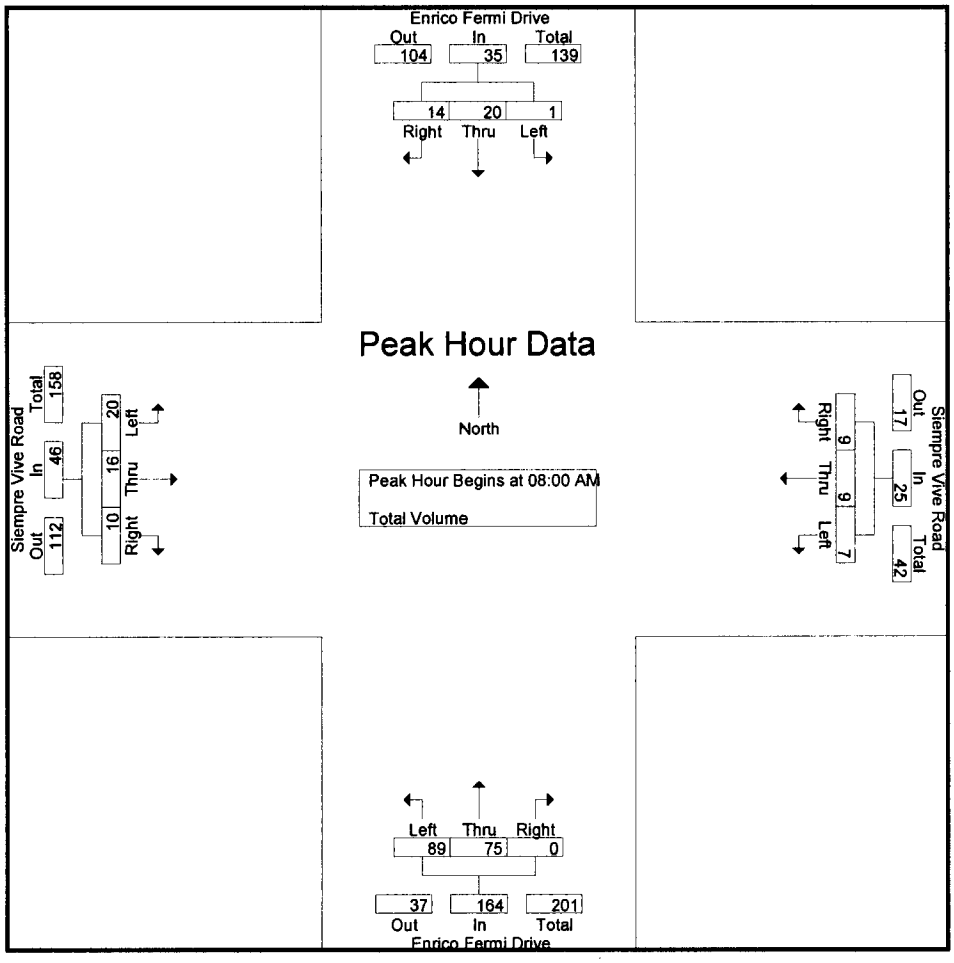
	Michael Faraday Drive Southbound				Siempre Viva Road Westbound				Michael Faraday Drive Northbound				Siempre Viva Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	2	2	4	39	0	43	1	0	2	3	7	15	7	29	77
04:15 PM	0	3	22	25	2	52	0	54	10	5	1	16	13	16	7	36	131
04:30 PM	1	3	9	13	3	48	0	51	16	3	2	21	7	8	6	21	106
04:45 PM	0	3	7	10	4	48	1	53	7	0	0	7	17	9	9	35	105
Total	1	9	40	50	13	187	1	201	34	8	5	47	44	48	29	121	419
05:00 PM	0	1	8	9	0	61	0	61	22	1	0	23	3	8	6	17	110
05:15 PM	1	3	8	12	5	45	1	51	17	4	0	21	5	7	4	16	100
05:30 PM	0	2	11	13	1	54	0	55	24	1	0	25	11	5	8	24	117
05:45 PM	1	7	7	15	0	52	2	54	15	5	0	20	5	8	6	19	108
Total	2	13	34	49	6	212	3	221	78	11	0	89	24	28	24	76	435
Grand Total	3	22	74	99	19	399	4	422	112	19	5	136	68	76	53	197	854
Apprch %	3	22.2	74.7		4.5	94.5	0.9		82.4	14	3.7		34.5	38.6	26.9		
Total %	0.4	2.6	8.7	11.6	2.2	46.7	0.5	49.4	13.1	2.2	0.6	15.9	8	8.9	6.2	23.1	

	Michael Faraday Drive Southbound				Siempre Viva Road Westbound				Michael Faraday Drive Northbound				Siempre Viva Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	0	**3**	**22**	**25**	2	52	0	54	10	**5**	1	16	13	**16**	7	**36**	**131**
04:30 PM	**1**	3	9	13	3	48	0	51	16	3	**2**	21	7	8	6	21	106
04:45 PM	0	3	7	10	**4**	48	**1**	53	7	0	0	7	**17**	9	**9**	35	105
05:00 PM	0	1	8	9	0	**61**	0	**61**	**22**	1	0	**23**	3	8	6	17	110
Total Volume	1	10	46	57	9	209	1	219	55	9	3	67	40	41	28	109	452
% App. Total	1.8	17.5	80.7		4.1	95.4	0.5		82.1	13.4	4.5		36.7	37.6	25.7		
PHF	.250	.833	.523	.570	.563	.857	.250	.898	.625	.450	.375	.728	.588	.641	.778	.757	.863

Counts Unlimited Inc.
25286 Jaclyn Avenue
Moreno Valley, CA 92557
951-485-7934

County of San Diego
N/S: Enrico Fermi Drive
E/W: Siempre Viva Road
Weather: Sunny

File Name : SDCEFSVAM
Site Code : 10112111
Start Date : 5/25/2010
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	08:00 AM				07:30 AM				07:00 AM				08:00 AM			
+0 mins.	0	6	0	6	1	1	2	4	**30**	19	0	49	**9**	2	**5**	**16**
+15 mins.	0	3	4	7	1	1	1	3	24	**26**	0	**50**	4	2	3	9
+30 mins.	0	4	3	7	2	**3**	2	7	26	20	0	46	2	4	2	8
+45 mins.	**1**	**7**	**7**	**15**	**5**	3	**3**	**11**	25	18	0	43	5	**8**	0	13
Total Volume	1	20	14	35	9	8	8	25	105	83	0	188	20	16	10	46
% App. Total	2.9	57.1	40		36	32	32		55.9	44.1	0		43.5	34.8	21.7	
PHF	.250	.714	.500	.583	.450	.667	.667	.568	.875	.798	.000	.940	.556	.500	.500	.719

Counts Unlimited Inc.
25286 Jaclyn Avenue
Moreno Valley, CA 92557
951-485-7934

County of San Diego
N/S: Enrico Fermi
E/W: Siempre Viva Road
Weather: Sunny

File Name : SDCEFSVPM
Site Code : 10112001
Start Date : 5/25/2010
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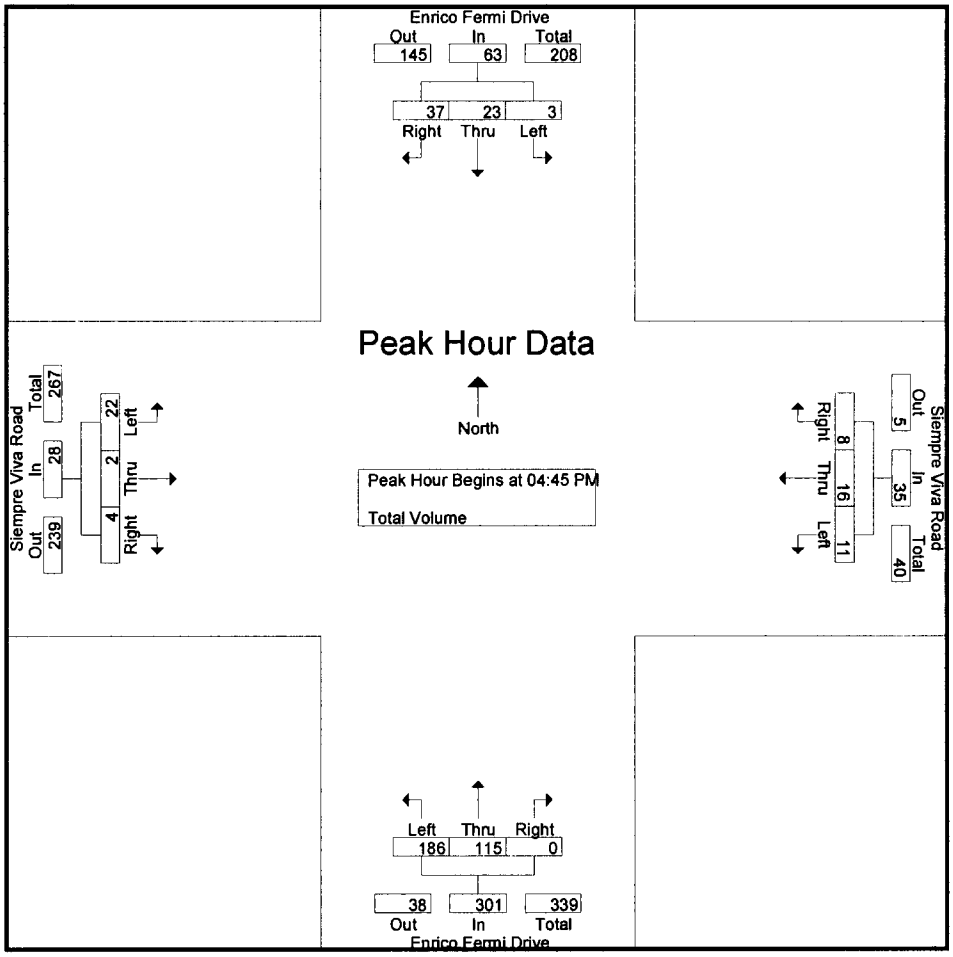


Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:15 PM				04:00 PM				04:45 PM				04:00 PM			
+0 mins.	**1**	7	6	14	**6**	3	0	9	49	30	0	79	**8**	0	**1**	**9**
+15 mins.	1	3	3	7	3	4	2	9	47	28	0	75	7	**1**	1	9
+30 mins.	1	**8**	6	15	1	**9**	**3**	**13**	36	24	0	60	8	0	0	8
+45 mins.	1	8	**19**	**28**	3	7	3	13	**54**	**33**	0	**87**	8	0	1	9
Total Volume	4	26	34	64	13	23	8	44	186	115	0	301	31	1	3	35
% App. Total	6.2	40.6	53.1		29.5	52.3	18.2		61.8	38.2	0		88.6	2.9	8.6	
PHF	1.000	.813	.447	.571	.542	.639	.667	.846	.861	.871	.000	.865	.969	.250	.750	.972

Counts Unlimited Inc.
25286 Jaclyn Avenue
Moreno Valley, CA 92557
951-485-7934

County of San Diego
N/S: Enrico Fermi Drive
E/W: Siempre Viva Road
Weather: Sunny

File Name : SDCEFSVAM
Site Code : 10112111
Start Date : 5/25/2010
Page No : 1

Groups Printed- Total Volume

	Enrico Fermi Drive Southbound				Siempre Vive Road Westbound				Enrico Fermi Drive Northbound				Siempre Vive Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	1	6	2	9	1	6	1	8	30	19	0	49	2	0	1	3	69
07:15 AM	1	4	2	7	1	4	0	5	24	26	0	50	4	0	5	9	71
07:30 AM	0	6	2	8	1	1	2	4	26	20	0	46	6	0	2	8	66
07:45 AM	1	6	0	7	1	1	1	3	25	18	0	43	2	0	3	5	58
Total	3	22	6	31	4	12	4	20	105	83	0	188	14	0	11	25	264
08:00 AM	0	6	0	6	2	3	2	7	14	12	0	26	9	2	5	16	55
08:15 AM	0	3	4	7	5	3	3	11	22	21	0	43	4	2	3	9	70
08:30 AM	0	4	3	7	0	2	2	4	25	20	0	45	2	4	2	8	64
08:45 AM	1	7	7	15	0	1	2	3	28	22	0	50	5	8	0	13	81
Total	1	20	14	35	7	9	9	25	89	75	0	164	20	16	10	46	270
Grand Total	4	42	20	66	11	21	13	45	194	158	0	352	34	16	21	71	534
Apprch %	6.1	63.6	30.3		24.4	46.7	28.9		55.1	44.9	0		47.9	22.5	29.6		
Total %	0.7	7.9	3.7	12.4	2.1	3.9	2.4	8.4	36.3	29.6	0	65.9	6.4	3	3.9	13.3	

	Enrico Fermi Drive Southbound				Siempre Vive Road Westbound				Enrico Fermi Drive Northbound				Siempre Vive Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	0	6	0	6	2	**3**	2	7	14	12	0	26	**9**	2	**5**	**16**	55
08:15 AM	0	3	4	7	**5**	3	**3**	**11**	22	21	0	43	4	2	3	9	70
08:30 AM	0	4	3	7	0	2	2	4	25	20	0	45	2	4	2	8	64
08:45 AM	**1**	**7**	**7**	**15**	0	1	2	3	**28**	**22**	0	**50**	5	**8**	**0**	13	**81**
Total Volume	1	20	14	35	7	9	9	25	89	75	0	164	20	16	10	46	270
% App. Total	2.9	57.1	40		28	36	36		54.3	45.7	0		43.5	34.8	21.7		
PHF	.250	.714	.500	.583	.350	.750	.750	.568	.795	.852	.000	.820	.556	.500	.500	.719	.833

Counts Unlimited Inc.
25286 Jaclyn Avenue
Moreno Valley, CA 92557
951-485-7934

County of San Diego
N/S: Enrico Fermi
E/W: Siempre Viva Road
Weather: Sunny

File Name : SDCEFSVPM
Site Code : 10112001
Start Date : 5/25/2010
Page No : 1

Groups Printed- Total Volume

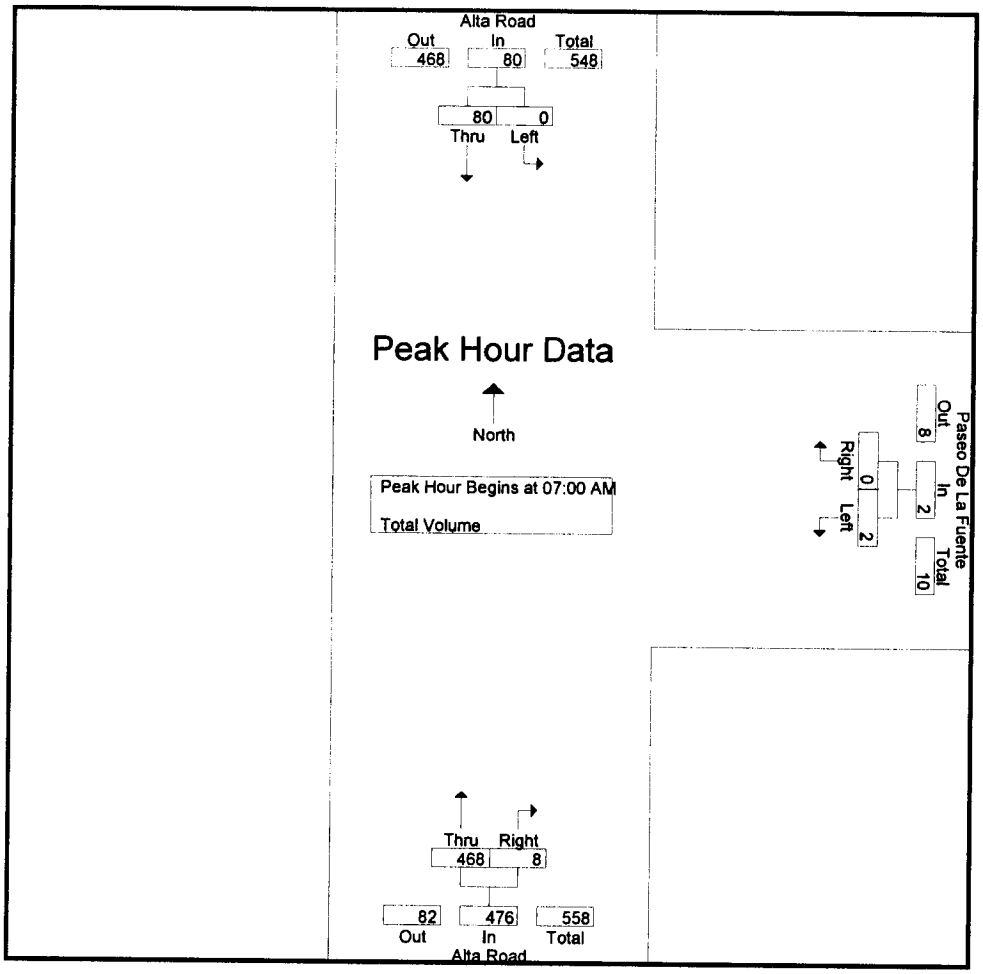
	Enrico Fermi Drive Southbound				Siempre Viva Road Westbound				Enrico Fermi Drive Northbound				Siempre Viva Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	8	3	11	6	3	0	9	34	19	0	53	8	0	1	9	82
04:15 PM	1	7	6	14	3	4	2	9	41	23	0	64	7	1	1	9	96
04:30 PM	1	3	3	7	1	9	3	13	44	18	0	62	8	0	0	8	90
04:45 PM	1	8	6	15	3	7	3	13	49	30	0	79	8	0	1	9	116
Total	3	26	18	47	13	23	8	44	168	90	0	258	31	1	3	35	384
05:00 PM	1	8	19	28	3	3	3	9	47	28	0	75	4	1	1	6	118
05:15 PM	0	3	7	10	3	2	1	6	36	24	0	60	9	0	2	11	87
05:30 PM	1	4	5	10	2	4	1	7	54	33	0	87	1	1	0	2	106
05:45 PM	1	7	7	15	0	1	2	3	45	32	0	77	5	8	0	13	108
Total	3	22	38	63	8	10	7	25	182	117	0	299	19	10	3	32	419
Grand Total	6	48	56	110	21	33	15	69	350	207	0	557	50	11	6	67	803
Apprch %	5.5	43.6	50.9		30.4	47.8	21.7		62.8	37.2	0		74.6	16.4	9		
Total %	0.7	6	7	13.7	2.6	4.1	1.9	8.6	43.6	25.8	0	69.4	6.2	1.4	0.7	8.3	

	Enrico Fermi Drive Southbound				Siempre Viva Road Westbound				Enrico Fermi Drive Northbound				Siempre Viva Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	**1**	**8**	6	15	**3**	**7**	**3**	**13**	49	30	0	79	8	0	**1**	9	116
05:00 PM	1	8	**19**	**28**	3	3	3	9	47	28	0	75	4	**1**	1	6	**118**
05:15 PM	0	3	7	10	3	2	1	6	36	24	0	60	**9**	0	**2**	**11**	87
05:30 PM	1	4	5	10	2	4	1	7	**54**	**33**	0	**87**	1	1	0	2	106
Total Volume	3	23	37	63	11	16	8	35	186	115	0	301	22	2	4	28	427
% App. Total	4.8	36.5	58.7		31.4	45.7	22.9		61.8	38.2	0		78.6	7.1	14.3		
PHF	.750	.719	.487	.563	.917	.571	.667	.673	.861	.871	.000	.865	.611	.500	.500	.636	.905

Counts Unlimited Inc.
25286 Jaclyn Avenue
Moreno Valley, CA 92557
951-485-7934

County of San Diego
N/S: Alta Road
E/W: Paseo De La Fuente
Weather: Sunny

File Name : SDCALPFAM
Site Code : 10100001
Start Date : 5/6/2010
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

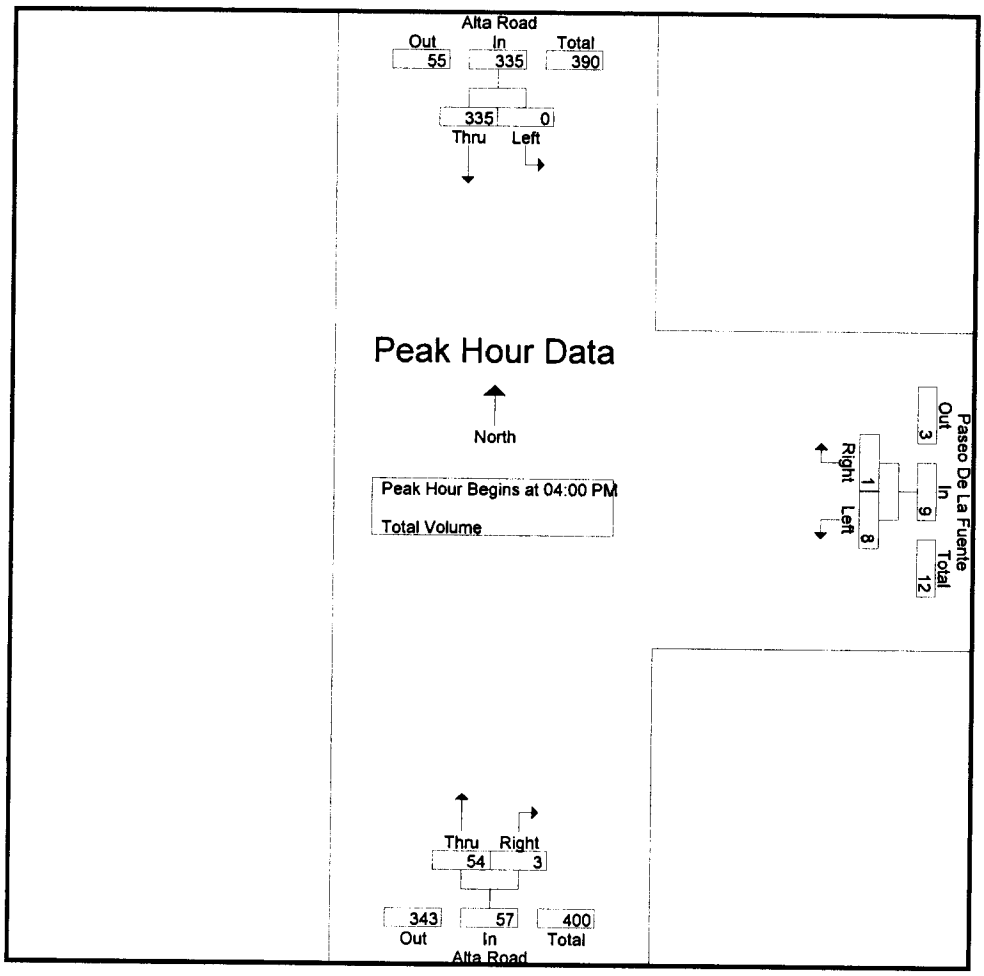
Peak Hour for Each Approach Begins at:

	07:30 AM			07:00 AM			07:00 AM		
+0 mins.	0	29	29	0	0	0	105	4	109
+15 mins.	0	32	32	0	0	0	78	0	78
+30 mins.	0	14	14	2	0	2	127	3	130
+45 mins.	0	21	21	0	0	0	158	1	159
Total Volume	0	96	96	2	0	2	468	8	476
% App. Total	0	100		100	0		98.3	1.7	
PHF	.000	.750	.750	.250	.000	.250	.741	.500	.748

Counts Unlimited Inc.
25286 Jaclyn Avenue
Moreno Valley, CA 92557
951-485-7934

County of San Diego
N/S: Alta Road
E/W: Paseo De La Fuente
Weather: Sunny

File Name : SDCALPFPM
Site Code : 10100001
Start Date : 5/6/2010
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:00 PM			04:00 PM			04:45 PM		
+0 mins.	0	**119**	**119**	**3**	0	3	18	1	19
+15 mins.	0	69	69	0	0	0	14	0	14
+30 mins.	0	96	96	3	1	4	21	3	24
+45 mins.	0	51	51	2	0	2	**30**	2	**32**
Total Volume	0	335	335	8	1	9	83	6	89
% App. Total	0	100		88.9	11.1		93.3	6.7	
PHF	.000	.704	.704	.667	.250	.563	.692	.500	.695

Counts Unlimited Inc.
25286 Jaclyn Avenue
Moreno Valley, CA 92557
951-485-7934

County of San Diego
N/S: Alta Road
E/W: Paseo De La Fuente
Weather: Sunny

File Name : SDCALPFAM
Site Code : 10100001
Start Date : 5/6/2010
Page No : 1

Groups Printed- Total Volume

	Alta Road Southbound			Paseo De La Fuente Westbound			Alta Road Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	0	11	11	0	0	0	105	4	109	120
07:15 AM	0	8	8	0	0	0	78	0	78	86
07:30 AM	0	29	29	2	0	2	127	3	130	161
07:45 AM	0	32	32	0	0	0	158	1	159	191
Total	0	80	80	2	0	2	468	8	476	558
08:00 AM	0	14	14	0	0	0	64	0	64	78
08:15 AM	0	21	21	0	0	0	58	2	60	81
08:30 AM	0	18	18	1	0	1	47	1	48	67
08:45 AM	0	17	17	1	0	1	30	1	31	49
Total	0	70	70	2	0	2	199	4	203	275
Grand Total	0	150	150	4	0	4	667	12	679	833
Apprch %	0	100		100	0		98.2	1.8		
Total %	0	18	18	0.5	0	0.5	80.1	1.4	81.5	

	Alta Road Southbound			Paseo De La Fuente Westbound			Alta Road Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	0	11	11	0	0	0	105	4	109	120
07:15 AM	0	8	8	0	0	0	78	0	78	86
07:30 AM	0	29	29	2	0	2	127	3	130	161
07:45 AM	0	32	32	0	0	0	158	1	159	191
Total Volume	0	80	80	2	0	2	468	8	476	558
% App. Total	0	100		100	0		98.3	1.7		
PHF	.000	.625	.625	.250	.000	.250	.741	.500	.748	.730

Counts Unlimited Inc.
25286 Jaclyn Avenue
Moreno Valley, CA 92557
951-485-7934

County of San Diego
N/S: Alta Road
E/W: Paseo De La Fuente
Weather: Sunny

File Name : SDCALPFPM
Site Code : 10100001
Start Date : 5/6/2010
Page No : 1

Groups Printed- Total Volume

	Alta Road Southbound			Paseo De La Fuente Westbound			Alta Road Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	0	119	119	3	0	3	13	0	13	135
04:15 PM	0	69	69	0	0	0	13	0	13	82
04:30 PM	0	96	96	3	1	4	10	2	12	112
04:45 PM	0	51	51	2	0	2	18	1	19	72
Total	0	335	335	8	1	9	54	3	57	401
05:00 PM	0	68	68	2	0	2	14	0	14	84
05:15 PM	0	35	35	1	0	1	21	3	24	60
05:30 PM	0	38	38	0	0	0	30	2	32	70
05:45 PM	0	25	25	3	0	3	17	1	18	46
Total	0	166	166	6	0	6	82	6	88	260
Grand Total	0	501	501	14	1	15	136	9	145	661
Apprch %	0	100		93.3	6.7		93.8	6.2		
Total %	0	75.8	75.8	2.1	0.2	2.3	20.6	1.4	21.9	

	Alta Road Southbound			Paseo De La Fuente Westbound			Alta Road Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	**119**	**119**	**3**	0	3	13	0	13	**135**
04:15 PM	0	69	69	0	0	0	13	0	13	82
04:30 PM	0	96	96	3	**1**	**4**	10	**2**	12	112
04:45 PM	0	51	51	2	0	2	**18**	1	**19**	72
Total Volume	0	335	335	8	1	9	54	3	57	401
% App. Total	0	100		88.9	11.1		94.7	5.3		
PHF	.000	.704	.704	.667	.250	.563	.750	.375	.750	.743

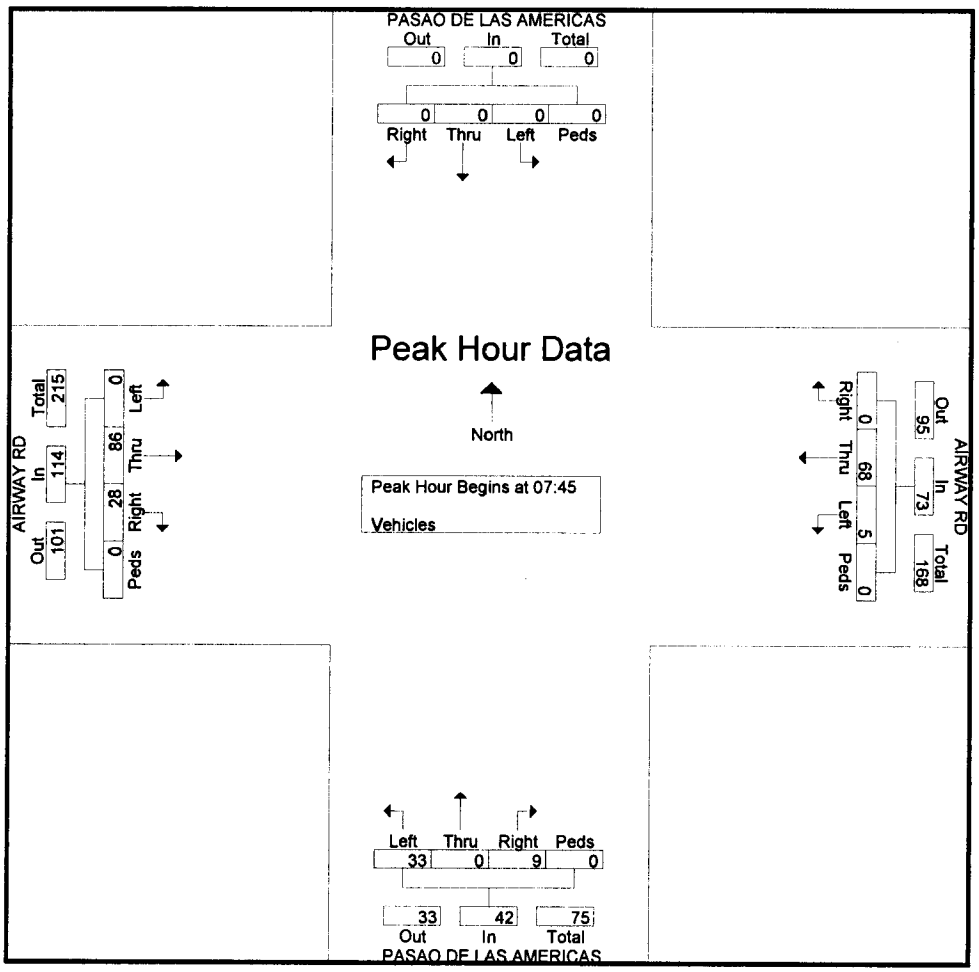
2008 Counts

True Count

3401 First Ave #123
San Diego, CA 92103

File Name : 8021.11.PASAO DE LAS AMERICAS.AIRWAY RD
Site Code : 00000000
Start Date : 3/4/2008
Page No : 2

	PASAO DE LAS AMERICAS Southbound					AIRWAY RD Westbound					PASAO DE LAS AMERICAS Northbound					AIRWAY RD 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 Analysis From 07:00 to 11:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45																					
07:45	0	0	0	0	0	1	**22**	0	0	**23**	5	0	1	0	6	0	23	**12**	0	**35**	**64**
08:00	0	0	0	0	0	1	16	0	0	17	**16**	0	**3**	0	**19**	0	20	6	0	26	62
08:15	0	0	0	0	0	1	11	0	0	12	6	0	3	0	9	0	**24**	8	0	32	53
08:30	0	0	0	0	0	**2**	**19**	0	0	21	6	0	2	0	8	0	19	2	0	21	50
Total Volume	0	0	0	0	0	5	68	0	0	73	33	0	9	0	42	0	86	28	0	114	229
% App. Total	0	0	0	0		6.8	93.2	0	0		78.6	0	21.4	0		0	75.4	24.6	0		
PHF	.000	.000	.000	.000	.000	.625	.773	.000	.000	.793	.516	.000	.750	.000	.553	.000	.896	.583	.000	.814	.895

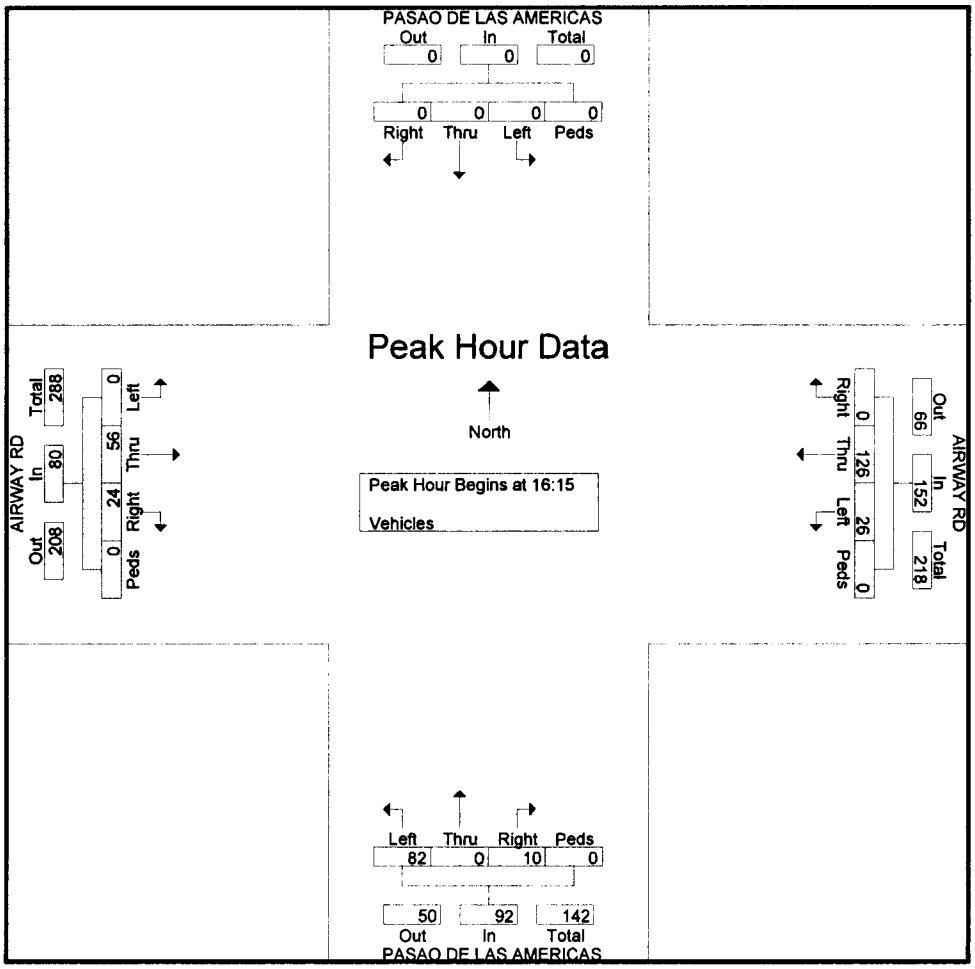


True Count

3401 First Ave #123
San Diego, CA 92103

File Name : 8021.11.PASAO DE LAS AMERICAS.AIRWAY RD
Site Code : 00000000
Start Date : 3/4/2008
Page No : 3

	PASAO DE LAS AMERICAS Southbound					AIRWAY RD Westbound					PASAO DE LAS AMERICAS Northbound					AIRWAY RD 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 Analysis From 12:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:15																					
16:15	0	0	0	0	0	6	31	0	0	37	18	0	2	0	20	0	**19**	5	0	24	81
16:30	0	0	0	0	0	6	29	0	0	35	**23**	0	**4**	0	**27**	0	13	5	0	18	80
16:45	0	0	0	0	0	**7**	30	0	0	37	18	0	3	0	21	0	7	5	0	12	70
17:00	0	0	0	0	0	7	**36**	0	0	**43**	23	0	1	0	24	0	17	**9**	0	**26**	**93**
Total Volume	0	0	0	0	0	26	126	0	0	152	82	0	10	0	92	0	56	24	0	80	324
% App. Total	0	0	0	0		17.1	82.9	0	0		89.1	0	10.9	0		0	70	30	0		
PHF	.000	.000	.000	.000	.000	.929	.875	.000	.000	.884	.891	.000	.625	.000	.852	.000	.737	.667	.000	.769	.871

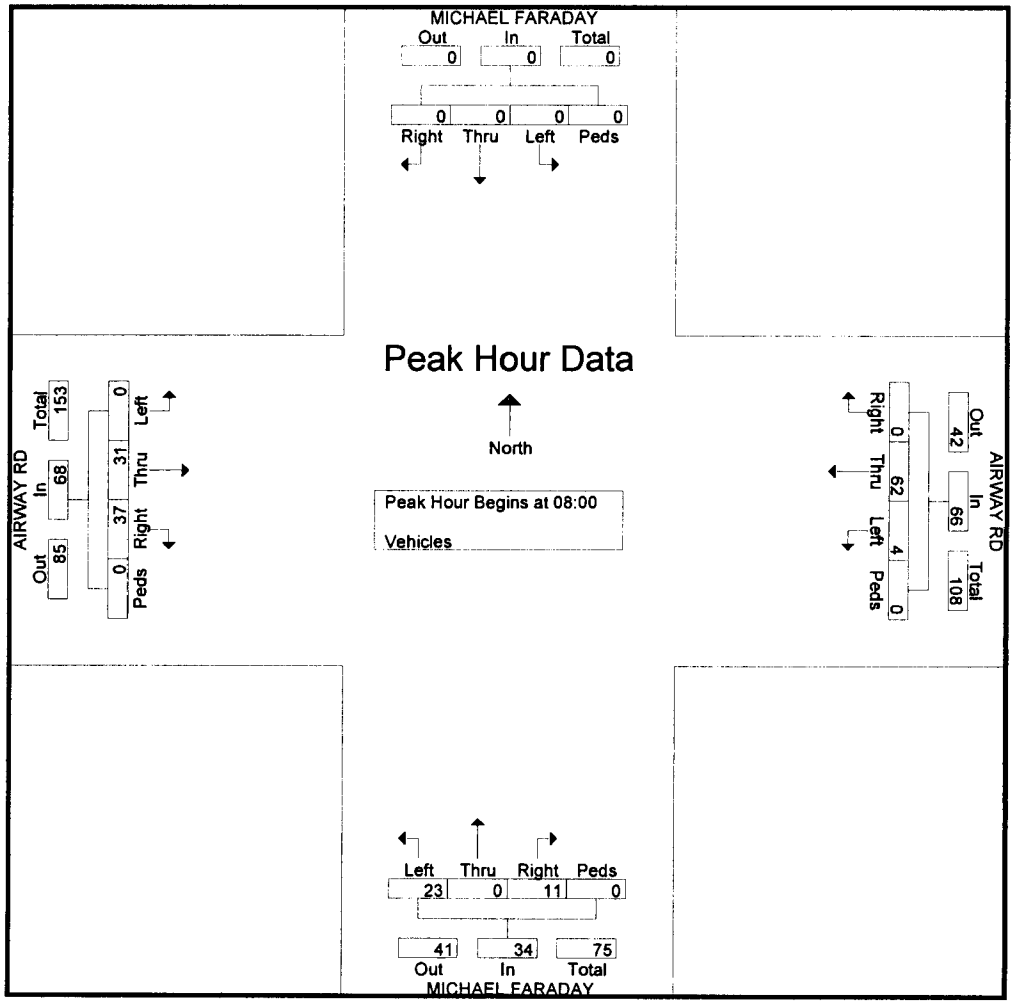


True Count

3401 First Ave #123
San Diego, CA 92103

File Name : 8021.10.MICHAEL FARADAY.AIRWAY RD
Site Code : 00000000
Start Date : 3/4/2008
Page No : 2

	MICHAEL FARADAY Southbound					AIRWAY RD Westbound					MICHAEL FARADAY Northbound					AIRWAY RD 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 Analysis From 07:00 to 11:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00																					
08:00	0	0	0	0	0	1	17	0	0	18	3	0	**3**	0	6	0	**10**	10	0	**20**	44
08:15	0	0	0	0	0	0	9	0	0	9	3	0	3	0	6	0	8	**12**	0	20	35
08:30	0	0	0	0	0	**2**	14	0	0	16	6	0	2	0	8	0	8	3	0	11	35
08:45	0	0	0	0	0	1	**22**	0	0	**23**	**11**	0	3	0	**14**	0	5	12	0	17	**54**
Total Volume	0	0	0	0	0	4	62	0	0	66	23	0	11	0	34	0	31	37	0	68	168
% App. Total	0	0	0	0		6.1	93.9	0	0		67.6	0	32.4	0		0	45.6	54.4	0		
PHF	.000	.000	.000	.000	.000	.500	.705	.000	.000	.717	.523	.000	.917	.000	.607	.000	.775	.771	.000	.850	.778

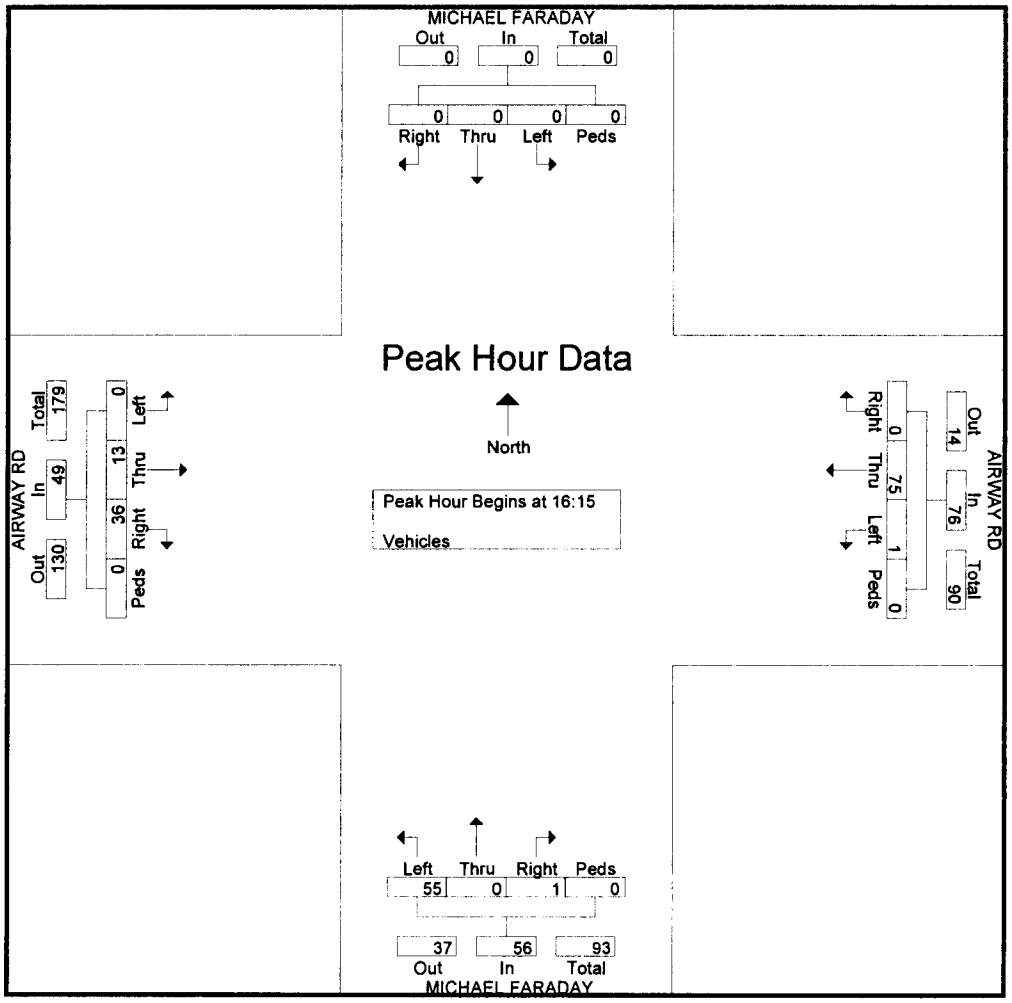


True Count

3401 First Ave #123
San Diego, CA 92103

File Name : 8021.10.MICHAEL FARADAY.AIRWAY RD
Site Code : 00000000
Start Date : 3/4/2008
Page No : 3

	MICHAEL FARADAY Southbound					AIRWAY RD Westbound					MICHAEL FARADAY Northbound					AIRWAY RD 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 Analysis From 12:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:15																					
16:15	0	0	0	0	0	**1**	**22**	0	0	**23**	8	0	0	0	8	0	4	**11**	0	**15**	46
16:30	0	0	0	0	0	0	19	0	0	19	10	0	**1**	0	11	0	3	10	0	13	43
16:45	0	0	0	0	0	0	19	0	0	19	13	0	0	0	13	0	1	5	0	6	38
17:00	0	0	0	0	0	0	15	0	0	15	**24**	0	0	0	**24**	0	**5**	10	0	15	**54**
Total Volume	0	0	0	0	0	1	75	0	0	76	55	0	1	0	56	0	13	36	0	49	181
% App. Total	0	0	0	0		1.3	98.7	0	0		98.2	0	1.8	0		0	26.5	73.5	0		
PHF	.000	.000	.000	.000	.000	.250	.852	.000	.000	.826	.573	.000	.250	.000	.583	.000	.650	.818	.000	.817	.838



City of San Diego Level of Service Thresholds

TRAFFIC IMPACT STUDY MANUAL

JULY
1998

TABLE 2
Roadway Classifications, Levels of Service (LOS) and Average Daily Traffic (ADT)

			LEVEL OF SERVICE				
STREET CLASSIFICATION	LANES	CROSS SECTIONS	A	B	C	D	E
Freeway	8 lanes		60,000	84,000	120,000	140,000	150,000
Freeway	6 lanes		45,000	63,000	90,000	110,000	120,000
Freeway	4 lanes		30,000	42,000	60,000	70,000	80,000
Expressway	6 lanes	102/122	30,000	42,000	60,000	70,000	80,000
Primary Arterial	6 lanes	102/122	25,000	35,000	50,000	55,000	60,000
Major Arterial	6 lanes	102/122	20,000	28,000	40,000	45,000	50,000
Major Arterial	4 lanes	78/98	15,000	21,000	30,000	35,000	40,000
Collector	4 lanes	72/92	10,000	14,000	20,000	25,000	30,000
Collector (no center lane) continuous left-turn lane)	4 lanes 2 lanes	64/84 50/70	5,000	7,000	10,000	13,000	15,000
Collector (no fronting property)	2 lanes	40/60	4,000	5,500	7,500	9,000	10,000
Collector (commercial-industrial fronting)	2 lanes	50/70	2,500	3,500	5,000	6,500	8,000
Collector (multifamily)	2 lanes	40/60	2,500	3,500	5,000	6,500	8,000
Sub-Collector (single-family)	2 lanes	36/56	—	—	2,200	—	—

LEGEND:

XXX/XXX = Curb to curb width (feet)/right-of-way width (feet): based on the City of San Diego Street Design. Manual

XX/XXX= Approximate recommended ADT based on the City of San Diego Street Design Manual.

NOTES:

1. The volumes and the average daily level of service listed above are only intended as a general planning guideline.

2. Levels of service are not applied to residential streets since their primary purpose is to serve abutting lots, not carry through traffic. Levels of service normally apply to roads carrying through traffic between major trip generators and attractors.

Excerpts from the County of San Diego Public Facility Element

Part XII
Public Facility Element
San Diego County General Plan

Adopted
March 13, 1991
Amended
January 12, 2005
GPA 04-010

Section 1 – Introduction XII-1-1
Section 2 – Coordination Among Facility Planning, Financing Programs and Land Use Planning XII-2-1
Section 3 – Parks and Recreation XII-3-1
Section 4 – Transportation XII-4-1
Section 5 – Flood Control XII-5-1
Section 6 – Solid Waste XII-6-1
Section 7 – Law Enforcement XII-7-1
Section 8 – Animal Control XII-8-1
Section 9 – Libraries XII-9-1
Section 10 – Schools XII-10-1
Section 11 – Fire Protection and Emergency Services XII-11-1
Section 12 – Wastewater XII-12-1
Section 13 – Water Provision Systems XII-13-1
Section 14 – Child Care XII-14-1
Section 15 – Courts and Jails XII-15-1
Section 16 – Social Services XII-16-1
Section 17 – Health XII-17-1
Section 18 – Senior Services XII-18-1
Section 19 – County Administration XII-19-1
Section 20 – Facilities Located in City Spheres XII-20-1
Section 21 – County Trails XII-21-1

This Element was partially funded through the Community Development Block Grant program

SECTION 4. TRANSPORTATION

OVERVIEW

An efficient integrated transportation system promotes the movement of people and goods in a timely and orderly fashion. Transportation facilities located within the County include freeways and highways, streets and roads, public transit, bikeways and aviation facilities.

While San Diego County's transportation system offers commuters a range of choices, the automobile is by far the most popular and most frequently chosen method of transportation in the County. During the 10 year period from 1978 to 1988, when population increased by 22%, licensed drivers in the region increased by 40% (to 1,612,000 drivers), auto registrations increased by 64% (to 1,348,000 registrations) and weekday vehicle miles of travel increased by 63%. During this same period, increases in freeway facilities (11%) and local street and road mileage (16%) did not keep up with the increasing demand.[4]

Transit service also plays an important role in the transportation system within the County. Public transit provides a relatively inexpensive and efficient method of transportation, and is the predominant form of transportation for many people, especially students, low income persons and the elderly. The remaining modes of transportation such as air, rail, bicycle and walking represent a small but important amount of total trips within the County.

The San Diego Association of Governments (SANDAG) is designated by both the state and federal governments as the agency responsible for regional transportation planning. In this role, SANDAG prepares a Regional Transportation Plan (RTP) for the San Diego region. The RTP is updated approximately every two years and includes goals and objectives for all forms of transportation facilities in the County. The road network in the County Circulation Element is coordinated with the freeway and highway system presented in the RTP. By working cooperatively and using common information and projections, the County and SANDAG coordinate their plans to provide a regional transportation system that is efficient, safe and convenient.

This section is intended to supplement the Circulation Element of the General Plan. The Circulation Element is a schematic representation of the transportation corridors and widths required at ultimate development of the County General Plan. It also delineates a bikeway system intended to link bicycle traffic within and between communities.

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[4] San Diego Association of Governments, 1989 Regional Transportation Plan, p. 55-56.

EXISTING CONDITIONS

The County of San Diego is responsible for ensuring the planning, development and maintenance of transportation facilities located in the unincorporated area. In addition, the County works closely with other agencies, including SANDAG, the Metropolitan Transit Development Board (MTDB), the North San Diego County Transit Development Board, and the California Department of Transportation (CALTRANS) to aid in the planning of transportation facilities and services throughout the region.

ROAD AND BRIDGE FACILITIES

Travel by bicycle, car or public transit utilizes roads and bridges. With the increasing population and automobile usage in San Diego County, the amount of traffic on the roads has increased. Expanding the County road and bridge network is a continual process. In 1990, there were approximately 1,864 miles of County-maintained roadways in the unincorporated area, including both Circulation Element and non-Circulation Element roads. Additional roads in the unincorporated area that are not constructed or maintained by the County include freeways, highways and private roads.

The County Circulation Element is divided into two parts: maps and a written text. The nine Circulation Element maps covering the entire County depict the major roads and bicycle routes in the County, both existing and proposed. This is the County's plan for the location and size of roads that will be required in the future to serve proposed land uses in the unincorporated area. The size of each road varies from 2 to 6 lanes based on the forecasted number of trips to be made on the road.

The vehicular capacity of a roadway is measured by a Level of Service scale. With six tiers (A thru F), the level of service for a particular road is a measure of speed and travel time, traffic interruptions or restrictions, freedom to maneuver, safety, driver comfort and convenience, and economy. Level of Service "A" is identified as free vehicular flow with few conflicts or interruptions, while "F" is identified as highly congested stop-and-go with many vehicular conflicts and interruptions. Level of Service "C" is considered to be the desired service level on County roads.

The Circulation Element maps are important tools for preserving road rights-of-way and planning for needed road construction. As development occurs and creates the demand for additional roadways, the roads are constructed. The County Board of Supervisors approves updates to the Circulation Element maps as land use changes are approved. County transportation planning is coordinated with the cities in the region to ensure that region-serving roads common to multiple agencies are planned to meet the expected demand in all areas, and that widths and alignments are compatible.

Roads in the unincorporated area are constructed by both the County and by private property owners. The County builds needed roads to the extent that funds are available; however, the majority of the roads in the unincorporated area are constructed by private property owners as a condition of development. This includes roads within development projects, peripheral roads and off-site roads, if warranted by the demand generated by the development.

To support County road construction and maintenance, the County Department of Public Works operates 17 road maintenance stations. These stations serve as staging areas for road maintenance crews. Twelve borrow pits, 8 County owned and 4 leased, provide the paving and gravel materials needed to maintain the roadways. Figure 4-A shows the locations of the County road maintenance stations and borrow pits.

In addition to roads, the County also builds and maintains bridges in the unincorporated area. In October 1989 there were a total of 650 bridge or dip structures in the unincorporated area of the County, including 120 bridges with a span of 20 feet or more, 67 bridges with a span of less than 20 feet, 385 culverts, and 78 dip structures. These structures are located on both Circulation Element and non-Circulation Element roads.

Responsibility for the construction of bridge structures is borne by both developers and the County. The majority of the bridge structures are provided by the County; however, in some cases developers are required to build a bridge structure as a condition of development. The County contracts for the construction of bridges to private firms and assumes maintenance responsibility for them upon completion.

BICYCLE FACILITIES

The mild year-round climate in the San Diego region makes the area ideal for the use of bicycles for transportation. Currently, there are over 230,000 bicycle trips made daily within the San Diego region on more than 450 miles of designated bikeways and other roadways. Increased costs for motorized travel, congested roads and highways and a greater emphasis on physical fitness have all contributed to greater bicycle ridership. Because of the growing demand for transportation by bicycle, increased attention is being focused on this mode of travel.

Bicycle use, however, has not increased at the rate projected in the 1985 SANDAG Regional Transportation Plan. SANDAG projected a 10% increase between 1985 and 1987, while actual ridership during this period increased by only 5%. Major reasons for the slower increase in ridership include inadequate funding for bikeway projects, which has resulted in a 50% completion rate of planned bikeway projects, and a lack of incentives to encourage bicycle ridership.

FIGURE 4-A GOES HERE

In the unincorporated area of San Diego County, there were a total of 70 miles of Bikeways in 1990. Of the 70 miles of Bikeways in the unincorporated area, Bike Lanes account for 68.5 miles, Bike Paths for 1.0 mile and Bike Routes for .5 miles. Definitions of Bikeways, Bike Lanes, Bike Paths and Bike Routes are contained in the Circulation Element. The Bicycle Network Map of the Circulation Element, in addition to showing existing Bikeways, maps over 300 miles of planned Bikeways that are not yet constructed.

Bicycle facilities in the unincorporated area are constructed by both developers and the County. Beginning in 1989, the County embarked on an aggressive program to expand the existing Bicycle Network. When improving property along roadways with planned Bikeways, the County requires the provision of Bikeways as part of the road improvements. State and Federal funding is being actively pursued to complete the remaining Bikeway segments.

In an effort to encourage bicycle ridership by both its employees and the general public, the County of San Diego has placed bicycle lockers at 14 County buildings and at regional transit centers. Currently, there are 59 lockers (holding 118 bicycles) at County buildings and a total of 20 additional lockers (holding 40 bicycles) in place at the Chula Vista and Oceanside Transit Centers. Bicycle racks and posts are also available.

TRANSIT FACILITIES

The San Diego County Transit System provides public transportation services to the unincorporated area and to 14 of the region's 18 cities. Public transit planning is done on a regional basis by the Metropolitan Transit Development Board, the North County Transit District and SANDAG, with input from the County. The County Department of Public Works completes short-range transit plans and transportation improvement programs for the systems it operates.

The County Transit System utilizes six types of transit services in its effort to provide a functional and responsive transit system. These are Suburban Fixed Route, Commuter Express Bus, Rural Lifeline service, Airporter service, Elderly and Disabled Dial-A-Ride service and General Public Dial-A-Ride services. Through these programs, the County Transit System serves almost two million passengers annually. Table 4-1 describes the different types of transit service and lists ridership levels for FY 89-90. All transit services offered by the County Transit System are provided by private contractors. In 1990, there were 10 contracted transit service providers. Seven contractors use their own vehicles, while the remaining three operate County-owned vehicles. In all cases, County Transit Service contractors provide vehicle maintenance and storage facilities.

As a means of integrating different transportation systems and types, increasing ridership and increasing accessibility, the County provides transit centers. Transit

centers generally serve a number of routes and have over 500 boardings per day. The Transportation Development Act allows the County to build transit centers anywhere in the County. Once the center is built, the

TABLE 4-1
SAN DIEGO COUNTY TRANSIT SERVICE FY 1989-1990

SERVICE TYPE	DESCRIPTION OF SERVICE	NO. OF FIXED ROUTES	ESTIMATED ANNUAL PASSENGERS
SUBURBAN FIXED ROUTE SERVICE	Fixed bus routes serving the cities and communities of La Mesa, Lemon Grove, El Cajon, Santee, Spring Valley, Rancho San Diego, Lakeside and Alpine. All of the routes offer connections to the San Diego Trolley and to San Diego Transit routes.	8	1,397,000
COMMUTER EXPRESS BUS	Fixed bus routes providing round trip service from Poway to downtown San Diego, Escondido to downtown San Diego and Oceanside to downtown San Diego. Connections to other transit services are also available along these routes.	3	170,000
POWAY TRANSIT SERVICES	There are three different services provided in the Poway area. The first service consists of fixed bus routes serving Poway with connections to San Diego Transit routes. Second is the Poway Dial-A-Ride, which provides demand responsive service to the general public. Third is the Poway Airporter, which is a demand-responsive service operating between Poway and the San Diego International Airport-Lindbergh Field.	3, N/A, N/A	254,700
RURAL BUS SERVICE	Fixed bus routes providing service from the rural eastern areas of the County to the cities of El Cajon and La Mesa with connections to San Diego Transit, the San Diego Trolley and other County Transit System routes.	7	16,800
ELDERLY and DISABLED DIAL-A-RIDE	Demand-responsive dial-a-ride providing service to elderly and disabled clientele in the cities and communities of El Cajon, La Mesa, Lemon Grove, Spring Valley, Lakeside and Alpine.	N/A	46,000
SPRING VALLEY DIAL-A-RIDE	Demand-responsive dial-a-ride for the general public serving the community of Spring Valley.	N/A	41,000

transit operator serving the center generally is responsible for facility maintenance and upkeep. In 1990, the County-owned, either solely or in partnership with other jurisdictions, the following four transit centers:

- Oceanside -- County owned
- Escondido -- Joint ownership between the County and North County Transit
- San Diego State University -- County-owned
- Chula Vista Bayfront Trolley Station -- Joint ownership between the County and the City of Chula Vista.

Figure 4-B shows the locations of both existing and proposed County-owned transit centers. Other existing transit centers constructed by the County but owned by other jurisdictions are:

- University Towne Center
- Vista

AVIATION FACILITIES

Aviation facilities in San Diego County include 40 airports and 39 heliports. Of these facilities, 8 of the airports and 3 of the heliports (located at county airports) are owned by the County. One of the airports, Fallbrook, is leased and operated by a private group. Lindbergh Field, San Diego's major airport serving approximately 11 million passengers per year, is owned and operated by the San Diego Unified Port District and is not discussed in this Element. Figure 4-C shows the locations of all County-owned aviation facilities.

Public airports typically prepare an Airport Master Plan for the ultimate development of the airport's facilities. Additionally, State law requires each public airport to adopt a Comprehensive Land Use Plan (Public Utilities Code Section 21670 et seq.). These plans are prepared for the area surrounding each facility to ensure compatibility between adjacent land uses and the operation and/or expansion of the airport. The Comprehensive Land Use Plan also addresses noise levels, maximum building heights in surrounding areas and other public safety issues.

The 8 airports and 3 heliports that are owned by the County cover a combined total of 2,254 acres. Currently, there are approximately 1,562 private aircraft based at these facilities that, when combined with visiting aircraft, conduct approximately 534,921 operations per year (an operation is defined as one takeoff or one landing). Table 4-2 identifies the County-owned aviation facilities and lists the size and usage levels for each facility.

FIGURE 4-C GOES HERE

MAP TO GO HERE

TABLE 4-2
COUNTY OWNED AVIATION
FACILITIES IN 1989

NAME	NO. OF BASED AIRCRAFT[1]	TOTAL ACRES	ANNUAL NO. OF OPERATIONS
Agua Caliente Springs Airport	1	20	300[2]
Borrego Valley Airport	31	198	41,620[3]
Fallbrook Community Airport	77	290	1,995[3]
Gillespie Field Airport and Heliport	635	743	174,599[4]
Jacumba Airport	7	131	2,500[2]
McClellan Palomar Airport and Heliport	422	486	206,692[4]
Ocotillo Airport	0	344	200[2]
Ramona Airport and Heliport	220	342	113,184[2]
TOTAL(S)	**1,393**	**2,554**	**541,090**

1 Based Aircraft: All figures are for 1989 except Fallbrook (1987).
2 1989 estimated number.
3 1987 number.
4 1988 number.

EXISTING FACILITY LEVELS

STREETS AND ROADS FACILITY LEVEL

The existing street and road system in the unincorporated County is generally operating at an acceptable level of service; a majority of the streets and roads experience little or no congestion. Most of the congestion that does exist in the unincorporated area takes place on major arterials during peak-hour traffic periods. Commuters approaching freeways to go to work cause congestion on the main arterials and also add to the congestion on the region's freeways in the more urbanized areas. As urban land uses have been extended outward to the more rural areas, and commuters drive greater distances to their workplaces, the amount of congestion on the region's freeways and highways has increased.

BICYCLE FACILITY LEVEL

While the Bicycle Network Map of the Circulation Element shows almost 400 miles of proposed bikeways in the unincorporated area, by 1990 only 70 miles of bikeways had been constructed. This level is not considered adequate to meet the needs of the unincorporated area.

TRANSIT FACILITY LEVEL

As the population of the San Diego region has grown, the use of transit services has increased. In addition to the completed transit centers, the following centers are planned for development by the County:

- County Administration Center
- Carlsbad Transit Center
- Grossmont College Transit Center
- Spring Valley Transit Center
- Southwestern College Transit Center
- Santee Transit Center
- Oceanside Transit Center Phase II
- Bayfront Trolley Station Phase II

In addition, a transit center is planned for Rancho San Diego. This center is being built by a private developer. Analysis of potential additional transit center sites will occur prior to completion of those currently planned.

AVIATION FACILITY LEVEL

Currently, the County's general aviation demands are being met by existing facilities. In 1989, there were 1,352 aircraft based at the County airports, and a combined total of 561,511 take-offs and landings conducted at the airports.

FUNDING METHODS

Funding transportation improvements in the County is becoming increasingly difficult. Previously used funding sources have in large part either been abolished or severely curtailed. Hardest hit have been funds available for routine operation and maintenance of existing facilities. As a result, funds that were previously available for construction of new facilities are now being channeled towards the operation and maintenance of existing facilities. In order to meet the needs of a growing County, new and alternate funding sources have been developed. These new sources, combined with the traditional funding mechanisms, still do not meet the entire transportation funding needs in the County. Some funding sources are exclusive to one type of transportation, while others are available for several modes.

STREETS AND ROADS FUNDING

State Subventions

The State provides transportation funding to the County through several programs. A State tax on gasoline provides funds which can be used for operation and maintenance costs or for the construction of roads, bridges and bikeways. The County also receives funds from the Streets and Highway Code, Section 2104(d) based on the ratio of registered vehicles throughout the County to the total vehicle registration throughout the State. These funds can be used for road construction.

Fines and Forfeitures

A portion of the revenues collected by the municipal courts for Vehicle Code violations (Vehicle Code Sections 42201 and 42210.5) are received by the County Road Fund for use in road maintenance and construction.

Development Exactions

Within the County, developers are generally required to construct all roads within their projects. In some cases developers may also be required to make off-site improvements to roads to mitigate the traffic impacts of the development.

Transportation Sales Tax (TransNet)

The passage of Proposition A (TransNet) in November of 1987, which raised the sales tax by one-half cent, is expected to provide the region with approximately $2.25 billion over the 20 year lifespan of the tax. Approximately $750 million will be generated for improvements to the each of the following: the region's highways, local streets and roads, and transit. From 1990 to 1995, the County will receive approximately $56.7 million dollars in TransNet funds for local streets and roads, to expand and improve the existing road system in the unincorporated area. Additionally, $1 million per year will be provided for the construction of bikeways throughout the region. The amount of TransNet funding received by the County and other jurisdictions each year is determined by SANDAG. SANDAG reviews TransNet funding requests in the region and determines the projects to be funded and the timing of funding.

Bridge and Thoroughfare Fee

A fee for bridges and thoroughfares is authorized by Government Code Section 66484 et seq. This statute authorizes the County to institute a fee to be applied to all new development in an identified area of benefit to offset the construction or expansion costs of planned Circulation Element roads, bridges and bikeways needed to serve the development.

Federal and State Grants

In FY90-91 the County received funding through three grant programs for use on transportation facilities: $500,000 from the Community Development Block Grant, and $2.5 million from the Federal Highway Administration. The County is also eligible to receive funds under the Combined Road Plan Program, which was created with the consolidation of the Federal Aid-Urban, Federal Aid-Secondary and Bridge Replacement Programs.

Assessment Districts

The Improvement Act of 1911 and the Municipal Improvement Act of 1913 enable the County to establish assessment districts to finance the construction or acquisition of public improvements, including roads and bridges, through the sale of bonds. The County can issue bonds to finance public improvements using the Improvement Act of 1911 or the Improvement Bond Act of 1915. Bonds are retired through assessments levied on properties receiving benefit from the improvement.

Prior to 1977 assessment districts were used extensively for both large and small scale projects. However, with the passage of Proposition 13, the use of assessment districts in the County to finance transportation projects decreased dramatically. Between 1977 and 1989, there were no assessment districts formed for the purpose of funding

transportation projects. However, in 1989, the formation of 4 assessment districts for transportation improvements in large-scale projects were being processed by the County.

AIRPORT FUNDING

Federal and State Funding

Federal and State grants for public airports are available for the design and construction of aviation related projects that have been recommended in an airport master plan or approved on an airport layout plan. Grant funds can also be obtained for the preparation of planning documents, such as airport master plans. Grant funds typically cover 80 to 90 percent of the total project cost. Grant funding is generated from fuel taxes, ticket surcharges and aircraft registration fees levied upon users of aviation facilities.

Lease Revenues

Another source of revenue for aviation facilities is the income earned from leased properties at County Airports. These revenues are used for capital improvements and maintenance at the eight County airports.

TRANSIT FUNDING

Federal and State Funds

Transit center funding is available from the Transportation Development Act, and through grants from Combined Road Plan[5], State Transit Capital Improvement Program (TCI) and State Inter-modal sources. Grant funding is sought and utilized whenever available to supplement other sources.

Development Exactions

The County may require developers to construct transit facilities if their projects cause a need for additional or expanded transit service.

Transportation Sales Tax

The County Transit System is receiving approximately $130,000 per year from TransNet to subsidize elderly and disabled services and senior fares.

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[5] Combined Road Plan funds used for transit center development are received from local jurisdictions that will benefit from the transit center.

BICYCLE FUNDING

Developer Exactions and Contributions

Many of the bikeways that are constructed in the unincorporated area are built by property owners as a condition of development. When a project is located on a roadway designated as a bikeway in the Circulation Element, the developer is required to construct the bikeway that abuts his property.

Transportation Sales Tax

The collection of the transportation sales tax (TransNet) is providing the San Diego region with $1 million per year (for 20 years) for the improvement and expansion of bicycle facilities. In FY89-90, the County received $210,000 from TransNet to fund the development of additional bikeways and related facilities in the unincorporated area.

Federal and State Funds

State Transportation Development Act Funds provide approximately $1 million per year to the region for bicycle facility improvements within road rights-of-way. In FY89-90 the County share of this money was $460,000. SANDAG reviews all of the projects requesting funding from this source and determines which will be funded. Funds from the State Bike Lane Account are available on a competitive basis for bicycle facility improvements serving commuter cyclists. The maximum amount that an agency can be granted in one year from this source is $90,000.

ISSUES

1. **Increases in the amount of automobile use have resulted in increased congestion on the region's roadways.**

   Discussion: The dramatic rise in automobile use has far surpassed the ability of the County and other jurisdictions to upgrade and maintain the highway and road system. As the number of vehicles on the roadways has increased, the expansion of existing roadways and the construction of new roadways has not kept pace. Between 1978 and 1988, automobile registrations increased by 64% while increases in local street and road mileage only rose by 16%. As a result, certain roadways are functioning at a Level of Service "E" or "F" on a routine basis.

   A LOS "C", which allows for stable traffic flow with room to maneuver, is a generally accepted level to strive for in new development. At this level, traffic generally flows smoothly, although freedom to maneuver within the roadway is somewhat restricted and lane changes require additional care.

However, there are some cases where development cannot achieve a LOS "C" on off-site roadways. For instance, there are areas where the existing development pattern precludes the addition of lanes or other mitigation or when the community is opposed to certain improvements to maintain a LOS "C". Additionally, there are existing roadways in the County that are currently operating below a LOS "C". Such cases are currently exceptions and generally occur when there is insufficient right-of-way to expand or modify a roadway or when the existing development in the area has generated more traffic than anticipated. In these cases a Level of Service "D" is acceptable on off-site roadways. At this level, small increases in flow cause substantial deterioration in service. Freedom to maneuver is limited and minor incidents can cause substantial interruption in the traffic flow.

When the roadway system reaches a LOS "E" or "F", or new development would push it to LOS "E" or "F", new development should not be approved unless the project can mitigate the LOS "E" or contribute a fair share to a program to mitigate the project's impacts, unless a statement of overriding findings can be made.

In order to control the amount of traffic on the roadways, and subsequently the amount of congestion, it is necessary to apply the LOS measurement to all roads that are impacted by a proposed project. The effect of a project on the road system varies from project to project. Due to the size and type of project, the type and capacity of roads serving the project, the amount of traffic generated by the development and the existing development pattern, the impact will vary from one project to another. To apply a LOS standard to only major or larger capacity roads or to within a specified geographic distance of a project could result in an inadequate review of the impacts of a project and create the potential for increased congestion. Therefore, project impacts should be assessed on a case-by-case basis.

2. **New development has a regionwide impact on transportation facilities extending beyond jurisdictional boundaries.**

Discussion: New development, regardless of the type, results in additional trips being taken on the region's transportation facilities. When development occurs, the automobile trips generated by the development are not restricted to the area immediately surrounding the development. Rather, the trips are made throughout the region. These trips not only increase the level of congestion on the transportation facilities in the community where the development is located, but also on the facilities in surrounding jurisdictions, and throughout the entire region.

3. **The increased reliance on personal vehicles has resulted in increased congestion on the region's roadways and highways.**

Discussion: A majority of the trips taken throughout the region is made in personal vehicles occupied by one person. This reliance on personal vehicles has contributed greatly to increased congestion and longer delays on the region's roads and highways.

Efforts to reduce the congestion on the roadways have traditionally focused on the construction of new roads or the expansion of existing roads. Recently, agencies have been developing Transportation Demand Management (TDM) programs to better manage travel demand during the busiest travel times and to improve the efficiency and effectiveness of the region's transportation systems. To achieve these goals, TDM includes the development and implementation of programs designed to influence traveler behavior by modifications in travel mode, frequency, time, route, vehicle occupancy, direction, trip length or facility assignment[6].

Additionally, legislation adopted in 1990 (Propositions 108 and 111) addressed the traffic congestion problem. The measures provide additional funding for transportation improvements, but also place additional requirements on the receipt of these funds. The legislation requires the preparation and adoption of a Congestion Management Program (CMP) for the San Diego region. One of the requirements of the CMP is that Level of Service standards be adopted for all state highways and for principal arterials. The LOS can be set at "E" or the current level, whichever is lower. Failure to meet this standard could result in the withholding of transportation improvement funds.

4. **The need for transportation improvements has increased faster than funds have been made available to finance the improvements.**

Discussion: The large-scale rapid growth experienced throughout the region in the 1980s resulted in an increased burden on the region's transportation facilities. Funding needed to expand the facilities has not kept pace with the improvements needed to accommodate the increased use. Even with the funding provided by passage of Proposition A (TransNet), construction and maintenance of much of the region's transportation system remains underfunded. In the unincorporated area in 1989, there was a $46 million backlog in construction of needed roadway facilities and a $76 million backlog in maintenance of existing roadways.

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[6] San Diego Association of Governments, 1989 Regional Transportation Plan, p. 161.

5. **Poorly planned or unregulated development in the vicinity of existing aviation facilities can result in future conflicts between incompatible land uses.**

Discussion: When new development occurs in the vicinity of existing aviation facilities without sufficient consideration of the potential impacts, incompatibility of land uses may occur. Impacts such as noise and the potential hazard from crashes must be considered during land use planning reviews to ensure the health and safety of the public and to eliminate opposition to airport operations by surrounding residents. An airport's comprehensive land use plan identifies and recommends land use types that would be compatible with the airport use. The plan is intended to prevent the development of incompatible land uses and creation of hazards. Development projects are reviewed to ensure compatibility with both the current and future plans for the airport. For airports that do not yet have an adopted comprehensive land use plan, SANDAG's Airport Land Use Commission reviews all actions, regulations, and permits within the vicinity of the airport.[7]

6. **Bicycle facilities in the unincorporated area have traditionally been developed at a slow rate.**

Discussion: Over the past 10 years, an average of 4 miles of bikeways have been built annually in the unincorporated area. This level is below the rate of bikeway development that would be needed for the County to contribute its fair share toward meeting SANDAG's goal of increasing regional bikeway mileage by 30 miles per year. This is due in large part to a lack of funding sources, a lack of education programs to encourage cycling as an alternate mode of transportation, and a lack of emphasis on the development of bicycle facilities. In recent years, an increased emphasis has been placed on the development of bicycle facilities, and in FY 89-90, approximately 15 miles of bikeways were projected to be constructed in the unincorporated area. Publicity and educational programs directed at potential cyclists as well as motorists would encourage use of the bicycle as an alternative to the car.

[7] As used in this section, "vicinity" means land that will be included or reasonably could be included within an airport's comprehensive land use plan. If a designated study area for the plan has not been identified, then "vicinity" means land within two miles of the boundary of a public airport.

GOALS, OBJECTIVES, POLICIES AND IMPLEMENTATION MEASURES

GOAL

A SAFE, CONVENIENT, AND ECONOMICAL INTEGRATED TRANSPORTATION SYSTEM INCLUDING A WIDE RANGE OF TRANSPORTATION MODES.

OBJECTIVE 1:

A Level of Service "C" or better on County Circulation Element roads.

Policy 1.1: New development shall provide needed roadway expansion and improvements on-site to meet the demand created by the development, and to maintain a Level of Service "C" on Circulation Element Roads during peak traffic hours. New development shall provide off-site improvements designed to contribute to the overall achievement of a Level of Service "D" on Circulation Element Roads.

Implementation Measure 1.1.1: Review all development proposals to determine both their short-term and long-term impacts on the roadway system. The area of impact will be determined based on the size, type and location of the project; the traffic generated by the project; and the existing circulation and development pattern in the area. [DPW, DPLU]

Implementation Measure 1.1.2: Require, as a condition of approval of discretionary projects, improvements or other measures necessary to mitigate traffic impacts to avoid reduction in the existing Level of Service below "C" on on-site Circulation Element roads except within the Otay Ranch project as defined in the Otay Subregional Plan Text, Volume 2. [DPLU, DPW]

Implementation Measure 1.1.3: Require, as a condition of approval of discretionary projects which have a significant impact on roadways, improvements or other measures necessary to mitigate traffic impacts to avoid reduction in the existing Level of Service below "D" on off-site and on-site abutting Circulation Element roads. New development that would significantly impact congestion on roads at LOS "E" or "F", either currently or as a result of the project, will be denied unless improvements are scheduled to increase the LOS to "D" or better or appropriate mitigation is provided . Appropriate mitigation would include a fair share contribution in the form of road improvements or a fair share contribution to an established program or project. If impacts cannot be mitigated, the project will be denied unless a specific statement of overriding findings is made pursuant to Section 15091(b) and 15093 of the State CEQA Guidelines. [DPLU, DPW]

Implementation Measure 1.1.4: Whenever possible on development proposals, require that access to parcels adjacent to roads shown on the Circulation Element be limited to side streets in order to maintain through traffic flow. [DPW, DPLU]

Policy 1.2: General Plan Amendments and Rezones shall be reviewed to ensure that any proposed increases in density or intensity of use will not prevent the planned Circulation Element road system from operating at its planned Level of Service at buildout.

OBJECTIVE 2:

Equitable sharing of funding for transportation facilities.

Policy 2.1: New development shall be required to contribute its fair share toward financing transportation facilities.

Implementation Measure 2.1.1: Apply the Bridge and Thoroughfare Fee to all areas of the County and/or establish an unincorporated area traffic impact fee to support construction of the Circulation Element roadway and bikeway system in the unincorporated area to the extent necessitated by new development. [DPW]

Implementation Measure 2.1.2: Assist and support the development of a regional transportation impact fee to finance regional transportation improvements necessitated by new development. [DPLU, DPW]

Policy 2.2: The County will actively work to reduce existing transportation facilities deficiencies.

Implementation Measure 2.2.1: Seek new and additional sources of funding to help finance improvements and maintenance of County transportation facilities. [DPW]

Implementation Measure 2.2.2: Seek the County's fair share of state transportation bond issues, Proposition A sales tax funds, and other state and federal funding programs. [DPW]

OBJECTIVE 3:

A transportation system that is coordinated and integrated with the transportation facilities and plans of surrounding jurisdictions.

POLICY 3.1: The expansion of County transportation facilities will be coordinated with transportation plans of adjacent jurisdictions.

Implementation Measure 3.1.1: Coordinate with other jurisdictions in the review of planned transportation routes and facilities of regional or subregional importance to ensure compatibility between County, city and state plans. [DPLU, DPW]

Implementation Measure 3.1.2: Refer all discretionary development projects within city spheres of influence, within 1 mile of a city boundary, or within a city's designated planning review area to the appropriate city for a determination of the impact on city transportation facilities. [DPLU]

Implementation Measure 3.1.3: Establish a cooperative mechanism to reconcile differences between the County Circulation Element and that of neighboring cities. [DPLU]

Implementation Measure 3.1.4: Provide input to SANDAG during the development of regional transportation plans. [DPW, DPLU]

Implementation Measure 3.1.5: Coordinate with CalTrans in the review of planned improvements to State highways to ensure conformance to State requirements. [DPW, DPLU]

OBJECTIVE 4:

Reduction in the demand on the road system through increased public use of alternate forms of transportation or other means.

Policy 4.1: The use of alternate forms of transportation such as public transit and car/van pools will be supported and encouraged to reduce both roadway congestion and pollution.

Implementation Measure 4.1.1: In areas where there are likely to be a large number of prospective users, coordinate the planning of all new transit routes or route changes with established development patterns and land use plans to efficiently serve existing and future transit generators. [DPW, DPLU]

Implementation Measure 4.1.2: Work cooperatively with other jurisdictions and public transportation agencies, including the Metropolitan Transit Development Board and the North County Transit District, to provide a coordinated and integrated transit service network, including completion of the regional transit centers program. [DPW]

Implementation Measure 4.1.3: Consider the inclusion of public restrooms in the construction of new transit centers. [DPW]

Implementation Measure 4.1.4: Seek to increase transit service funds consistent with population growth and passenger demand. [DPW]

Implementation Measure 4.1.5: Site County facilities in close proximity to transit corridors, when feasible. [DGS, CAO, DPLU, DPW]

Implementation Measure 4.1.6: Establish incentive programs for employers to encourage their employees to utilize alternate forms of transportation. [DPW, DPLU, CAO]

Implementation Measure 4.1.7: Encourage employers to:

a) provide employees with subsidized transit passes;
b) establish carpool programs;
c) provide vehicles for employee van-pools;
d) provide preferential carpool parking;
e) provide secure storage facilities, showers and lockers to encourage employees to use bicycles;
f) use flex-time and staggered work hours;
g) allow employees to telecommute from home or satellite offices; and
h) participate in the commuter computer program.

[DPW, DPLU, CAO]

Implementation Measure 4.1.8: Develop fiscal and other incentives to promote the use of multi-modal means of transportation (e.g., bicycling to park-and-ride facilities). [DPW, DPLU, CAO]

Implementation Measure 4.1.9: Encourage pedestrian movement through urban design techniques, creating pedestrian-friendly environments and proper land use mix. [DPLU]

Policy 4.2: The County will ensure the development of its bikeway system and encourage its use.

Implementation Measure 4.2.1: Condition the approval of new development on dedication and construction of bikeways as indicated in the Circulation Element's Bicycle Network Plan. [DPLU, DPW]

Implementation Measure 4.2.2: Construct bikeways in areas where there are potentially large numbers of prospective users. [DPW]

Implementation Measure 4.2.3: Acquire cost-effective rights-of-way and/or negotiate for the use of existing rights-of-way or easements for bikeways (e.g., abandoned railroad rights-of-way, pipeline/ powerline easements, flood control channels). [DPW, DPLU]

Implementation Measure 4.2.4: Provide bicycle-carrying racks on public transportation vehicles when a need is demonstrated. [DPW]

Implementation Measure 4.2.5: Require secure bicycle storage facilities at new commercial centers, public centers, industrial centers, transit centers, airports and multi-family developments. [DPLU, DPW]

Policy 4.3: Consider the need for transit improvements in Large Scale Projects.

Implementation Measure 4.3.1: Refer applications for Large Scale Projects to the County Transit System for recommendations on transit facility needs. [DPLU, DPW]

Implementation Measure 4.3.2: Condition the approval of Large Scale Projects on the provision of accessible transit stops and other transit related improvements, as appropriate. [DPLU, DPW]

Policy 4.4: Ensure the provision of bicycle facilities and other needed bikeway related improvements in new development.

Implementation Measure 4.4.1: Refer applications for Large Scale Projects to the County Bikeway Coordinator for recommendations on requirements for the provision of bikeway facilities to serve the project. [DPLU, DPW]

OBJECTIVE 5:

Assurance of compatible land uses around County airports.

Policy 5.1: The County will ensure that land uses surrounding County airports are compatible with the operation of the airport.

Implementation Measure 5.1.1: Complete the development of Comprehensive Land Use Plans for each County airport. [DPW]

Implementation Measure 5.1.2: Review all applications for discretionary projects, building permit applications, general plan amendments and rezones located within the boundaries of an airport's Comprehensive Land Use Plan (CLUP) for compatibility with the plan as a basis for project approval. [DPW, DPLU]

PUBLIC ROAD STANDARDS

COUNTY OF SAN DIEGO
DEPARTMENT OF PUBLIC WORKS

March 3, 2010

COUNTY OF SAN DIEGO
BOARD OF SUPERVISORS
WEDNESDAY, FEBRUARY 24, 2010

MINUTE ORDER NO. 10

SUBJECT: ORDINANCE REVISING THE COUNTY OF SAN DIEGO PUBLIC ROAD STANDARDS; ENHANCE FLEXIBILITY IN ROAD DESIGN (2/24/2010 -- Introduce Ordinance; 3/3/2010 – Adopt Ordinance) (DISTRICTS: ALL)

OVERVIEW:
San Diego County Public Road Standards serve as guidelines for design and construction of public road improvement projects within unincorporated San Diego County. These standards apply to both County and developer initiated public road improvement projects. Improvements to public roads are often required as conditions of land development (discretionary permit) approval.

Staff has developed revisions to the Public Road Standards and, on December 18, 2009, the Planning Commission voted to recommend the revisions to your Board for approval. Following are included in the revised standards:

- Seventeen new Circulation Element and two new non-Circulation Element road classifications
- Additional factors for consideration in the design exception process
- Revisions to pathway standards to provide consistency with the County of San Diego Community Trails Master Plan
- Updated provisions to address current engineering practices

Flexibility in County Road Design Guidelines have also been prepared to provide additional information regarding design alternatives that may be considered when designing County roads. The guidelines may help designers avoid impacts to important natural and human resources and encourage roadway designers to consider all modes of transportation in applying public road standards criteria.

This is a request to adopt revisions to the Public Road Standards and authorize use of the Flexibility in County Road Design Guidelines. Approval of Public Road Standards is a two step process. On February 24, 2010, the Board will consider a proposed Ordinance amendment that will update the reference to the Public Road Standards included in the County Subdivision Ordinance, San Diego County Code section 81.101, et seq. If the Board takes action on February 24, 2010, then on March 3, 2010, a second reading of the proposed ordinance is necessary to enact and implement the Board's direction.

FISCAL IMPACT:
The request will have no current or annual cost, or require any additional staff years.

BUSINESS IMPACT STATEMENT:
The proposed revisions to the County of San Diego Public Road Standards include 17 additional Circulation Element Road classifications and two additional non-Circulation Element road classifications. The additional road classifications provide more flexibility in the design of County public roads and may result in cost savings. The proposed revisions also provide more flexibility in provision of guardrails, street lighting in rural areas and separation distances for private driveways and private roads serving 20 or fewer lots that may result in additional cost savings.

RECOMMENDATION:
CHIEF ADMINISTRATIVE OFFICER:
On February 24, 2010:

1. Find proposed project is exempt from the California Environmental Quality Act (CEQA) as specified under Section 15061 (b)(3) of the State CEQA Guidelines. (Attachment A)

2. Approve introduction (first reading), read title and waive further reading of an Ordinance entitled:

   ORDINANCE AMENDING SECTION 81.102 (bb) OF THE SAN DIEGO COUNTY CODE RELATING TO SAN DIEGO COUNTY PUBLIC ROAD STANDARDS.

3. Authorize use of the Flexibility in County Road Design Guidelines.

If, on February 24, 2010, the Board takes action, then, on March 3, 2010:

Submit the Ordinance for further consideration and adoption (second reading).

ACTION:
ON MOTION of Supervisor Horn, seconded by Supervisor Jacob, the Board took action as follows:

1. Found proposed project is exempt from the California Environmental Quality Act (CEQA) as specified under Section 15061 (b)(3) of the State CEQA Guidelines. (Attachment A)

2. Approved introduction (first reading), read title and waived further reading of an Ordinance entitled:

   ORDINANCE AMENDING SECTION 81.102 (bb) OF THE SAN DIEGO COUNTY CODE RELATING TO SAN DIEGO COUNTY PUBLIC ROAD STANDARDS.

   Introducing Ordinance for further Board consideration and adoption on March 3, 2010.

3. Approved the use of the revised Public Road Standards and directed that they become operative on the effective date of the proposed ordinance.

4. Authorized use of the Flexibility in County Road Design Guidelines.

AYES: Cox, Jacob, Slater-Price, Roberts, Horn

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State of California)
County of San Diego) §

I hereby certify that the foregoing is a full, true and correct copy of the Original entered in the Minutes of the Board of Supervisors.

THOMAS J. PASTUSZKA
Clerk of the Board of Supervisors

By_____
Marvice E. Mazyck, Deputy

Meeting date: 3/03/10 (6)

ORDINANCE NO. 10040 (N.S.)

AN ORDINANCE AMENDING SECTION 81.102 (bb) OF THE SAN DIEGO COUNTY CODE TO PROVIDE A REFERENCE TO AMENDED PUBLIC ROAD STANDARDS

The Board of Supervisors of the County of San Diego ordains as follows:

Section 1. The Board of Supervisors finds and determines that it is in the public interest to use uniform standards in the construction of public roads required as a condition of project approval. The amendments made by this ordinance are intended to revise the definitions section in the County Subdivision Ordinance to reflect the adoption of new Public Road Standards in the County of San Diego.

Section 2. Section 81.102(bb) of the San Diego County Code is amended to read as follows:

SEC. 81.102. DEFINITIONS

(bb) "San Diego County Standards" refers to those standards and specifications on file in the Office of the Clerk of the Board of Supervisors (Clerk) as Attachment C with Resolution No. 99-186 (6-30-99 (8)) (San Diego County Standards for Private Roads) and Public Road Standards(2-24-10 (10)); provided, however, that with respect to development within the "Country Town" area of the Borrego Springs Planning Area, the standards and specifications contained in the "Community Right-of-Way Development Standards - Country Town Area of the Borrego Springs Planning Area" on file with the Office of the Clerk as Document Number 740149 (4-10-91 (6)), and with respect to development within the San Dieguito Planning Area, the standards and specifications contained in the "Community Right-of-Way Development Standards - Country Town Sphere of the San Dieguito Planning Area" on file with the Office of the Clerk as Document Number 750029(a) (6-6-92 (9)), and with respect to development within the Fallbrook Community Development Area, the standards and specifications contained in the "Fallbrook Community Right-of-Way Development Standards for Public Roads" on file with the Office of the Clerk as Document Number 761748 (12-14-94 (1)), and with respect to development within the Julian Community Planning Area, the standards and specifications contained in the "Community Right-of-Way Development Standards: Julian Historic District and Julian

Community Planning Area" on file with the Office of the Clerk as Document Number 0768777 (3-6-02 (17)), shall also apply and shall supersede the aforementioned documents to the extent of any conflict between them.

Section 3: This ordinance shall take effect and be in force thirty days after its passage and before the expiration of fifteen days after its passage, a summary hereof shall be published once with the names of the members of this Board voting for and against it in the San Diego Commerce a newspaper of general circulation published in the County of San Diego.

APPROVED AS TO FORM AND LEGALITY
COUNTY COUNSEL

BY Jon Burgoth
SENIOR DEPUTY

PASSED, APPROVED, AND ADOPTED by the Board of Supervisors of the County of San Diego this 3rd day of March, 2010.

PAM SLATER-PRICE
Chairwoman, Board of Supervisors
County of San Diego, State of California

The above Ordinance was adopted by the following vote:

AYES: Cox, Jacob, Slater-Price, Roberts, Horn

ATTEST my hand and the seal of the Board of Supervisors this 3rd day of March, 2010.

THOMAS J. PASTUSZKA
Clerk of the Board of Supervisors

By
Catherine Santos, Deputy

Ordinance No. 10040 (N.S.)
Meeting Date: 3/03/10 (6)

SECTION 4

REQUIRED PUBLIC ROAD RIGHTS-OF-WAY IMPROVEMENTS

Section 4.1 CLASSIFICATION

There are two general classifications of public roads as defined in these Standards: Circulation Element roads and Non-Circulation Element roads. The former are roads which have been adopted by the Board of Supervisors as the Regional Circulation Network for the General Plan.

Circulation Element Roads: Circulation Element roads are considered the regional backbone or skeleton road system. These roads provide for the vehicular movement of goods and services between various parts of the county.

Non-Circulation Element Roads: These roads feed vehicular traffic onto the Circulation Element system of roads. They provide access to residential neighborhoods and commercial and industrial areas.

Table No. 1 identifies specific road classifications and their normal expected carrying capacity in terms of vehicles per day at different levels of service. These capacities apply to road segments fully improved to County Standards, not those roads which are existing as partially improved or unimproved segments. The values shown are subject to adjustment based on the geometry of the roadway, side frictions, and other relevant factors as determined by the Director, Department of Public Works.

Section 4.2 ROAD CROSS-SECTIONS

Tables 2A and 2B are a listing of all road requirements. The data specified in Tables 2A and 2B are minimums and are subject to modification as further defined in this section.

Section 4.3 GENERAL NOTES

A. Additional right-of-way width may be required to accommodate slopes, drainage structures, bikeways, pathways, additional turning lanes and/or other required improvements.

B. Where a public road is entirely within a proposed project's boundary, the developer shall dedicate the right-of-way required in Tables 2A and 2B, consistent with the road classification. The developer shall also grade cut slopes and construct the ultimate fill slopes and improvements. Reduced improvements may be approved if the road does not connect with an adjacent fully improved road and if it is only needed for internal circulation within the project.

TABLE 1
AVERAGE DAILY VEHICLE TRIPS*

CIRCULATION ELEMENT ROADS			LEVELS OF SERVICE				
Road Classification		# of Travel Lanes	A	B	C	D	E
Expressway (6.1)		6	<36,000	<54,000	<70,000	<86,000	<108,000
Prime Arterial (6.2)		6	<22,200	<37,000	<44,600	<50,000	<57,000
Major Road	(4.1A)	4	<14,800	<24,700	<29,600	<33,400	<37,000
	w/ Intermittent Turn Lanes (4.1B)	4	<13,700	<22,800	<27,400	<30,800	<34,200
Collector		4	<13,700	<22,800	<27,400	<30,800	<34,200
Boulevard	w/ Raised Median (4.2A)	4	<18,000	<21,000	<24,000	<27,000	<30,000
	w/ Intermittent Turn Lanes (4.2B)	4	<16,800	<19,600	<22,500	<25,000	<28,000
Town Collector		2	<3,000	<6,000	<9,500	<13,500	<19,000
Community Collector	w/ Raised Median (2.1A)	2	<10,000	<11,700	<13,400	<15,000	<19,000
	w/ Continuous Left Turn Lane (2.1B)	2	<3,000	<6,000	<9,500	<13,500	<19,000
	w/ Intermittent Turn Lane (2.1C)	2	<3,000	<6,000	<9,500	<13,500	<19,000
	w/ Passing Lane (2.1D)	2	<3,000	<6,000	<9,500	<13,500	<19,000
	No Median (2.1E)	2	<1,900	<4,100	<7,100	<10,900	<16,200
Light Collector	w/ Raised Median (2.2A)	2	<3,000	<6,000	<9,500	<13,500	<19,000
	w/ Continuous Left Turn Lane (2.2B)	2	<3,000	<6,000	<9,500	<13,500	<19,000
	w/ Intermittent Turn Lane (2.2C)	2	<3,000	<6,000	<9,500	<13,500	<19,000
	w/ Passing Lane (2.2D)	2	<3,000	<6,000	<9,500	<13,500	<19,000
	No Median (2.2E)	2	<1,900	<4,100	<7,100	<10,900	<16,200
		2	<1,900	<4,100	<7,100	<10,900	<16,200
	w/ Reduced Shoulder (2.2F)	2	<5,800	<6,800	<7,800	<8,700	<9,700
Rural Collector		2	<1,900	<4,100	<7,100	<10,900	<16,200
Rural Light Collector		2	<1,900	<4,100	<7,100	<10,900	<16,200
Rural Mountain		2	<1,900	<4,100	<7,100	<10,900	<16,200
Recreational Parkway		2	<1,900	<4,100	<7,100	<10,900	<16,200
Minor Collector	w/ Raised Median (2.3A)	2	<3,000	<6,000	<7,000	<8,000	<9,000
	w/ Intermittent Turn Lane (2.3B)	2	<3,000	<6,000	<7,000	<8,000	<9,000
	No Median (2.3C)	2	<1,900	<4,100	<6,000	<7,000	<8,000
NON-CIRCULATION ELEMENT ROADS**			LEVELS OF SERVICE				
Residential Collector		2	-	-	<4,500	-	-
Rural Residential Collector***		2	-	-	<4,500	-	-
Residential Road		2	-	-	<1,500	-	-
Rural Residential Road***		2	-	-	<1,500	-	-
Residential Cul-de-Sac or Loop Road		2	-	-	<200	-	-

* The values shown are subject to adjustment based on the geometry of the roadway, side frictions, and other relevant factors as determined by the Director, Department of Public Works.

** Levels of service are not applied to residential streets since their primary purpose is to serve abutting lots, not carry through traffic. Levels of service normally apply to roads carrying through traffic between major trip generators and attractors.

*** Rural Residential Collectors and Rural Residential Roads are intended to serve areas with lot sizes of 2 acres or more which do not have a demand for on-street parking. On-street parking is not assured for these cross sections. Additional right-of-way is needed if on-street parking is in paved area.

**** See Tables 2A and 2B for roadway surfacing and right-of-way widths.

C. Where a public road is adjacent to the project's boundary, the developer shall construct any required curbs, gutters, ditches/ and/or sidewalks and a minimum of one-half of the surfacing width specified in Tables 2A and 2B for that particular road classification, but in no case less than 28 feet of paving and 40 feet of grading plus slopes.

D. Travel lanes are 12 feet wide unless otherwise specified.

Section 4.4 CIRCULATION ELEMENT ROADS – SUPPLEMENTAL INFORMATION

The following requirements supplement the minimum standards found in Tables 2A and 2B:

A. Access

It is intended that the roads identified on the County General Plan depict corridors for public mobility and access which are planned to meet the needs of the existing and anticipated population of San Diego County. It is intended that Circulation Element roads provide public mobility with minimum interference from local traffic as it accesses a General Plan road. Therefore, Circulation Element roads require access control to minimize traffic conflicts. Access control for each Circulation Element road classification shall be as follows:

1. Expressways

   No lot or private road access allowed; only selected public road access with full grade separations.

2. Prime Arterials

   Access is fully controlled with new development required to provide signalized intersections for ingress and egress. Residential lots are required to be served from interior residential roads.

3. Major Roads

   Access is controlled with new development required to provide access roads, common driveways and signalized intersections. Residential lots are required to be served from interior residential roads.

4. Collector Roads/Rural Collector Roads

   Access is controlled with new development required to provide common driveways, access roads and, on occasion, signalized intersections. Residential lots are required to be served from interior residential roads.

TABLE 2A: COUNTY OF SAN DIEGO - PUBLIC ROAD STANDARDS

ROAD CLASSIFICATION	# LANES / LANE WIDTH	MEDIAN WIDTH	ROAD SURFACING WIDTH	R.O.W. WIDTH	PAVED SHOULDERS (# / WIDTH)	PARKWAY WIDTH	MIN. CURVE RADIUS	MAX. DESIRABLE GRADE	MIN. DESIGN SPEED (MPH)
CLASSIC CIRCULATION ELEMENT ROAD CLASSIFICATIONS									
Expressway (6.1)	6 / 12'	34'	126'	146'	2 / 10'	10'	1,700'	6%	65
Prime Arterial (6.2)	6 / 12'	14'	102'	122'	2 / 8'	10'	1,700'	6%	65
Major Road (4.1A)	4 / 12'	14'	78'	98'	2 / 8'	10'	1,200'	7%	55
Collector	4 / 12'	-	64'	84'	2 / 8'	10'	1,200'	7%	55
Town Collector	2 / 12'	12'	54'	74'	2 / 8'	10'	500'	9%	40
Light Collector	2 / 12'	-	40'	60'	2 / 8'	10'	700'	9%	45
Rural Collector	2 / 12'	-	40'	84'	2 / 8'	22'	500'	12%	40
Rural Light Collector	2 / 12'	-	40'	60'	2 / 8'	10'	500'	12%	40
Rural Mountain	2 / 12'	-	40'	100'	2 / 8'	30'	500'	12%	40
Recreational Parkway	2 / 12'	-	40'	100'	2 / 8'	30'	400'	12%	25
MODERN CIRCULATION ELEMENT ROAD CLASSIFICATIONS									
Major Road									
* With Intermittent Turn Lanes (4.1B)	4 / 12'	-	64' - 78'	84' - 98'	2 / 8'	10'	1,200'	7%	55
Boulevard									
+++ With Raised Median (4.2A)	4 / 12'	14'	78'	106'	2 / 8'	14'	500'	9%	40
+++ With Intermittent Turn Lanes (4.2B)	4 / 12'	-	64' - 78'	92' - 106'	2 / 8'	14'	500'	9%	40
Community Collector									
** With Raised Median (2.1A)	2 / 12'	14'	54'	74'	2 / 8'	10'	700'	9%	45
** With Continuous Left Turn Lane (2.1B)	2 / 12'	14'	54'	74'	2 / 8'	10'	700'	9%	45
+++ With Intermittent Turn Lanes (2.1C)	2 / 12'	-	40' - 54'	60' - 74'	2 / 8'	10'	700'	9%	45
*** With Passing Lane (2.1D)	2 / 12'	-	40'	84'	2 / 8'	10'	700'	9%	45
+ No Median (2.1E)	2 / 12'	-	40'	60'	2 / 8'	10'	700'	9%	45
Light Collector									
** With Raised Median (2.2A)	2 / 12'	14'	54'	78'	2 / 8'	10'	500'	9%	40
** With Continuous Left Turn Lane (2.2B)	2 / 12'	14'	54'	78'	2 / 8'	10'	500'	9%	40
+++ With Intermittent Turn Lanes (2.2C)	2 / 12'	-	40' - 54'	64' - 78'	2 / 8'	10'	500'	9%	40
*** With Passing Lane (2.2D)	2 / 12'	-	40'	88'	2 / 8'	10'	500'	9%	40
++ No Median (2.2E)	2 / 12'	-	40'	64'	2 / 8'	10'	500'	9%	40
+++ With Reduced Shoulder (2.2F)	2 / 12'	-	40'	52'	2 / 2'	10'	500'	9%	40
Minor Collector									
+++ With Raised Median (2.3A)	2 / 12'	14'	54'	82'	2 / 8'	10'	350'	12%	35
+++ With Intermittent Turn Lanes (2.3B)	2 / 12'	-	40' - 54'	68' - 82'	2 / 8'	10'	350'	12%	35
+++ No Median (2.3C)	2 / 12'	-	40'	68'	2 / 8'	10'	350'	12%	35

NOTES:
1 Minimum longitudinal gradient shall be 1.0 percent for all road classificationis shown above.
2 The maximum grade for a permanent cul-de-sac street turning area shall be 6 percent.
3 The maximum grade for a temporary cul-de-sac street turning area shall be that of the classification of the road being constructed.
4 For standards, see County Design Standard Drawing DS-2, DS-3, DS-4, and Section 4.5N of these Standards.
5 Additional pavement and ROW may be required for CE Collectors (4 feet) and Light Collectors (12 feet) in Industrial/Commercial Zones.
6 CE roads needing additional turn lanes will require an additional 12 to 14 feet of pavement and ROW for each lane.
7 The maximum superelevation allowed on CE roads is 6%. Superelevation is not normally required on Non-CE roads.
8 CE roads designated with Bike Lanes will require an additional 10 feet of pavement and ROW. This may be increased to 12' for Collector Roads and above based upon the provisions in Section 7.3 of these standards.
9 The minimum curve radii, shown in the table above, are based on the design speed with 6% superelevation.
10 Interim roads are to be a minimum of 28 feet A.C. within a 40 feet graded roadbed. They may be larger if traffic volumes require more travel lanes.

LEGEND:
* Similar to existing Collector Road
** Similar to existing Town Collector
*** Similar to existing Rural Collector
+ Same as existing Light Collector
++ Similar to existing Rural Light Collector
+++ New Classification Standard

TABLE 2B: COUNTY OF SAN DIEGO - PUBLIC ROAD STANDARDS

NON-CIRCULATION ELEMENT ROAD CLASSIFICATIONS

ROAD CLASSIFICATION	# LANES / LANE WIDTH	MEDIAN WIDTH	R.O.W. WIDTH	ROAD SURFACING WIDTH	PAVED SHOULDERS (# / WIDTH)	PARKWAY WIDTH	MINIMUM CURVE RADIUS	MAXIMUM DESIRABLE GRADE	MINIMUM DESIGN SPEED (MPH)
Residential Collector	2 / 12'	-	60'	40'	2 / 8'	10'	300'	12%	30
Residential	2 / 12'	-	56'	36'	2 / 6'	10'	200'	15%	30
Residential Cul-de-sac	2 / 12'	-	52'	32'	2 / 4'	10'	200'	15%	30
Residential Loop	2 / 12'	-	52'	32'	2 / 4'	10'	200'	15%	30
Industrial/Commerical Collector	4 / 12'	-	88'	68'	2 / 10'	10'	300'	8%	30
Industrial/Commerical	2 / 16'	-	72'	52'	2 / 10'	10'	200'	8%	30
Industrial/Commercial Cul-de-sac	2 / 16'	-	72'	52'	2 / 10'	10'	200	8%	30
Frontage	2 / 12'	-	52' min	32' min	1 / 8'	10'	See above	See above	-
Alley	2 / 10'	-	20-30'	20-30'	None	None	50'	12%	n/a
Hillside Residential	See NOTE 4	-	-	-	-	-	-	-	-
Rural Collector *	2 / 12'	-	48'	28'	2 / 2'	10'	300'	12%	30
Rural Residential	2 / 12'	-	48'	28'	2 / 2'	10'	200'	15%	30

NOTES:
1 Minimum longitudinal gradient shall be 1.0 percent for all road classificationis shown above.
2 The maximum grade for a permanent cul-de-sac street turning area shall be 6 percent.
3 The maximum grade for a temporary cul-de-sac street turning area shall be that of the classification of the road being constructed.
4 For standards, see County Design Standard Drawing DS-2, DS-3, DS-4, and Section 4.5N of these Standards.
5 The minimum curve radii, shown in the table above, are based on the design speed with 6% superelevation.
6 Interim roads are to be a minimum of 28 feet A.C. within a 40 feet graded roadbed. They may be larger if traffic volumes require more travel lanes.

LEGEND: * Serves lots > 2 acres in size w/ no demand for on-street parking

5. Collector Roads/Rural Collector Roads

   Access is controlled with new development required to provide common driveways, access roads and, on occasion, signalized intersections. Residential lots are required to be served from interior residential roads.

6. Community Collector

   Access is controlled with new development required to provide common driveways, access roads and, on occasion, signalized intersections. Residential lots are required to be served from interior residential roads.

7. Boulevard

   Access is controlled with new development required to provide common driveways, access roads and, on occasion, signalized intersections. Residential lots are required to be served from interior residential roads.

8. Town Collector Roads

   Access is controlled with new development required to provide common driveways, access roads or signalized intersections. Residential lots are required to be served from interior residential roads. Commercial areas are required to provide driveway separation as identified in Section 6.1.C.2 as if the driveways were Non-Circulation Element roads.

9. Light Collector Roads/Rural Light Collector Roads

   Access is generally controlled, with subdivisions and commercial developments required to provide access roads and common driveways respectively. Residential lots are required to be served from interior residential roads, where possible.

10. Minor Collector

    Access is generally controlled. Lots in subdivisions are required to be served from interior residential roads. Commercial areas are required to be provided with common driveways for access.

10. Recreational Parkways/Rural Mountain Roads

    Access is generally controlled. Lots in subdivisions are required to be served from interior residential roads. Commercial areas are required to be provided with common driveways for access.

B. Intersections

Intersectional sight distance shall have priority over all other standards and shall be achieved within standard right-of-way.

In general, at the intersection of Circulation Element roads, the right-of-way and improvement requirements of each leg of the intersection may be changed to the next higher road classification or to a special intersection design based on a traffic analysis of the intersection.

In the event a subdivision creates traffic requiring the construction of additional turning lanes and other safety features at a designated intersection, the subdivider shall construct or reconstruct such intersection.

C. Additional Turn Lanes

1. Prime Arterial and Expressway, if not grade separated

   Where the left turn traffic volume is estimated to exceed 300 vehicles at peak hour, an additional 12 feet of right-of-way may be required for provision of a dual left turn lane. Minimum length of the additional left turn lane shall be 300 feet plus appropriate taper.

2. Major Road/Town Collector Road

   Where the left turn traffic volume at an intersection on the above Circulation Element road is estimated to exceed 300 vehicles at peak hour, an additional 12 feet of right-of-way shall be required for provision of a dual left turn lane. Minimum length of the additional left turn lane shall be 300 feet plus appropriate taper.

3. Community Collector with raised medians/Boulevards with raised medians

   Where the left turn traffic volume at an intersection on the above Circulation Element road is estimated to exceed 300 vehicles at peak hour, an additional 12 feet of right-of-way shall be required for provision of a dual left turn lane. Minimum length of the additional left turn lane shall be 300 feet plus appropriate taper.

4. Community Collector without raised medians/Boulevards without raised medians

   Where ~~a~~ the above Circulation Element road intersects another Circulation Element road or where a left turn lane is specified, an additional 14 feet of right-of-way shall be required to provide a left turn lane. Minimum length of the additional left turn lane shall be 250 feet plus appropriate taper.

5. Rural Collector/Rural Mountain Roads

   Where these roads intersect another Circulation Element road or where a left turn lane is specified, an additional 14 feet of right-of-way shall be required to provide a left turn lane. Minimum length of the additional left turn lane shall be 250 feet plus appropriate taper.

6. Light Collector/Rural Light Collector Roads/Minor Collector

Where these roads intersect another Circulation Element road or where a left turn lane is specified, an additional 14 feet of right-of-way shall be required to provide a left turn lane. Minimum length of the additional left turn lane shall be 200 feet plus appropriate taper.

D. Boulevards

Boulevards are four-lane roads with a wider parkway width (14 feet) that may be most suitable in village and town center areas with a high demand for pedestrian travel or rural areas with steep topography.

E. Town Collector Roads

Town collector roads are two lane divided roads to control access and turning movements in commercial or higher density residential areas. These roads are appropriate only in villages and rural villages and other multi-residential and commercial areas as determined by the Director or by the Board of Supervisors. This determination may be based upon existing and/or future traffic volumes, the number of existing and/or future access points (such as driveways and private streets), length of road and other similar factors.

F. Community Collector

Community Collectors are two-lane roads with variable right-of-way and improvement widths, as specified in Table 2A. Variations for the Community Collector include the provision of raised medians, continuous two-way left turn lanes, intermittent turn lanes, passing lanes and undivided two lanes roads. A right-of-way width of up to 84 feet may be obtained and may be most suitable for two-lane State highways where future passing lanes may be provided.

G Minor Collector

Minor Collectors are two-lane roads with variable right-of-way and improvement widths, as specified in Table 2A. Minimum median, shoulder and parkway widths are identified in Table 2A. Variations for the Minor Collector include the provision of raised medians, intermittent turn lanes, passing lanes and undivided two lanes roads. A wider right-of-way width of up to 82 feet may be obtained with an increased parkway width of 14 feet. The wider parkway width may be utilized in rural areas to improve visibility, improve tight curves and/or grade slopes. In villages and town centers the wider parkway may be utilized for landscape buffers and/or to enhance pedestrian and bicycle circulation.

H. Rural Collector and Rural Mountain Roads

Rural Collector and Rural Mountain roads are two lanes undivided roads preserving right-of-way of 84 feet and 100 feet respectively with additional right-of-way required at intersections. These roads are appropriate only in rural mountain areas with unique scenic and historic resources.

A Rural Collector road, or a Rural Mountain road, shall be designed with the traveled way placed within the right-of-way so as to minimize the physical impact on the terrain, vegetation, scenic features, and

wildlife habitats. A developer shall construct, in accordance with standard drawings, any required dikes or curbs and gutters, and a minimum of 40 feet of pavement width. Where Rural Collector roads or Rural Mountain roads abut property zoned commercial, industrial, or multiple residential, appropriate commercial or industrial standards shall be constructed by the developer.

I. Recreational Parkway

Recreational Parkway is a road which serves rural recreational traffic. Such a road is to be designed for pleasure travel in keeping with the rural or recreational setting that it traverses and serves.

Recreational Parkways shall be designed and improved as follows:

1. Right-of-way width for a Recreational Parkway shall be a minimum of 100 feet, except where such a road is included in a publicly-owned recreational facility the right-of-way width will be adjusted to include only the roadbed width plus appurtenant facilities.

2. The pavement width shall be a minimum of 40 feet. When travel in opposite directions is to be separated to accommodate terrain or other important natural features, the surfaced traveled way shall be a minimum width of 24 feet for each direction.

   Increased pavement widths will be required in such cases where the Director finds that such an increase is necessary to provide for the safe and free flow of traffic to enhance the recreational and pleasure driving aspects of the Recreational Parkway.

3. View site parking and roadside stopping areas shall be an integral part of the design and function of a Recreational Parkway. Where appropriate, paved roadside stopping areas with parking shall be provided. Proposed parking and roadside stopping areas shall have been reviewed and approved by each appropriate public agency when such Recreational Parkway traverses a recreational facility possessed by such public agency.

J. Interim Road

Standards for this classification of road are specified in Table 2A, Note 10. The exception to the standard is at intersections. A 40-foot pavement width instead of 28-foot pavement width will be required along the road and shall extend a minimum of 200 feet with appropriate taper in each direction from the centerline of the street intersection. Appropriate graded width shall be provided. Interim roads larger than 28 ft. A.C. within 40 ft. graded roadbed may be required if the anticipated traffic volumes are greater than can be safely accommodated on the minimum size road.

Section 4.5 NON-CIRCULATION ELEMENT ROADS

A. Residential Collector Road

A residential collector road is provided to collect local traffic from adjacent residential lots. Such roads are not envisioned as providing for through traffic generating in one community and destined for another. They are designed to accommodate local traffic volumes of between 1,500 and 4,500 average daily trips. A residential collector shall be provided as follows:

1. Right-of-way width shall be 60 feet.

2. Pavement width between the curb faces shall be 40 feet.

3. Knuckles may not be used.

B. Rural Residential Collector

A rural residential collector is intended to serve an area with lot sizes of 2 acres or more where there is little demand for on-street parking. A rural residential collector road is provided to collect local traffic from adjacent residential lots. Such roads are not envisioned as providing for through traffic generating in one community and destined for another. They are designed to accommodate local traffic volumes of between 1,500 and 4,500 average daily trips. A rural residential collector shall be provided as follows:

1. Right-of-way width shall be 48 feet.

2. Pavement width between the curb faces shall be 28 feet.

3. On-street parking is prohibited.

4. Knuckles may not be used.

C. Residential Road

A residential road shall provide access to the residential lots it passes by and abuts. It is not to be used in those instances where a road may be expected to serve in the future as a residential collector road. This road shall be used in those instances where the projected average daily vehicular traffic is not expected to exceed 1,500 trips. A residential road shall be provided as follows:

1. Right-of-way width shall be 56 feet.

2. Pavement width between the curb faces shall be 36 feet.

3. Knuckles may be used following the criteria shown on the County Standard Drawing.

4. Residential roads which are temporarily dead-ended shall end in a temporary cul-de-sac as shown on the County Standard Drawings unless the length is 200 feet or less, in which case no temporary cul-de-sac will be required.

D. Rural Residential Road

A rural residential road is intended to serve an area with lot sizes of 2 acres or more where there is little demand for on-street parking. A rural residential road shall provide access to the residential lots it passes by and abuts. It is not to be used in those instances where a road may be expected to serve in the future as a residential collector road. This road shall be used in those instances where the projected average daily vehicular traffic is not expected to exceed 1,500 trips. A residential road shall be provided as follows:

1. Right-of-way width shall be 48 feet.

2. Pavement width between the curb faces shall be 28 feet.

3. On-street parking is prohibited.

4. Knuckles may be used following the criteria shown on the County Standard Drawings.

5. Residential roads which are temporarily dead-ended shall end in a temporary cul-de-sac as shown on the County Standard Drawings unless the length is 200 feet or less, in which case no temporary cul-de-sac will be required.

E. Residential Cul-De-Sac Road

A residential cul-de-sac is a dead-end road which provides access to adjacent residential lots. Residential cul-de-sac roads are to provide vehicular access where the projected average daily vehicular trips aree below 400. Residential cul-de-sacs roads shall be provided as follows:

1. Right-of-way width shall be 52 feet.

2. Pavement width between the curb faces shall be 32 feet.

3. Minimum radius of the cul-de-sac shall be 38 feet to curb within a 48 foot radius of right-of-way.

4. Knuckles may be used following the criteria shown on the County Standard Drawing.

5 Residential cul-de-sacs roads are not to exceed 600 feet in length.

F. Residential Loop Road

A residential loop road is a local purpose road which is to accommodate a maximum of 200 projected average daily vehicular trips. Residential loop roads shall be provided as follows:

1. Right-of-way width shall be 52 feet.

2. Pavement width between the curb faces shall be 32 feet.

3. Knuckles may be used following the criteria shown on the County Standard Drawing.

5. Loop roads in excess of 600 feet shall be constructed to residential or residential collector standards in accordance with projected average daily vehicle trips.

G. Industrial/Commercial Collector Road

This road shall provide access to abutting lots zoned for industrial or commercial purposes and also collect traffic from intersecting industrial roads, commercial roads, or collector roads, or roads which provide access to property which has an area of more than five acres and is zoned for commercial purposes, or which will be required to carry more than 4,500 average daily vehicular trips. Industrial/Commercial collector roads shall be provided as follows:

1. Right-of-way width shall be 88 feet.

2. Pavement width between the curb faces shall be 68 feet.

3. Knuckles may not be used.

H. Industrial/Commercial Road

This road shall provide access to abutting industrial/commercial lots where the projected average daily vehicular trips are less than 4,500. Industrial/Commercial roads shall be provided as follows:

1. Right-of-way width shall be 72 feet.

2. Pavement width between the curb faces shall be 52 feet.

3. Knuckles may be used following the criteria shown on the County Standard Drawing.

I. Industrial/Commercial Loop Road

An industrial/commercial loop road may be used in those instances where the projected average daily vehicular trips are less than 4,500. Industrial/Commercial loop roads shall be provided as follows:

1. Right-of-way width shall be 72 feet.

2. Pavement width between the curb faces shall be 52 feet.

3. Knuckles may be used following the criteria shown on the County Standard Drawing.

J. Industrial/Commercial Cul-De-Sac Road

An industrial/commercial cul-de-sac is a dead-end road which terminates in a cul-de-sac and provides access to abutting lots zoned for industrial or commercial purposes. Industrial/Commercial cul-de-sacs shall be used where the projected average daily vehicular trips do not exceed 1,000. Industrial/Commercial cul-de-sac roads shall be provided as follows:

1. Right-of-way width shall be 72 feet.

2. Pavement width between the curb faces shall be 52 feet.

3. The maximum length shall be 1,200 feet.

4. The cul-de-sac shall have a minimum 60 feet property line radius.

5. The cul-de-sac shall be paved to a radius of 50 feet.

6. Knuckles may be used following the criteria shown on the County Standard Drawing.

K. Half-Width Road (Boundary Road)

This road classification is for a road lying along a subdivision boundary for which only part of the right-of -way is to be presently dedicated and improved.

1. Right-of-Way

   a. When the half-width road is a residential street, residential collector road, industrial road, or commercial road, the minimum right-of-way width shall be 40 feet. In addition, the half-width road shall have a one-foot strip of land adjacent to and along the project boundary to which the access rights shall be waived.

   b. For all other roads, minimum right-of-way width for the half-width road shall be 40 feet or one-half of the ultimate right-of-way width, whichever is greater. In addition, the half-width road shall have a one-foot strip of land adjacent to and along the project boundary to which access rights shall be waived.

2. Surfaced roadbed shall be 28 feet in width, or one-half of the surfaced improvement that would be required for the development of the road at its ultimate width, whichever is greater.

L. Frontage Road

A frontage road is a road which is auxiliary to and located adjacent to a railroad, freeway, major highway, or arterial street, and which provides service to abutting property and adjacent areas and provides access control to the adjacent facility. A frontage road may be of any classification.

1. Right-of-way for the frontage road shall equal the standard right-of-way for whatever classification the frontage road is, less 4 to 1 0 feet, but in no event shall it be less than 52 feet.

2. Pavement width of the frontage road shall be equal to the improved width for whatever classification the frontage road is, less one 8 foot shoulder, but in no event shall the pavement width be less than 28 feet.

M. Alley

1. No new alleys shall be accepted into the County's maintained road system.

2. Alleys are to be privately maintained.

3. Existing alleys shall be as follows:

   a. Right-of-way shall be a minimum of 20 feet and a maximum of 30 feet in width.

   b. The intersection of an existing alley with a road shall provide adequate sight distance.

   c. Alleys shall not intersect.

   d. Pavement width shall be the full width of the right-of-way, except at intersections of roads, where curb returns with radii equal to the curb-to-property-line dimension shall be constructed.

   e. Pavement for alleys shall be portland cement concrete (P.C.C.).

N. Interim Road

Standards for this classification of road are specified in Table 2B, Note 6. The exception to the standard is at intersections. A 40-foot pavement width instead of 28-foot pavement width will be required along the road and shall extend a minimum of 200 feet with appropriate taper in each direction from the centerline of the street intersection. Appropriate graded width shall be provided. Interim roads larger than 28 ft. A.C. within 40 ft. graded roadbed may be required if the anticipated traffic volumes are greater than can be safely accommodated on the minimum size road.

O. Split-Level Road

A split-level road is a road of any classification providing the improvements and capacity provided in a normal road of the same classification but with each direction of traffic provided for at different elevations and separated by a median. Right-of-way shall be as follows:

1. The typical right-of-way section for a split-level road shall provide for the same parkway strip, parking lanes, traveled way, and turning lane area required for a normal road of the same classification and, in addition, shall provide:

   a. A shoulder, at least two feet in width, along the median (edge nearest centerline) of the lower roadway.

b. A strip at least four feet in width along the median edge of the upper roadway. In this strip the concrete curb or asphalt concrete dike, or approved barrier, shall be installed in those locations where they are required. Guardrail and/or retaining wall shall be required on the median side of the upper roadway when the difference in road level elevation exceeds 10 feet

c. An additional width sufficient to permit construction of the cut or fill slope without exceeding the safe slope angle determined from soil tests. In the case of vertical or near vertical cuts in rock material, an approved barrier shall be required on the median side of upper roadway. A shoulder at least 10 feet wide or an approach barrier shall be required on the median side of the lower roadway.

2. The width of the dedicated right-of-way shall not be less than the sum of the foregoing widths.

P. Hillside Residential Street

To encourage the orderly development of steep areas, certain deviations from the normal standards for subdivision streets will be permitted as shown on County Design Standard Drawings or as specified herein.

The narrower roadway sections provided in the hillside standards outlined below for category 1 hillside standards and category 2 hillside standards have a reduced capacity for traffic and on-road parking. Their use is therefore limited to residential roads in areas where the natural slope exceeds 15 percent and where at least 80 percent of the lots have a net area of not less than 20,000 square feet.

1. Category 1 hillside standards are identified as applying to those areas where the natural slope is between 15 and 20 percent.

   The method of determining the percent slope for a category 1 hillside development is as follows:

   a. Tabulate the cross-sections with slopes which are less than15 percent ~~or less~~.

   b. Tabulate the cross-sections with slopes which are 15 percent or greater but less than 20 percent.

   c. Add the lengths (L_1) for cross-sections computed in a. above.

   d. Add the lengths (L_2) for cross-sections computed in b. above.

   e. Perform calculation: $L_2 - (L_1 + L_2) \times 100 =$ "X" percent.

   f. If the "X" is 50 or greater, this meets category 1 hillside standards.

2. Category 2 hillside standards are identified as applying to those areas where the natural slope exceeds 20 percent.

The method of determining the percent slope for a category 2 hillside development is as follows:

a. Tabulate the cross-sections with slopes which are 20 percent or less.

b. Tabulate the cross-sections with slopes which are greater than 20 percent.

c. Add the lengths (L_1) for cross-sections computed in a. above.

d. Add the lengths (L_2) for cross-sections computed in b. above.

e. Perform calculation: $L_2 - (L_1 + L_2) \times 100 =$ "X" percent.

f. If the "X" is 50 or greater, this meets category 2 hillside standards.

3. Calculation comments for 1 and 2 above are as follows:

   a. Cross-sections shall be taken normal to the contour lines.

   b. The cross-sections shall be taken at uniform 50-foot intervals.

   c. Width of cross-sections shall be the limits of the proposed grading.

   d. Only one set of standards will be used for a road between intersections.

4. Category 1 hillside standards are as follows:

   a. Permissible street grades shall be increased to maximum of 20 percent grade.

   b. The graded road width may be reduced a maximum of 5 feet in either or both parkway areas.

   c. Street grades in excess of 15 percent shall not exceed 600 feet in length.

5. Category 2 hillside standards will allow utilization of any of the alternatives set forth as follows:

   a. Hillside residential two-way street alternatives 1, 2 and 3 are shown on County Design Standard Drawings.

   b. Minimum right-of-way for hillside streets is shown on the County Design Standard Drawings. Additional slope rights may be required to accommodate a particular situation.

   c. Hillside residential one-way street:

      (1) A section providing one 14-foot driving lane and one continuous 8-foot parking lane.

      (2) Minimum pavement width shall be 22 feet curb to curb.

(3) Minimum graded area shall be 30 feet wide.

(4) Minimum right-of-way shall be 38 feet wide.

(5) Maximum length between connections to crossing two-way streets shall be 1,200 feet.

(6) Where one-way streets are allowed, street pattern shall provide for return to point of origin in less than one mile.

d. Hillside residential streets that require a cul-de-sac shall be designed and improved by the developer in accordance with this section and the following:

(1) The minimum property line radius for the turning circle shall be 40 feet.

(2) The turning circle shall be paved to a radius of at least 30 feet.

e. Minimum horizontal curve radius shall be sufficient to provide a safe speed of at least twenty-five miles per hour in accordance with the current applicable section or figure of the Highway Design Manual of Instructions. On minimum or near-minimum curves, pavement widening shall be provided in accordance with the current applicable section or figure of the Highway Design Manual of Instructions.

7. Where a hillside residential street is authorized to serve a development meeting the definition of a residence district, Section 5.2 will be modified to provide for a 5-foot wide concrete sidewalk, concrete curb and gutter, and a two-foot wide graded area outside of the edge of the sidewalk.

SECTION 6

DESIGN STANDARDS

Section 6.1 INTERSECTIONS

A. Property line and curb return radii. The values below are provided for the majority of situations:

1. Commercial and Industrial General Plan Areas:

   a. Curb return radii shall be a minimum of 40 feet.

   b.Pr operty line radii shall be a minimum of 30 feet.

2. Other General Plan Areas:

   a. Curb return radii shall be a minimum of 30 feet.

   b.Pr operty line radii shall be a minimum of 20 feet.

3. Special routes identified to accommodate interstate trucks:

   a. Curb return radii shall be a minimum of 60 feet.

   b. Property line radii shall be a minimum of 50 feet.

B. Where the angle of intersection is less than 90 degrees, or where a sight distance problem may be anticipated, an increased property line radius may be required.

C. Minimum distance between roads entering into other roads shall be as follows:

1. Non-Circulation Element roads entering into other Non-Circulation Element roads shall have their centerlines separated by at least 200 feet.

2. Non-Circulation Element roads entering into a Circulation Element road shall have their centerlines separated by at least 300 feet.

3. Circulation Element roads entering into other Circulation Element roads shall have their centerlines separated by at least 600 feet.

E. The angle between centerlines of intersecting roads shall be as nearly a right angle as possible, but in no case less than 70 degrees or greater than 110 degrees. Where the angle between the centerlines is between 70 and 80 degrees or between 100 and 110 degrees, there shall be required on the acute angle corner of the intersection a taper to accommodate right-hand turning movements. Said taper shall be set back 5 feet at the exiting point of the curb return and extend 40 feet in such a manner as to safely allow completion of the right-hand turning movement.

F. Sight distance requirements at all intersections shall conform to the intersectional sight distance criteria as provided in Table 5:

TABLE 5

STANDARD CORNER SIGHT DISTANCE AT INTERSECTIONS

Design Speed, MPH	Minimum Corner Intersection Sight Distance in Feet*
60	600
50	500
40	400
30	300
20	200

*Corner sight distance measured along the direction of travel from a point on the minor road at least 10 feet from the edge of the major road pavement and measured from a height of eye of 3.5 feet on the minor road to a height of object of 4.25 feet on the major road (see County Road Standard Drawings DS-20A and DS-20B). The design speed used to determine the minimum sight distance requirement shall be the greater of the current prevailing speed (if known) and the minimum design speed of the respective road classification shown in Tables 2A and 2B. Additional corner intersection sight distance may be required for left turns at divided highways, left turns onto two-way highways with more than two lanes, or grades which exceed 3 percent, as per "AASHTO A Policy on Design of Highways and Streets".

G. The maximum grade at any intersection of two streets shall be 6 percent within the intersection and for at least 20 feet beyond the right-of-way of the intersecting street.

H. Where two road centerlines intersect, the lower classified road is not to intersect the primary road with a curve. Instead, the alignment of the lower classified road must intersect the primary road in a straight line for a length not less than the full width of the primary road's right-of-way.

I. Prior to the installation of a new traffic signal, traffic signal warrant analysis must be performed. The Californian Manual for Uniform Traffic Control Devices (CA MUTCD) should be consulted for procedures of conducting signal warrant analysis. The design and installation of the traffic signal and pavement markings should also conform to the CA MUTCD.

J. Roundabouts are also acceptable traffic control devices at intersections. Prior to placement of a roundabout a comprehensive engineering design prepared by a licensed civil engineer experienced in the design and construction of roundabouts must be prepared. A peer review of the roundabout design should also be provided prior to installation of a roundabout on a Circulation Element Road. "Roundabouts: An Informational Guide" published by the Federal Highway Administration should be consulted as a guide in the design of the roundabout. Striping and pavement markings for the roundabout should conform to the CA MUTCD.

Section 6.2 FUTURE ROAD EXTENSIONS

When any road is extended to a subdivision boundary for the purpose of providing a future connection to adjoining property, the subdivider shall submit an alignment and profile demonstrating the feasibility of such future extension.

The demonstration shall include a provision of acceptable sight distance for any intersecting street shown on the plan which is within the design sight distance of the subdivision boundary. Such demonstration shall also extend for a distance of ¼ mile from the subdivision boundary or longer if specific circumstances so dictate.

Section 6.3 GRADING

A. Roads shall be graded by the developer to full width of right-of-way with the following exceptions:

1. For Rural Collectors and Rural Mountain Roads, full grading may be required depending on expected ultimate traffic and/or special findings.

2. Grading for Recreational Parkways shall be minimized wherever possible. A11 embankments shall be contour graded to blend into the natural terrain and cut slopes are to be rounded. Graded slopes shall be as flat as possible and shall be planted in accordance with the surrounding natural flora.

3. The Director shall have the authority to modify full width grading requirements in areas where such modification would not compromise driver, cyclist, ~~or~~ pedestrian or equestrian safety or in any way be detrimental to the public. In any such case, slope rights for future grading and drainage facilities shall be dedicated.

   This requirement shall apply to all Circulation Element roads and to all other roads where the County has a legal interest (fee, road easement, rejected offer of dedication, irrevocable offer of dedication) or where improvement plans are required as a condition of approval of acceptance of the project.

B. Grading or excavating in an existing County road right-of-way shall not be permitted unless authorized by a valid permit.

C. Where required improvements extend beyond the public right-of-way and onto private land, the entity to provide such improvements shall acquire legal permission to trespass and construct the improvements. Permission is identified as a temporary construction easement or a letter signed by the owner of the private land or other documents acceptable to the Department of Public Works.

SANDAG's Trip Generation Rates

(NOT SO)

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

APRIL 2002

SANDAG
401 B Street, Suite 800
San Diego, California 92101
(619) 699-1900 • Fax (619) 699-1950

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[5]							
Car Wash							
Automatic		900/site, 600/acre**	4%	(5:5)	9%	(5:5)	
Self-serve		100/wash stall**	4%	(5:5)	6%	(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[5]							
Super Regional Shopping Center (More than 60 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 restaurent(s), grocery and drugstore)	[47:31:22]	80/1000 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.**	9%	(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)	3%	(6:4)	9%	(5:5)	
		5/dwelling unit, 200/acre* (residential only)	9%	(3:7)	13%	(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. 50/acre**	30%	(6:4)	9%	(4:6)	5.0
Elementary	[57:25:10]	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[5]	[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)	[79:19:2]	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%	(2:6)	
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*	16%	(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.

LAND USE	TRIP CATEGORIES (PRIMARY:DIVERTED:PASS-BY)[P]	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)[L]
LIBRARY	[44:44:12]	50/1000 sq. ft., 400/acre**	2%	(7:3)	10%	(5:5)	3.9
LODGING	[58:38:4]						7.6
Hotel (w/convention facilities/restaurant)		10/occupied room, 300/acre	6%	(6:4)	8%	(6:4)	
Motel		9/occupied room, 200/acre*	8%	(4:6)	9%	(6:4)	
Resort Hotel		8/occupied room, 100/acre*	5%	(6:4)	7%	(4:6)	
Business Hotel		7/occupied room**	8%	(4:6)	9%	(6:4)	
MILITARY	[82:16:2]	2.5/military & civilian personnel*	9%	(9:1)	10%	(2:8)	11.2
OFFICE							
Standard Commercial Office (less than 100,000 sq. ft.)	[77:19:4]	20/1000 sq. ft.,[C] 300/acre*	14%	(9:1)	13%	(2:8)	8.8
Large (High-Rise) Commercial Office (more than 100,000 sq. ft., 6+ stories)	[82:15:3]	17/1000 sq. ft.,[C] 600/acre*	13%	(9:1)	14%	(2:8)	10.0
Office Park (400,000+ sq. ft.)		12/1000 sq.ft., 200/acre* **	13%	(9:1)	13%	(2:8)	
Single Tenant Office		14/1000 sq. ft., 180/acre*	15%	(9:1)	15%	(2:8)	8.8
Corporate Headquarters		7/1000 sq. ft., 110/acre*	17%	(9:1)	16%	(1:9)	
Government (Civic Center)	[50:34:16]	30/1000 sq. ft.**	9%	(9:1)	12%	(3:7)	6.0
Post Office							
Centrel/Walk-In Only		90/1000 sq. ft.**	5%		7%		
Community (not including mail drop lane)		200/1000 sq. ft., 1300/acre*	8%	(6:4)	9%	(5:5)	
Community (w/mail drop lane)		300/1000 sq. ft., 2000/acre*	7%	(5:5)	10%	(5:5)	
Mail Drop Lane only		1500 (750 one-way)/lane*	7%	(5:5)	12%	(5:5)	
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*	8%	(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)**			8%	(6:4)	
San Diego Zoo		115/acre*					
Sea World		60/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]	8%	(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[S]	[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).

Excerpts from County's Guidelines for Determining Significance

COUNTY OF SAN DIEGO

GUIDELINES FOR DETERMINING SIGNIFICANCE
AND
REPORT FORMAT AND CONTENT REQUIREMENTS

TRANSPORTATION AND TRAFFIC

LAND USE AND ENVIRONMENT GROUP

Department of Planning and Land Use
Department of Public Works

Second Revision
June 30, 2009

Second Modification
August 24, 2011

APPROVAL

I hereby certify that these **Guidelines for Determining Significance and Report Format and Content Requirements for Transportation and Traffic** are a part of the County of San Diego, Land Use and Environment Group's Guidelines for Determining Significance and Technical Report Format and Content Requirements and were considered by the Director of Planning and Land Use, in coordination with the Director of Public Works on the 24th day of August, 2011.

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RICHARD E. CROMPTON
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I hereby certify that these **Guidelines for Determining Significance and Report Format and Content Requirements for Transportation and Traffic** are a part of the County of San Diego, Land Use and Environment Group's Guidelines for Determining Significance and Technical Report Format and Content Requirements and have hereby been approved by the Deputy Chief Administrative Officer (DCAO) of the Land Use and Environment Group on the 24th day of August, 2011. The Director of Planning and Land Use is authorized to approve revisions to these Guidelines for Determining Significance and Report Format and Content Requirements for Transportation and Traffic, except any revisions to Section 4.0 of the Guidelines for Determining Significance for Transportation and Traffic must be approved by the Deputy CAO.

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COUNTY OF SAN DIEGO

GUIDELINES FOR DETERMINING SIGNIFICANCE

TRANSPORTATION AND TRAFFIC

LAND USE AND ENVIRONMENT GROUP

Department of Planning and Land Use
Department of Public Works

Second Revision
June 30, 2009

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August 24, 2011

EXPLANATION

These Guidelines for Determining Significance for Transportation and Traffic and information presented herein shall be used by County staff in their review of discretionary projects and environmental documents pursuant to the California Environmental Quality Act (CEQA). These Guidelines present a range of quantitative, qualitative, and performance levels for particular environmental effects. Normally, (in the absence of substantial evidence to the contrary), non-compliance with a particular standard stated in these Guidelines will usually mean the project will result in a significant effect, whereas compliance will normally mean the effect will be determined to be "less than significant." Section 15064(b) of the State CEQA Guidelines states:

> "The determination whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved, based to the extent possible on factual and scientific data. An ironclad definition of significant effect is not always possible because the significance of an activity may vary with the setting."

These Guidelines assist in providing a consistent, objective and predictable evaluation of significant effects. These Guidelines are not binding on any decision-maker and should not be substituted for the use of independent judgment to determine significance or the evaluation of evidence in the record. The County reserves the right to request further, project specific, information in its evaluation of a project's environmental effects and to modify these Guidelines in the event a scientific discovery or factual data alters the common application of a Guideline. In addition, evaluations to verify the applicability of the significance guidelines for individual project conditions may be necessary. Additional evaluations may include analysis of vehicle headways, speeds, average gaps, queues, delay, or other factors.

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List of Acronyms

ADT	Average Daily Trips
CALTRANS	California Department of Transportation
CEQA	California Environmental Quality Act
CMP	Congestion Management Plan
DPLU	Department of Planning and Land Use
HCM	Highway Capacity Manual
ITE	Institute of Traffic Engineers
LOS	Level of Service
min	Minute
mph	Miles per Hour
MTDB	Metropolitan Transit Development Board
NCTD	North San Diego County Transit District
PFE	Public Facilities Element
RTP	Regional Transportation Plan
SANDAG	San Diego Association of Governments
SANTEC	San Diego Traffic Engineers' Council
sec	Second
TIS	Traffic Impact Study
V/C	Volume to Capacity
VMT	Vehicle Miles Traveled

INTRODUCTION

This document provides guidance for evaluating adverse environmental effects that a proposed project may have on transportation and traffic. Specifically, this document addresses the following questions listed in the California Environmental Quality Act (CEQA) Guidelines, Appendix G, XV, Transportation/Traffic[1]:

Would the project:

a) Conflict with an applicable plan, ordinance or policy establishing measures of the effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths and mass transit?

b) Conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

g) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

Traffic and transportation related impacts are major concerns for the San Diego Region. As population in the San Diego Region grows, traffic, as measured by average daily trips (ADT), also grows. Land development within the San Diego region contributes to growth in population and growth in traffic. The rate of land development, population and traffic growth has often outpaced the provision of needed transportation infrastructure to adequately accommodate the increased growth. As a result, traffic congestion is a common occurrence on many freeways, highways and arterials in the San Diego region.

[1] The State CEQA Guidelines, Appendix G, XV Transportation/Traffic list two other transportation/traffic related questions (c and e), which are not addressed in this document. Question c states, "Would the project result in a change in air traffic patterns, including either an increase in traffic levels or a change in locations that results in substantial safety risks?" Question c is concerned with airport traffic safety and is addressed under the County's Guidelines for Determining Significance for Airport Hazards. Questions e states, "Would the project result in inadequate emergency access? Question e is addressed under the County's Guidelines for Determining Significance for Fire Protection Planning, which addresses the needs of emergency service providers (fire and sheriff, etc.), including emergency access requirements.

1.0 GENERAL PRINCIPLES AND EXISTING CONDITIONS

The population of the San Diego Region is projected to increase from approximately 2.9 million people today to about 3.9 million in the year 2030. As a result, the number of forecasted Vehicle Miles Traveled (VMT) in the San Diego Region is projected to increase 50 percent from current levels. Road improvements will be needed to accommodate the anticipated growth in traffic; otherwise, traffic congestion will increase significantly.

1.1 Level of Service

As a means of measuring and evaluating traffic congestion, the concept of "level of service" was created. Level of service (LOS) is a quality of service measure that describes operational conditions on a transportation facility, such as a roadway or intersection. Levels of service are established based upon the driver's perspective. This service measure is a general overall measurement of several conditions such as speed and travel time, freedom to maneuver, traffic interruption, and comfort and convenience. Safety is an important concern but, typically, is not included in the measures that establish service levels.

Six LOS categories are defined for each type of transportation facility. Letters designate each level, from A to F, with LOS A representing the best operating conditions and LOS F the worst. Each LOS represents a range of operating conditions and the driver's perception of those conditions. Methods for identifying levels of service vary based upon the type of transportation facility. Criteria for identifying levels of service on County of San Diego arterials are provided in the County of San Diego Public Road Standards. Methods of identifying levels of service for freeways, highways and intersections are provided in the Highway Capacity Manual (HCM). A detailed discussion of level of service is provided in Attachment A. Also, definitions of some key traffic terms are included in Attachment B.

Levels of service are used primarily to assess how substantial increases in vehicular traffic may affect traffic congestion on specific transportation facilities, such as freeways, arterials, and intersections. Procedures have also been established to adjust the evaluation to account for trucks, buses, grade and pedestrian volumes. Substantial traffic volume increase may also result in other traffic related impacts. Where applicable, evaluations should be made to assess the potential for traffic related impacts for the following items:

- Regional transportation facilities; including freeways, state highways and ramps
- Local circulation and road network
- Adequacy of existing roadway or intersection design features
- Access (both primary and secondary, as required)
- Alternative transportation modes; including pedestrians, bicyclists and transit

1.2 Traffic Impact Studies

In order to evaluate potential traffic impacts that may result from a specific land development or road improvement project, traffic impact studies are often prepared. Traffic impact studies include estimates of the amount of traffic generated by the project, distributions of project traffic or redistributions of traffic caused by the project, assessments of potential traffic impacts, and when applicable, the identification of mitigation measures to alleviate project-related traffic impacts.

The agency responsible for final approval of a project's traffic study is the agency that has discretionary approval of the project. For most projects located in the unincorporated area of San Diego, the agency approving the traffic study would be the County of San Diego. However, coordination with other affected agencies is often necessary in the preparation of traffic impact studies. The San Diego Association of Governments (SANDAG) is the agency responsible for the oversight of regional transportation planning. The California Department of Transportation (Caltrans) is the State agency responsible for planning, constructing and maintaining the State highway network. In addition to the County of San Diego, eighteen other municipalities within the San Diego Region are responsible for planning, constructing and maintaining local transportation networks within their respective areas of jurisdiction.

For more information on Traffic Impact Studies refer to the Transportation and Traffic Report Format and Content Requirements.

1.3 Regional Transportation Plan

On March 28, 2003, the SANDAG Board adopted the 2030 Regional Transportation Plan (RTP) and in February 2005, Amendment Number 1 to the RTP was approved. Mobility 2030 establishes goals and policies for addressing the needs of the regional transportation network in the San Diego region. In addition to identifying highway and road improvements, Mobility 2030 emphasizes Managed/High Occupancy Vehicle (HOV) lanes to accommodate transit services, as well as carpools and vanpools. It also emphasizes the coordination of transportation infrastructure and services with land use planning and focuses on a variety of performance measures, such as average travel times, instead of the traditional level of service measurements.

Under the "reasonably expected revenue" scenario, Mobility 2030 estimates $42 billion to be available to implement proposed improvements in the plan. Under this scenario, 19% would be provided through the Transnet extension, 28% would be provided by local revenue sources, 33% would be provided by state sources and 20% would come from federal sources. Identified improvements would not focus solely on road improvements, but are expected to increase mobility by making improvements to transit, highways, local street networks, land use systems and demand management systems.

2.0 EXISTING REGULATIONS AND STANDARDS

The following list details the most significant regulations and standards that address traffic and transportation issues in California and the County of San Diego.

2.1 State Regulations and Standards

California Environmental Quality Act (CEQA)[2]
[http://ceres.ca.gov/topic/env_law/ceqa/guidelines/]
Under the California Environmental Quality Act (CEQA) lead agencies are required to consider traffic impacts when assessing the environmental impacts of proposed projects. CEQA requires discretionary projects to evaluate the effect projects may have on traffic circulation and other transportation related impacts.

2.2 Local Regulations and Standards

Public Facilities Element (Part XII) of the San Diego County General Plan
[http://ceres.ca.gov/planning/counties/San_Diego/plans.html]
The County of San Diego General Plan Public Facilities Element establishes policies and implementation measures regarding the assessment and mitigation of traffic impacts of new development. One of the goals of the Public Facilities Element (PFE) is to provide "A safe, convenient, and economical integrated transportation system including a wide range of transportation modes (PFE, page XII-4-18)." The PFE also identifies an objective in the Transportation Section to provide a "Level of Service C or better on County Circulation Element roads. (PFE, page XII-4-18)." The PFE, however, establishes LOS D as an off-site mitigation limit for discretionary projects. When an existing Level of Service is already D, "a LOS of D may be allowed (PFE, page XII-4-18)." According to the PFE, projects that significantly increase congestion on roads operating at LOS E or LOS F must provide mitigation. According to the PFE, this mitigation can consist of a fair share contribution to an established program or project to mitigate the project's impacts. If impacts cannot be mitigated, the project will be denied unless a specific statement of overriding findings is made pursuant to Sections 15091 and 15093 of the State CEQA Guidelines to approve the project as proposed.

San Diego County Transportation Impact Fee (TIF) Program/Ordinance
[http://www.sdcounty.ca.gov/dpw/land/tif.html]
The County of San Diego Board of Supervisors adopted a Transportation Impact Fee Ordinance (April 2005/Updated January 2008) for the unincorporated area of San Diego County. The ordinance enables the County to implement Transportation Impact Fee (TIF) programs. The TIF program requires payment of fees that constitute a proposed project's fair share contribution towards the construction costs of the planned transportation facilities that are affected by the proposed development. The TIF fees are collected as a condition of approval of a subdivision or prior to issuance of a development permit, including and most typically a building permit.

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[2] Public Resources Code 21000-21178; California Code of Regulations, Guidelines for Implementation of CEQA, Appendix G, Title 14, Chapter 3, §15000-15387.

The TIF Program provides a mechanism for mitigating the impacts created by future growth within the unincorporated area. The TIF is offered to developers to facilitate compliance with the CEQA mandate that development projects mitigate their indirect, cumulative traffic impacts. The County TIF Program assesses the fee on all new development that results in new/added traffic. The primary purpose of the TIF is twofold: (1) to fund the construction of identified roadway facilities needed to reduce, or mitigate, projected cumulative traffic impacts resulting from future development within the County; and (2) to allocate the costs of these roadway facilities proportionally among future developing properties based upon their individual cumulative traffic impacts.

Cumulative impacts are those impacts caused collectively by all development within the community. Cumulative impacts can result from individually minor, but collectively significant projects taking place over a period of time (CEQA Guidelines §15355). The CEQA Guidelines recognize that mitigation for cumulative impacts may involve the adoption of ordinances or regulations (CEQA Guidelines §15130) such as the County-adopted Transportation Impact Fee Program.

TIF funds are collected into 23 local Community Planning Area accounts, three regional accounts, and three regional freeway ramp accounts. TIF funds are only used to pay for improvements to roadway facilities identified for inclusion in the TIF Program, which include both County roads and Caltrans highway facilities TIF funds collected for a specific local or regional area must be spent in the same area. For example, the TIF collected in the North Region TIF account may only be used for improvements to TIF facilities in the North Region. By ensuring TIF funds are spent for the specific roadway improvements identified in the TIF Program, the CEQA mitigation requirement is satisfied and the Mitigation Fee Act nexus is met.

As part of the TIF Program process, the transportation infrastructure needs are characterized as one of the following: existing deficiencies; direct impacts of future development; or indirect (cumulative) impacts of future development. Existing roadway deficiencies are the responsibility of existing developed land uses and government agencies, and cannot be financed with impact fees. The TIF Program is not intended to mitigate direct impacts which will continue to be the responsibility of individual development projects. Therefore, the TIF Program is only designed to address the cumulative impacts associated with new growth.

Recognizing that an individual development project is not wholly responsible for cumulative traffic impacts, each development project is required to mitigate in proportion to the project's estimated traffic generation. The County TIF Program enables projects to achieve CEQA compliance by paying a fair share toward the cost of improving roads in the future as the levels of service become unacceptable due to the increased traffic volume caused by the cumulative impacts, of various developments. The County's TIF Program goes into detail in identifying anticipated development, the roads affected, roadway costs, and the existing and projected levels of service on those roads. As

sufficient funds become available, the County will implement the improvements that it has programed.

While contribution to the TIF Program will typically mitigate a project's cumulative impacts within the unincorporated area, certain projects would result in increases in density or intensity beyond the growth projections analyzed in the TIF report. These projects, such as General Plan Amendments, Specific Plan Amendments, Rezones and some Major Use Permits, may be required to implement mitigation for cumulative impacts beyond payment of the TIF. In addition, the TIF Program does not mitigate for cumulative impacts that occur in neighboring jurisdictions.

Cumulative Traffic Impacts at Joint County/City Facilities

- The TIF does cover cumulative traffic impacts for road segments and/or intersections that are located along county/city boundaries.
- The TIF does not cover cumulative traffic impacts that occur entirely within a neighboring city.

San Diego County Public Road Standards
[http://www.sdcounty.ca.gov/dpw/land/rtelocs.html]
These standards provide minimum design and construction requirements for public roads. Levels of service are established for Circulation Element roads. Levels of service are not applied with the non-Circulation Element residential roads. Target design capacities, however, have been identified for these roads.

San Diego County Private Road Standards
[http://www.sdcounty.ca.gov/dpw/land/rtelocs.html]
These standards provide minimum design and construction requirements for private roads. Levels of service are not established for private roads. Minimum design and construction requirements, however, are established based upon the projected average daily traffic (ADT) volume on the road.

SANDAG Standards - Congestion Management Program[3]
[http://www.sandag.org/uploads/projectid/projectid_13_8907.pdf]
State Proposition 111, passed by voters in 1990, established a requirement that urbanized areas prepare and regularly update a Congestion Management Program (CMP), which is a part of SANDAG's Regional Transportation Plan (RTP). The purpose of the CMP is to monitor the performance of the region's transportation system, develop programs to address near-term and long-term congestion, and better integrate transportation and land use planning. SANDAG, as the designated Congestion Management Agency for San Diego region, must develop, adopt and update the CMP in response to six specific legislative requirements further described in the report. SANDAG, local jurisdictions, and transportation operators (i.e., Caltrans, Metropolitan Transit Development Board (MTDB), North San Diego County Transit District (NCTD), etc.) are responsible for implementing and monitoring the CMP.

[3] Congestion Management Program Update, November 2008, San Diego Regional Planning Agency

One component of the CMP is a Land Use Analysis Program. Under this program, the CMP requires a review of large projects that generate 2,400 or more average daily trips or 200 or more peak hour trips. This review must assess impacts to state highways and regionally significant arterials. An excerpted list of these roadways from the CMP is included below.

List of CMP System Roadways

CMP Freeways
Interstate 5: Orange County Line to U.S./Mexico Border
Interstate 8: Nimitz Boulevard to Imperial County Line
Interstate 15: Riverside County Line to I-5
Interstate 805: I-5 (North) to I-5 (South)
State Route 52: I-5 to SR 25
State Route 54: I-5 to Briarwood Road
State Route 56: I-5 to I-15
State Route 67: Mapleview Street to I-8
State Route 78: I-5 to North Broadway
State Route 94: I-5 to Avocado Boulevard
State Route 125: SR 54 to SR 52
State Route 125: SR 905 to San Miguel Road[1]
State Route 163: I-15 to I-5
State Route 905: Oro Vista Road to Otay Mesa Road

CMP Highways
State Route 54: SR 94 to Grove Road
State Route 67: SR 78 to Mapleview Valley
State Route 75: I-5 (North) to I-5 (South)
State Route 76: Coast Highway to SR 79
State Route 78: North Broadway to Imperial County Line
State Route 79: Riverside County Line to I-8
State Route 94: Avocado Boulevard to Old Highway 80
State Route 282: Alameda Boulevard to Orange Avenue

CMP Arterials
(1) Manchester Avenue/El Camino Real: I-5 to SR 76/Mission Avenue
(2) Palomar Airport Road/San Marcos Boulevard: I-5 to SR
(3) Olivenhain Road/Rancho Santa Fe Road: El Camino Real to SR 78
(4) Centre City Parkway: 1-15 (North) to I-15 (South)
(5) Scripps Poway Parkway: I-15 to SR 67
(6) La Jolla Village Drive/Miramar Road: I-5 to I-15
(7) Balboa Avenue: I-5 to I-15
(8) Sea World Drive/Friars Road/Mission Gorge Road/Woodside Avenue: I-5 to SR 67
(9) Fletcher Parkway/Broadway/E. Main Street: I-8 (West) to I-8 (East)
(10) Nimitz Blvd./North Harbor Dr./Grape & Hawthorne Streets/Pacific Highway/Harbor Drive: I-8 to I-5
(11) Otay Mesa Road-Interim SR 905: SR 905 (West) to SR 905 (East)[6]

2.3 Regional and Local Traffic Impact Analysis Guidelines

San Diego Traffic Engineers' Council (SANTEC) and the Institute of Traffic Engineers (ITE)

The San Diego Traffic Engineers' Council (SANTEC) and the local chapter of the Institute of Traffic Engineers (ITE) have endorsed for use the "Guidelines of Traffic Impact Studies (TIS) in the San Diego Region." These guidelines were prepared by a traffic subcommittee formed by SANDAG. The purpose of the subcommittee was to develop a model set of guidelines for the analysis of traffic impacts for adoption and use by the various jurisdictions in the San Diego region. The goal was to foster more consistency in the assessment of traffic impacts in the San Diego region. These guidelines establish a LOS target of LOS D. Impacts would be identified for those projects that significantly increase the volume and or delay at intersections and road segments operating below LOS D (i.e. at LOS E of LOS F) either prior to or as a result of the proposed project. These guidelines have been incorporated into an appendix of the Regional Congestion Management Program (CMP) that is formally adopted by SANDAG for use by local jurisdictions. These guidelines are often used as a guideline by many local traffic-engineering consultants in the preparation of traffic impact studies in the San Diego Region. These guidelines, however, do not provide specific direction regarding the assessment of cumulative traffic impacts, unsignalized intersections or consistency with recent changes in the CEQA guidelines that removed consideration of de minimis findings/effects.

California Department of Transportation (Caltrans)

The California Department of Transportation (Caltrans) has prepared a "Guide for the Preparation of Traffic Impact Studies." Objectives for the preparation of this guide include providing consistency and uniformity in the identification of traffic impacts generated by local land use proposals. In terms of level of service, Caltrans endeavors to maintain a goal of LOS C on State highway facilities. However, Caltrans acknowledges that this may not always be feasible. In these circumstances, Caltrans often accepts lower LOS on facilities that are currently operating below the LOS C objective.

City of San Diego

The City of San Diego has prepared a "Traffic Impact Study Manual." The purpose is to provide guidelines to consultants on how to prepare traffic impact studies in the City of San Diego and to ensure consistency on the preparation of these studies. Impacts are identified if the proposed project will increase the traffic volume on a road segment above an identified allowable increase. The better the initial level of service on the road segment, the higher the allowable volume increase.

3.0 TYPICAL ADVERSE EFFECTS

3.1 Traffic Congestion

Traffic related impacts are most often associated with motorized congestion on local roads and the regional circulation network. As the San Diego region grows, the number of vehicle trips that are generated by residents also grows. Historically, motor-vehicle trips have been increasing at a faster rate than that of the population growth. It is forecasted that more than 16 million vehicle trips would be made in this region each weekday by the year 2030. The personal automobile is expected to remain the primary method of travel in the region thus leading to increased motor-vehicle delay. However planned freeway and local road expansion, increased trolley and bus service, better rail service, and greater provisions for non-motorized travel would alleviate some of the traffic congestion. SANDAG's 2030 RTP details the regional improvements that are projected to occur within a twenty-year time frame, but even with these improvements providing a balanced and efficient transportation system will remain a challenge.

Increased personal automobile use affects operations on roadway segments and at intersections and ramps, which in turn results in decreases in traffic flow on roadways and longer queues at intersections and ramps. These delays add time to drivers' daily commutes and can cause noticeable increases in traffic congestion.

The County has established a level of service (LOS) of D a baseline goal for acceptable level of service on a roadway or at an intersection. This baseline, however, may not be achievable or desirable for many corridors and/or intersections. Substantial impacts to biological resources, community character, historical buildings, existing residences or businesses, and/or other resources may make physical improvements to provide LOS D or better impractical or infeasible.

It is important to note that policies aimed at avoiding traffic congestion may conflict with other important community goals or values. Standards that solely measure motor vehicle level of service do not account for the experience of other road users. This may discourage infill development or land use goals identified in a community plan to promote decreased reliance on automobile trips. Mitigation measures to improve an intersection or widen a road may conflict with the walkability of a town center or preservation of sensitive environmental resources. Finally, enhancing roadway capacity may have the adverse effect encouraging more people to drive thereby conflicting with goals that encourage multi-modal transportation and/or seek to reduce vehicle miles traveled.

3.2 Connectivity

The County's road network is made up of a variety of roadway classifications, which allow people to travel throughout the County. However, at times there are physical limitations, such as steep topography, which partially constrain connectivity on existing roadways and preclude the construction on new roadway connections. In order to address connectivity issues alternative road networks to access potential connections may be required.

3.3 Hazards Due to an Existing Transportation Design Feature

Increased traffic generated or redistributed by a proposed project may cause a significant traffic operational impact to an existing transportation design feature and result in potential hazards. These hazards can occur due to a design features or physical configuration of existing or proposed access roads and can adversely affect the safe transport of vehicles along a roadway. The physical conditions of the project site and surrounding area, such as curves, slopes, walls, landscaping or other barriers, may also result in vehicle conflicts with other vehicles or stationary objects.

3.4 Hazards to Pedestrians or Bicyclists

Increased motor vehicle traffic generated or redistributed by a proposed project may cause a significant traffic operational impact to pedestrians or bicyclists and result in potential hazards. These hazards can occur for a variety of reasons including:

- A design feature or physical configurations on a road segment or at an intersection that may adversely affect the visibility of pedestrians or bicyclists to drivers entering and exiting the site, and the visibility of cars to pedestrians and bicyclists;

- High amount of pedestrian activity at the project access points.

- Precluding or substantially hindering the provision of a planned bike lane or pedestrian facility on a roadway adjacent to the project site.

- The physical conditions of the project site and surrounding area, such as curves, slopes, walls, landscaping or other barriers may result in vehicle/pedestrian, vehicle/bicycle conflicts.

- The project may result in a substantial increase in pedestrian or bicycle activity without the presence of adequate facilities.

4.0 GUIDELINES FOR DETERMINING SIGNIFICANCE

The following significance guidelines should guide the evaluation of whether a significant impact to transportation and traffic will occur as a result of project implementation. A project will generally be considered to have a significant effect if it proposes any of the following, absent specific evidence to the contrary. Conversely, if a project does not propose any of the following, it will generally not be considered to have a significant effect on transportation and traffic, absent specific evidence of such an effect.

This section provides guidance for evaluating adverse environmental effects a project may have in relation to traffic and transportation. The guidelines for determining significance are organized into eight categories: road segments, intersections, two-lane highways, ramps, congestion management plan, hazards due to an existing transportation design feature, hazards to pedestrians or bicyclists, and public transportation.

Land Development Projects

Land Development projects are projects that may result in an increase in the density or intensity or use on a parcel or parcels of land. These projects include, but are not limited to subdivisions, use permits, rezones and general plan amendments. Land development projects, typically, require discretionary approval. Due to the increased intensity of uses, land development projects generate additional traffic onto the County's road network and can contribute towards traffic congestion. A traffic impact study is often required to fully assess potential traffic impacts that may result from implementation of the proposed project.

Road Improvement Projects

Road improvement projects are projects that can affect transportation system operations; including level of service and other performance measures. Projects may consist of increasing road capacity or improving the traffic operations on the County's road network. This section refers to stand alone road improvement projects that are not improvements associated with a proposed development. These projects are typically publicly initiated. Road improvement projects do not generate additional trips but, in some cases, may cause a redistribution of trips on the County's road network. Road improvement projects are typically one or more of the following; road widening, construction of new road, intersection improvements and operational improvements/road maintenance. Additional guidance on how to evaluate Publicly Initiated Road Improvement Projects is included as Attachment B of the Report Format and Content Requirements.

4.1 Road Segments

Pursuant to the County's General Plan Public Facilities Element (PFE Pg. XII-4-18), new development must provide improvements or other measures to mitigate traffic impacts to avoid:

(a) Reduction in Level of Service (LOS) below "C" for on-site Circulation Element roads;

(b) Reduction in LOS below "D" for off-site and on-site abutting Circulation Element roads; and

(c) "Significantly impacting congestion" on roads that operate at LOS "E" or "F". If impacts cannot be mitigated, the project cannot be approved unless a statement of overriding findings is made pursuant to the State CEQA Guidelines. The PFE, however, does not include specific guidelines for determining the amount of additional traffic that would "significantly impact congestion" on such roads.

The County has created the following guidelines to evaluate likely motor vehicle traffic impacts of a proposed project for road segments and intersections serving that project site, for purposes of determining whether the development would "significantly impact congestion" on the referenced LOS E and F roads. The guidelines are summarized in Table 1. The levels in Table 1 are based upon average operating conditions on County roadways. It should be noted that these levels only establish general guidelines, and that the specific project location must be taken into account in conducting an analysis of traffic impact from new development.

On-site Circulation Element Roads

PFE, Transportation, Policy 1.1 states that "new development shall provide needed roadway expansion and improvements on-site to meet demand created by the development, and to maintain a Level of Service C on Circulation Element Roads during peak traffic hours". Pursuant to this policy, a significant traffic impact would result if:

- ***The additional or redistributed ADT generated by the proposed land development project will cause on-site Circulation Element Roads to operate below LOS C during peak traffic hours except within the Otay Ranch and Harmony Grove Village plans as specified in the PFE, Implementation Measure 1.1.2.***

Off-site Circulation Element Roads

PFE, Transportation, Policy 1.1 also addresses offsite Circulation Element roads. It states, "new development shall provide off-site improvements designed to contribute to the overall achievement of a Level of Service D on Circulation Element Roads". Implementation Measure 1.1.3 addresses projects that would significantly impact

congestion on roads at LOS E or F. It states that new development that would significantly impact congestion on roads operating at LOS E or F, either currently or as a result of the project, will be denied unless improvements are scheduled to attain a LOS to D or better or appropriate mitigation is provided. The following significance guidelines define a method for evaluating whether or not increased traffic volumes generated or redistributed from a proposed project will "significantly impact congestion" on County roads, operating at LOS E or F, either currently or as a result of the project.

Traffic volume increases from public or private projects that result in one or more of the following criteria will have a significant traffic volume or level of service traffic impact on a road segment:

- ***The additional or redistributed ADT generated by the proposed project will significantly increase congestion on a Circulation Element Road or State Highway currently operating at LOS E or LOS F, or will cause a Circulation Element Road or State Highway to operate at a LOS E or LOS F as a result of the proposed project as identified in Table 1, or***

- ***The additional or redistributed ADT generated by the proposed project will cause a residential street to exceed its design capacity.***

Table 1
Measures of Significant Project Impacts to Congestion on Circulation Element Road Segments: Allowable Increases on Congested Road Segments

Level of service	Two-lane road	Four-lane road	Six-lane road
LOS E	200 ADT	400 ADT	600 ADT
LOS F	100 ADT	200 ADT	300 ADT

Notes:
1. **By adding proposed project trips to all other trips from a list of projects, this same table must be used to determine if total cumulative impacts are significant. If cumulative impacts are found to be significant, each project that contributes additional trips must mitigate a share of the cumulative impacts.**
2. **The County may also determine impacts have occurred on roads even when a project's traffic or cumulative impacts do not trigger an unacceptable level of service, when such traffic uses a significant amount of remaining road capacity.**

LOS E

The first significance criterion listed in Table 1 addresses roadways presently operating at LOS E. Based on these criteria, an impact from new development on an LOS E road would be reached when the increase in average daily trips (ADT) on a two-lane road exceeds 200 ADT. Using SANDAG's "Brief Guide for Vehicular Traffic Generation Rates for the San Diego Region" for most discretionary projects this would generate less than 25 peak hour trips. On average, during peak hour conditions, this would be only one additional car every 2.4 minutes.

Therefore, the addition of 200 ADT, in most cases, would result in changes to traffic flow that would not be noticeable to the average driver and therefore would not constitute a significant impact on the roadway. Significance criteria were also established for 4-lane and 6-lane roads operating at LOS E and are based upon the above 24 hour ADT significance criterion established for two-lane roads. The two-lane road criterion was doubled to determine impacts to four-lane roads and tripled to determine impacts to six-lane roads. This was considered to be conservative since the 24 hour per lane road capacity for a 4-lane road is more than double that of a two-lane road and the per lane capacity of a six-lane road is more than triple that of the two-lane road. For LOS E roads, the additional significance criteria are 400 ADT for a 4-lane road and 600 ADT for a 6-lane road.

Similar to the criteria for two-lane roads, 400 ADT for a 4-lane road and 600 ADT for a 6-lane road criteria would generate less than 25 per lane peak hour trips for most discretionary projects. On average, during peak hour conditions, this would be only one additional car per lane every 2.4 minutes. The addition of 200 ADT per lane (400 ADT for a 4 lane road or 600 ADT for a 6 lane road), in most cases, would result in changes to traffic flow that would not be noticeable to the average driver and therefore would not constitute a significant impact on the roadway. Road capacities based upon level of service for County roads can be found in the County's Public Road Standards, available online at http://www.sdcounty.ca.gov/dpw/land/rtelocs.html.

LOS F

The second significance criteria listed in Table 1 addresses roadways presently operating at LOS F. Under LOS F congested conditions, small changes and disruptions to the traffic flow on County Circulation Element Roads can have a greater effect on traffic operations when compared to other LOS conditions. In order to better account for potential effects of increased traffic on LOS F roads more stringent significance criteria was established when compared to that for LOS E. Based on this guidance, an impact from new development on an LOS F road would be reached when the increase in average daily trips (ADT) on a two-lane road exceeds 100. Again, using SANDAG's "Brief Guide for Vehicular Traffic Generation Rates for the San Diego Region" for most discretionary projects this would generate less than 12.5 peak hour trips. On average, during peak hour conditions, this would be only one additional car every 4.8 minutes.

The addition of 100 ADT, in most cases, would not be noticeable to the average driver and therefore would not constitute a significant impact on the roadway. The same approach used to determine significance criteria for 4-lane and 6-lane roads operating at LOS E was used to determine appropriate significance criteria for four-lane and six-lane roads operating at LOS F. Based on this approach, the significance criteria for a four-lane road (200 ADT) and for a six-lane road (300 ADT) would generate less than 12.5 per lane peak hour trips for most discretionary projects. On average, during peak hour conditions, this would be only one additional car per lane every 4.8 minutes. The addition of 100 per lane ADT (200 ADT for a 4-lane road and 300 ADT for a 6-lane road) would, in most cases, not be noticeable to the average driver and therefore would not constitute a significant impact on the roadway.

In summary, under extremely congested LOS F conditions, small changes and disruptions to the traffic flow can significantly affect traffic operations and additional project traffic can increase the likelihood or frequency of these events. Therefore, the LOS F ADT significance criteria was set at 100 ADT (50% of the LOS E criterion) to provide a higher level of assurance that the traffic allowed under the criterion would not significantly impact traffic operation on the road segment.

Non-Circulation Element Residential Streets

Levels of service are not applied to residential streets since their primary purpose is to serve abutting lots and not to carry through traffic, however, for projects that will substantially increase traffic volumes on residential streets, a comparison of the traffic volumes on the residential streets with the recommended design capacity must be provided. Recommended design capacities for residential non-Circulation Element streets are provided in the San Diego County Public and Private Road Standards. Traffic volume that exceeds the design capacity on residential streets may impact residences and should be analyzed on a case-by-case basis.

4.2 Intersections

This section provides guidance for evaluating adverse environmental effects a project may have on signalized and unsignalized intersections. Table 2 summarizes significant project impacts for signalized and unsignalized intersections.

Table 2
Measures of Significant Project Impacts to Congestion on Intersections: Allowable Increases on Congested Intersections

Level of Service	Signalized	Unsignalized
LOS E	Delay of 2 seconds or less	20 or less peak hour trips on a critical movement
LOS F	Either a Delay of 1 second, or 5 peak hour trips or less on a critical movement	5 or less peak hour trips on a critical movement

Notes:
1. A critical movement is an intersection movement (right turn, left turn, through-movement) that experiences excessive queues, which typically operate at LOS F. Also if a project adds significant volume to a minor roadway approach, a gap study should be provided that details the headways between vehicles on the major roadway.
2. By adding proposed project trips to all other trips from a list of projects, these same tables are used to determine if total cumulative impacts are significant. If cumulative impacts are found to be significant, each project is responsible for mitigating its share of the cumulative impact.
3. The County may also determine impacts have occurred on roads even when a project's direct or cumulative impacts do not trigger an unacceptable level of service, when such traffic uses a significant amount of remaining road capacity.
4. For determining significance at signalized intersections with LOS F conditions, the analysis must evaluate both the delay <u>and</u> the number of trips on a critical movement, exceedance of either criteria result in a significant impact.

4.2.1 Signalized

Traffic volume increases from public or private projects that result in one or more of the following criteria will have a significant traffic volume or level of service traffic impact on a signalized intersection:

- ***The additional or redistributed ADT generated by the proposed project will significantly increase congestion on a signalized intersection currently operating at LOS E or LOS F, or will cause a signalized intersection to operate at a LOS E or LOS F as identified in Table 2.***

- ***Based upon an evaluation of existing accident rates, the signal priority list, intersection geometrics, proximity of adjacent driveways, sight distance or other factors, the project would significantly impact the operations of the intersection.***

LOS E

The significance criterion for signalized intersections identified in Table 2 allows an increase in the overall delay at an intersection operating at LOS E of two seconds. This is consistent with the capacity limit contained in the SANDAG's CMP and guidelines established by the City of San Diego. A delay of two seconds is a small fraction of the typical cycle length for a signalized intersection that ranges between 60 and 120 seconds. The likelihood of increased queues forming due to the additional two seconds of delay is low. Therefore, an increased wait time of two seconds, on average, would result in changes to traffic flow that would not be noticeable to the average driver. Therefore the significance guideline for intersections operating at LOS E is 2 seconds.

LOS F

The primary significance criterion for signalized intersections operating at LOS F conditions was based upon increased delay at the intersection. Under LOS F congested conditions, small changes and disruptions to the traffic flow to signalized intersections can have a greater effect on overall intersection operations when compared to other LOS conditions. In order to better account for potential effects of increased traffic at signalized intersections operating at LOS F, a more stringent guideline was established when compared to signalized intersection operating at LOS E. A significance guideline of an increased delay of 1 second was established for signalized intersections operating at LOS F. An increase in the overall delay at an intersection of one second, on average, would result in changes to traffic flow that would not be noticeable to the average driver. Therefore the significance guideline for intersections operating at LOS F is 1 second.

Signalized intersections operating at LOS F also have the potential for substantial queuing at specific turning movements that may detrimentally effect overall intersection and/or road segment operations. Thus, an increase of peak hour trips to a critical move was also established as a secondary significance criterion for signalized intersections. A critical movement would be a movement or a lane at an intersection that is experiencing queuing or substantial delay and is affecting the overall operation of the

intersection. The increase in peak hour trips to a critical move is a measurement of how many cars can be added to an existing queue. The addition of more than five trips (peak hour) per critical movement will normally be considered a significant impact. This significance criterion was selected because the five or less additional trips spread out over the peak hour would not significantly increase the length of an existing queue and would not be noticeable to the average driver (5 peak hour trips equals one trip every 12 minutes or 720 seconds).

For LOS F intersections, the 5 peak hour trips to a critical movement would not be noticeable to the average driver since the one additional trip during the 12 minute interval on average would clear the traffic signal cycles well within the 12 minute period. It should also be noted that if the 5 additional peak hour trips arrived at the same time these trips would also clear the traffic cycle and existing queue lengths would be re-established.

4.2.2 Unsignalized

Traffic volume increases from public or private projects that result in one or more of the following criteria will have a significant impact to an unsignalized intersection as listed in Table 2 and described as text below:

- ***The additional or redistributed ADT generated by the proposed project will add 21 or more peak hour trips to a critical movement of an unsignalized intersection, and cause an unsignalized intersection to operate below LOS D, or***

- ***The additional or redistributed ADT generated by the proposed project will add 21 or more peak hour trips to a critical movement of an unsignalized intersection currently operating at LOS E, or***

- ***The additional or redistributed ADT generated by the proposed project will add 6 or more peak hour trips to a critical movement of an unsignalized intersection, and cause the unsignalized intersection to operate at LOS F, or***

- ***The additional or redistributed ADT generated by the proposed project will add 6 or more peak hour trips to a critical movement of an unsignalized intersection currently operating at LOS F, or***

- ***Based upon an evaluation of existing accident rates, the signal priority list, intersection geometrics, proximity of adjacent driveways, sight distance or other factors, the project would significantly impact the operations of the intersection.***

The operating parameters and conditions for unsignalized intersections differ dramatically from those of signalized intersections. Very small volume increases on one leg or turn and/or through movement of an unsignalized intersection can substantially affect the calculated delay for the entire intersection. As noted in Table 2 on page 15, significance criteria for unsignalized intersections are based upon a minimum number of trips added to a critical movement at an unsignalized intersection.

LOS E

The significance guidelines for unsignalized intersections identify a minimum number of trips added to a critical movement at an unsignalized intersection. Since the operations of unsignalized intersections under congested conditions are heavily influenced by traffic volume increases on critical moves, the significance guidelines for unsignalized intersections were based upon the number of trips added to a critical movement. This guideline directly relates to the number of vehicles that can be added to an existing queue that forms at the intersection. A significance criteria of (21) twenty-one or more trips (peak hour) per critical movement was used for LOS E conditions. Although delays drivers experience under LOS E condition may be noticeable, they are not yet considered unacceptable. Twenty trips spread out over the peak hour would not likely cause the intersection delay or existing queue lengths to become unacceptable. The twenty trips (peak hour) would not be noticeable to the average driver.

The operations of unsignalized intersections under congested conditions are heavily influenced by traffic volume increases on critical moves. Therefore, the significance guidelines for unsignalized intersections are based upon the number of peak hour trips added to a critical movement at that intersection. This guideline examines the number of vehicles that may be added to an existing queue that forms at the intersection by the additional traffic generated by a project. In LOS E situations, the delays that drivers experience are noticeable, but are not considered excessive. A peak hour increase of twenty trips to the critical movement of an unsignalized intersection would be, on average, one additional car every 3.0 minutes or 180 seconds. Assuming the average wait time for a vehicle in the critical movement queue is less than 3.0 minutes, which is typical for LOS E condition, this would not be noticeable to the average driver and would not be considered a significant impact.

LOS F

For LOS F conditions, a significance level of 6 or more trips (peak hour) per critical movement was used. Five trips or less spread out over the peak hour would not significantly increase the length of an existing queue and would not be noticeable to the average driver. For example, 5 trips spread out over an hour would be one car every 12 minutes. This typically exceeds the average wait time in the queue and would not be noticeable to the average driver.

4.3 Two-Lane Highways

This section provides level of service impact guidelines for State highways and County arterials operating as two-lane highways.

Several designated County Circulation Element Roads are State highways that are managed and maintained by Caltrans. These highways include State Route 67, State Route 76, State Route 78, State Route 79 and State Route 94 and within the unincorporated area of the County most of these routes operate as two-lane highways. Caltrans has prepared a "Guide for the Preparation of Traffic Impact Studies" that should also be referenced when evaluating traffic impacts to the above Circulation Element Roads that are under the jurisdiction of Caltrans. Also, Caltrans District 11 local office should be consulted early to adequately scope the traffic study and ensure potential local district issues in the traffic impact study are addressed. While the "Guide for the Preparation of Traffic Impact Studies" provides guidance for scoping a traffic study to assess impacts on Caltrans facilities, it does not provide specific guidelines for determining when a significant traffic impact occurs; hence, the development of the following significance guidelines for two-lane highways.

In addition to the State Routes identified above, several County Circulation Element Roads, although designated as arterials, operate as two-lane highways. These include roadways that have passing opportunities for 40% or more along the length of the roadway and/or have few/limited access points and intersections along the length of the roadway. Examples would include sections of Old Highway 80, Old Highway 395 and Del Dios Highway. The Highway Capacity Manual (HCM) includes analysis criteria for assessment of LOS for two-lane highways. Section 2.2 of the County of San Diego's "Transportation and Traffic Report Format and Content Requirements" states that "The Director of Public Works may, based upon a review of the operational characteristics of the roadway, designate that a HCM analysis be used to determine the LOS for a two-lane County arterial in lieu of the LOS table provided in the County of San Diego Public Road Standards." Level of service tables for two-lane highways have also been established by the County of Riverside and the County of Sacramento.

4.3.1 Signalized Intersection Spacing Over One Mile

This section provides LOS impact significance levels for State highways and County arterials operating as two-lane highways with signalized intersection spacing over one mile. County arterials were addressed in section 4.1 and Table 1, however, those that operate as two-lane highways would have higher project contribution amounts and different LOS E and LOS F levels and are treated in this section.

Table 3
Measures of Significant Project Impacts to Congestion: Allowable Increases on Two-lane Highways with Signalized Intersection Spacing Over One Mile

Level of Service	LOS Criteria	Impact Significance Level
LOS E	> 16,200 ADT	>325 ADT
LOS F	> 22,900 ADT	>225 ADT

Note:
Where detailed data are available, the Director of Public Works may also accept a detailed level of service analysis based upon the two-lane highway analysis procedures provided in the Chapter 20 Highway Capacity Manual.

Two-lane highways with intersection spacing over one mile have minimal side friction and conform to the HCM assumptions for two-lane highways. Level of service criteria for LOS E and LOS F are provided in Table 3 based upon criteria established with the Counties of Riverside and Sacramento and concurred upon by Caltrans-District 11. These criteria are appropriate for use for most projects with the potential to affect two-lane highways, as road conditions for two-lane highways in these Counties are similar to those in the County of San Diego. The ADT based guidelines should be the first applied method of analysis, however, County staff may allow the use of HCM Chapter 20 methodology (average travel speed and/or percent time spent following) to provide a more detailed evaluation and to determine the overall level of service in certain cases, with the approval of the Director of Public Works. Where impacts to State Highways are involved, consultation with Caltrans is recommended.

LOS E

Impact significance levels are provided in Table 3 for two-lane highways with signalized intersection spacing over one mile. The first impact significance level addresses impacts from new development (both direct and cumulative impacts) on an LOS E road. In this scenario a significant impact would be reached when the increase in average daily trips (ADT) on a two-lane road exceeds 325. For most discretionary projects, the 325 ADT level would generate less than 35 peak hour trips. On average, during peak hour conditions, this would be only one additional car every 1.7 minutes. The addition of 325 ADT would, in most cases, not be noticeable to the average driver on a two-lane highway which has higher speeds and reduced side friction compared to a typical arterial. The additional 325 ADT, therefore, would not constitute a significant impact on a two-lane highway operating at LOS E; however, the addition of more than 325 ADT would generally result in a significant impact.

LOS F

The second impact significance guideline concerns roadways presently operating at LOS F (for a 2-lane highway LOS F would not occur until ADT exceeds 22,900 trips per day. Under LOS F congested conditions, small changes and disruptions to the traffic flow on County Circulation Element Roads can have a greater affect on traffic operations when compared to other LOS conditions. In order to better account for potential effects of increased traffic on LOS F roads, a more stringent guideline was established when compared to that for LOS E. The guideline for determining significance from new development (both direct and cumulative impacts) on a LOS F

road would be reached when the increase in average daily trips (ADT) on a two-lane road exceeds 225. For most discretionary projects, the 225 ADT level would generate less than 25 peak hour trips. On average, during peak hour conditions, this would be only one additional car every 2.4 minutes. The addition of 225 ADT would, in most cases, not be noticeable to the average driver on a two-lane highway which has higher speeds and reduced side friction compared to a typical arterial. The addition 225 ADT or less would therefore not constitute a significant impact on a two-lane highway operating at LOS F. However, the addition of more than 225 ADT would be considered a significant impact.

4.3.2 Signalized Intersection Spacing Under One Mile

This section provides level of service impact guidelines for State highway segments and County arterials operating as two-lane highways with signalized intersection spacing under one mile. Typical examples of this type of roadway are those segments of two lane highways that traverse town centers. Similar to the experience of drivers in urban areas with closely spaced intersections, the functionality of two-lane highway conditions with signalized intersections spacing under one mile becomes constrained not due to the segment capacity but the intersection operations. Therefore the assessment of operations of intersections on two-lane highways shall be guided by a Level of Service standard. Level of Service for purposes of this significance guideline is based upon the overall intersection operations – similar to Urban Street analysis in Chapter 15 Highway Capacity Manual. For determining impact significance at the signalized intersection, Table 4 "Measures of Significant Project Impacts to Congestion on Intersections Allowable Increases on Congested Intersections" may be used as summarized below:

Table 4
Measures of Significant Project Impacts to Congestion: Allowable Increases on Two-lane Highways with Signalized Intersection Spacing Under One Mile

Level of Service	Signalized
LOS E	Delay of 2 seconds or less
LOS F	Delay of 1 second, or 5 peak hour trips or less on a critical movement

Notes:
1. A critical movement is an intersection movement (right turn, left turn, through-movement) that experiences excessive queues which typically operate at LOS F.
2. By adding proposed project trips to all other trips from a list of projects, these same tables are used to determine if total cumulative impacts are significant. If cumulative impacts are found to be significant, each project is responsible for mitigating its share of the cumulative impact.
3. The County may also determine impacts have occurred on roads even when a project's traffic or cumulative impacts do not trigger an unacceptable level of service, when such traffic uses a significant amount of remaining road capacity.

The second impact significance guideline (Table 4) concerns two-lane highways with signalized intersection spacing less than 1 mile. Two-lane highways with intersection spacing less than 1 mile operate similar to urban streets as identified in the HCM. Per the HCM, level Urban Streets have lower speeds with levels of service most

characterized by the operation of the intersections along the highway/street. For two-lane highways with intersection spacing less than 1 mile, the level of service will be determined to be that of the intersections along the highway. Impacts to the highway will be determined by evaluating the intersection impact criteria identified in Table 4.

Impacts related to operational features on two-lane highways will be evaluated on a case-by-case basis based upon traffic flow patterns, geometrics, available sight distance, accident histories, and other factors. Coordination with County staff and Caltrans is recommended regarding any additional operational analysis that may be necessary.

4.4 Ramps

Additional or redistributed ADT generated by the proposed project may significantly increase congestion at a freeway ramp. Caltrans' "Guide for the Preparation of Traffic Impact Studies" states that an operational analysis based upon Caltrans' Highway Design Manual should be used in the evaluation of ramps and that Caltrans' Ramp Metering Guidelines should be used in the preparation of the operational analysis. However, specific criteria for the determination of an impact at a ramp are not provided in the above documents.

The CMP includes guidelines for the determination of traffic impacts at a ramp. These guidelines are summarized in Table 5. Table 5 may be used as a guide in determining significant increases in congestion on ramps and for identifying conflicts with the congestion management program. Other factors that may be considered include ramp metering, location (rural vs. urban), ramp design, and the proximity of adjacent intersections. Coordination with Caltrans and the local jurisdiction should be conducted to determine appropriate impact criteria for the specific ramps being assessed.

4.5 Congestion Management Program

Projects that generate over 2,400 ADT or 200 peak hour trips, must comply with the traffic study requirements of SANDAG's Congestion Management Program. Trip distributions for these projects must also use the current regional computer traffic model. Projects that must prepare a CMP analysis should also follow the CMP traffic impact analysis guidelines. These guidelines are summarized in Table 5.

Table 5
Measure of Significant Project Traffic Impacts for
Circulation Element Roads, Signalized Intersections, and Ramps

Level of Service With Project	Allowable Change Due to Project Impact						
	Freeways		Roadway Segments*		Intersections**	Ramps**	Ramps with >15 min. delay
	V/C	Speed (mph)	V/C	Speed (mph)	Delay (sec.)	Delay (min.)	Delay (min.)
E & F	0.01	1	0.02	1	2	-	2

* For County arterials, which are not identified in SANDAG's Regional Transportation Plan and Congestion Management Program as regionally significant arterials, significance may be measured based upon an increase in average daily trips. The allowable change in ADT due to project impacts in this instance would be identified in Table 1.

** Signalized Intersections

*** See the Report Format and Content Requirements for guidance on ramp metering analysis.

KEY

V/C = Volume to Capacity ratio
Speed = Speed measured in miles per hour
Delay = Average stopped delay per vehicle measured in seconds, or minutes
LOS = Level of Service
ADT = Average Daily Trips

4.6 Hazards Due to an Existing Transportation Design Feature

Many roadways and intersections in the County were designed and constructed prior to the adoption of current road design standards. The design of the roadways and intersections that were able to handle lower traffic volumes, may pose an increased risk if traffic volumes substantially increase along the road segment or at the intersection as a result of the proposed project. Increased traffic generated or redistributed by a proposed project may cause a significant traffic operational impact to an existing transportation design feature. Therefore, it is necessary to evaluate potential hazards to an existing transportation design feature.

The determination of significant hazards to an existing transportation design feature shall be on a case-by-case basis, considering the following factors:

- Design features/physical configurations of access roads may adversely affect the safe movement of all users along the roadway.
- The percentage or magnitude of increased traffic on the road due to the proposed project may affect the safety of the roadway.
- The physical conditions of the project site and surrounding area, such as curves, slopes, walls, landscaping or other barriers, may result in conflicts with other users or stationary objects.

- Conformance of existing and proposed roads to the requirements of the private or public road standards, as applicable.

4.7 Hazards to Pedestrians or Bicyclists

Many roadways and intersections in the County do not currently have pedestrian or bicycle facilities. The roadways and intersections designed prior to adoption of current road standards may have conditions that may pose an increased risk if traffic volumes, pedestrian volumes, or bicycle volumes substantially increase along the road segment or at the intersection, as a result of the proposed project. Increased traffic generated or redistributed by a proposed project may cause a significant traffic operational impact to pedestrians or bicyclists. Therefore, it is necessary to evaluate potential hazards to pedestrians or bicyclists.

The determination of significant hazards to pedestrians or bicyclists shall be on a case-by-case basis, considering the following factors:

- Design features/physical configurations on a road segment or at an intersection that may adversely affect the visibility of pedestrians or bicyclists to drivers entering and exiting the site, and the visibility of cars to pedestrians and bicyclists.

- The amount of pedestrian activity at the project access points that may adversely affect pedestrian safety.

- The preclusion or substantial hindrance of the provision of a planned bike lane or pedestrian facility on a roadway adjacent to the project site.

- The percentage or magnitude of increased traffic on the road due to the proposed project that may adversely affect pedestrian and bicycle safety.

- The physical conditions of the project site and surrounding area, such as curves, slopes, walls, landscaping or other barriers that may result in vehicle/pedestrian, vehicle/bicycle conflicts.

- Conformance of existing and proposed roads to the requirements of the private or public road standards, as applicable.

- The potential for a substantial increase in pedestrian or bicycle activity without the presence of adequate facilities.

4.8 Alternative Transportation

Alternative transportation (cycling, walking, and transit use) is addressed in the County's General Plan Public Facilities Element (PFE). The County's stated objective for alternative transportation is addressed by the PFE, Objective 4. Objective 4 asks for a "Reduction in the demand on the road system through increased public use of alternate forms of transportation and other means." Pursuant to Objective 4, Policies 4.1 – 4.4 establish a means for the County to meet the objective. As such, if a proposed project is not in conformance with the applicable alternative transportation policies in the PFE, a significant conflict with the County's alternative transportation policies may occur.

5.0 STANDARD MITIGATION AND PROJECT DESIGN CONSIDERATIONS

If a proposed project's traffic results in a significant traffic impact (per the criteria specified above), mitigation for the traffic impact must be proposed. If mitigation is infeasible or impractical, the technical, economic, and physical reasons for the infeasibility must be detailed to support a statement of overriding considerations under CEQA. Potential mitigation measures can include traffic signal improvements, physical road improvements, street re-striping and parking prohibitions, fair share contributions toward identified, funded and scheduled projects, and transportation demand management programs.

A variety of possible generalized mitigation measures are provided below. It should be recognized that a variety of improvements may be required to mitigate direct impacts depending on the extent of the project's impact. For example, a project may identify a direct impact to a road segment; however the entire segment may not need to be improved. Depending on the situation, frontage improvements or turn pockets may adequately mitigate the impact. However, analysis must be provided to demonstrate that with implementation of the proposed mitigation measure, conditions would either not change or not become worse with the implementation of the project. For example, travel time or queue lengths may need to be quantified to justify the adequacy of a proposed mitigation measure as being proportional to the project's significant impact. It should be noted that fair share contributions are not adequate to fully mitigate a direct impact because the construction of actual improvements must be in place prior to the project impact occurring. Consult with County staff, as necessary, for further information. Conceptual striping plans to ensure feasibility of the proposed mitigation measures may be required.

5.1 Traffic Signal Improvements

- New Signal (provided that it meets traffic signal warrants)
- Signal modifications including timing, coordination, phasing improvements, etc.

5.2 Physical Road Improvements

- Turn Restrictions
- New Roadway
- Curve Realignment
- Roadway widening to add lanes or shoulders
- Provision of pathway or sidewalk
- Extension of truncated street
- Shoulder provisions for bicycle-lanes
- Redesign of freeway on- and off-ramps
- Median construction/modification to restrict access
- Flaring of intersections to add turn lanes
- Provision of passing lanes or turnouts
- Acceleration and deceleration lanes

- Removal of obstructions (vegetation, rock outcroppings, utilities, etc.)
- Roundabouts

5.3 Street Re-striping and Parking Restrictions

- Re-striping to add lanes with or without parking removal or restrictions
- Protected left-turn pockets, or free right turn lanes
- Parking restrictions, daily or during peak hours
- Bicycle lanes and or sharrows

5.4 Fair Share Contributions

- Payment of the County's Traffic Impact Fee for mitigation of cumulative impacts within the unincorporated County (Refer to Section 2.2 of these Guidelines for discussion of how the TIF mitigates cumulative impacts)
- Contribution of funds to approved projects identified in the County's Capital Improvement Program Plan
- Agreement between an applicant and a City or non-County agency to contribute a fair share payment towards the construction of a specific traffic improvement found adequate by the County for impacts outside of the jurisdiction of the unincorporated County (Refer to Section 5.0 of the Report Format and Content Requirements for additional discussion of impacts outside of the County's jurisdiction).

5.5 Transportation Demand Management*

- Flexible or staggered work hours
- Properly pricing parking
- Transit incentives and improvements including subsidized transit passes, bus turnouts, or bus shelters/benches
- Carpool, vanpool programs and participation in a computerized matching system
- Incentives to promote bicycle and walk trip modal split

* Implementation of these measures will require monitoring on an on-going basis.

5.6 Traffic Safety/Hazards to Pedestrians or Bicyclists

If traffic safety or pedestrian/bicycle safety impacts are present, then conditions are placed on a project prior to approval to address those concerns. Often, compliance with County of San Diego Public or Private Road Standards will provide sufficient mitigation for an identified impact. However, site specific mitigation measures, such as the improvement of sight distance along the frontage of a project, will be imposed as a condition of approval. Conceptual striping plans to ensure feasibility of the proposed mitigation measures may be required.

Projects that would generate a high demand for pedestrian traffic such as schools, shopping centers, and large office parks may be required to provide pedestrian and bicycle routes to the facilities to accommodate the pedestrian demand.

Bicycle lanes and routes designated on the County's General Plan/Circulation Element must be specified and existing facilities identified. Provisions to provide/accommodate the ultimate right-of-way needed to construct designated bike lanes must be incorporated into the proposed project. Construction of bicycle lanes may be based upon the demand and connections to existing facilities in the area.

5.7 Alternative Transportation

Alternative transportation is addressed in the County's General Plan Public Facilities Element (PFE), Policies 4.1 – 4.4. The PFE identifies several viable ways of promoting alternative transportation and to reduce demand on the road system. However, many of these solutions are programmatic in nature and cannot typically be implemented by an individual project. Program level solutions include establishing incentive programs for employers to encourage their employees to use alternative transportation and coordinating the planning and development of transit centers with other jurisdictions and public transportation agencies. Project level solutions include identifying the need for transit improvements for large scale projects and conditioning new development on the dedication and construction of bikeways as indicated in the Circulation Element's Bicycle Network.

5.8 Project Phasing

If a proposed project will be developed in phases and the county agrees that phased implementation of mitigation measures is a feasible option, the traffic analysis will need to identify impacts and associated mitigation according to each phase of development. The implementation of mitigation measures would be timed with each project phase to address the impacts that each phase of development would create. The traffic analysis will need to evaluate each phase separately in order to justify the mitigation that will be implemented at each phase. For example, if a project proposes to construct in phases (stages) or with interim uses before full build out, then the traffic study shall detail the projects traffic impacts and needed mitigation for each phase (stage) as it comes online and identify appropriate mitigation at each stage. This level of analysis will allow County staff to draft road and frontage improvement conditions in conjunction with actual project improvements via phasing or stages.

6.0 REFERENCES

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Institute of Transportation Engineers (ITE). Traffic Access and Impact Studies for Site Development (A Recommended Practice), 1991.

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San Diego Traffic Engineers' Council (SANTEC) and the Institute of Transportation Engineers (ITE). SANTEC/ITE Guidelines for Traffic Impact Studies (TIS) in the San Diego Region (draft), March 2, 1999.

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[Attachment A]

LEVELS OF SERVICE SUMMARY

Background

Level of Service

Level of service (LOS) is a quality of service measure that describes motor vehicle operational conditions on a transportation facility, such as a roadway or intersection. This service measure is a general overall measurement of several conditions such as speed and travel time, freedom to maneuver, traffic interruption, comfort and convenience.

Six LOS categories are defined for each type of facility. Letters designate each level, from A to F, with LOS A representing the best operating conditions and LOS F the worst. Each LOS represents a range of operating conditions and the driver's perception of those conditions. Safety is not included in the measures that establish service levels.

Each transportation facility type has one or more of service measure that serves as the primary determinant of level of service for that facility type. This LOS-determining parameter is called the service measure or sometimes the Measure of Effectiveness (MOE). The MOE will vary from facility type to facility type. For instance, for intersections the MOE will be delay; for a road segment it may be the 24-hour volume, the volume to capacity ratio, speed or travel time along the facility.

Capacity

The capacity of a facility is the maximum number of persons or vehicles that can be expected to traverse a point or uniform section of road within a specified time frame under prevailing roadway, traffic and control conditions. Theoretically, this is the point in which the flow rate (vehicles/hour) on the facility is the highest. At lower traffic volumes, the peak hour operations will be low density with higher speeds. At higher traffic volumes, the peak hour operations will be of higher density, but at lower speeds. The flow rate can be measured in 15 minute, hourly or 24-hour intervals. Some general relationships/estimates have been established/assumed for converting from 24-hour average daily traffic measurements to peak hour measurements and vice-versa.

The highest volume attainable under LOS E defines the capacity of the arterial or collector. Operating conditions at capacity are unstable and difficult to predict. If this capacity is exceeded, operating conditions on the roadway change dramatically. Average travel speeds are extremely low, stop-and-go traffic occurs and excessive queuing may be present.

The capacity is related to level of service. The LOS E/LOS F criteria are identified as the capacity of the facility (roadway or intersection). Volumes to capacity ratios are calculated based upon these capacity (LOS E/LOS F) criteria.

Roadways

Roadways are classified based upon the roadway's function, control conditions and type roadside development, including its specific use, density and intensity. Road classifications for roadways located within the unincorporated area are described in the County of San Diego's General Plan Circulation Element and in the County of San Diego Public Road Standards. The road classifications provided therein may be grouped into four categories, arterials, collectors, residential roads and industrial/commercial roads. A description of each category and the method of determining LOS for each are discussed below:

Freeways

A freeway is defined as a divided highway with full control of access and two or more lanes for the exclusive use of traffic in each direction. Freeways provide uninterrupted flow. There are no signalized or stop-controlled intersections and direct access to and from adjacent property is not permitted. Access to the freeway is limited to ramp locations. Raised barriers, at-grade medians or continuous raised medians separate opposing directions of travel.

Operating conditions on a freeway primarily result from interactions among vehicles and drivers. Although speed is a major concern of drivers as related to service quality, freedom to maneuver within the traffic stream and proximity to other vehicles are equally noticeable concerns. These qualities are related to the density of the traffic stream. Unlike speed, density increases up to capacity.

The LOS criteria for freeways are defined to represent reasonable ranges in the three critical flow variables, speed, density and flow rate. They are as follows:

LOS A describes free flow operations. Free flow speeds prevail. Vehicles are almost completely unimpeded in their ability to maneuver in the traffic stream. The effects of incidents or point breakdowns are easily absorbed at this level.

LOS B represents reasonably free flow and free flow speeds are maintained. The ability to maneuver in the traffic stream is only slightly restricted, and the general level of physical and psychological comfort provided to drivers is still high. The effects of minor incidents and point breakdowns are still easily absorbed.

LOS C provides for flow with speeds at or near the free flow speed. Freedom to maneuver is noticeably restricted, and lane changes require more care and vigilance on the part of the driver. Minor incidents may still be absorbed, but the local deterioration in service will be substantial. Queues may be expected to form behind any significant blockage.

LOS D is the level at which speeds begin to decline slightly with increasing flows and density begins to increase somewhat more quickly. Freedom to maneuver is more

noticeably limited, and the driver experiences reduced physical and psychological comfort levels. Even minor incidents can be expected to create queuing, because the traffic stream has little space to absorb disruptions.

LOS E describes operations at capacity, the highest density value. Operations at this level are volatile, because there are virtually no usable gaps in the traffic stream. Vehicles are closely spaced, leaving little room to maneuver. Speeds still exceed 49 mph. At capacity the traffic stream has no ability to dissipate even the most minor disruption, and any incident can be expected to produce a serious breakdown with excessive queuing. Maneuverability in the traffic stream is extremely limits and the level of physical and psychological comfort afforded the driver is poor.

LOS F describes breakdowns in vehicular flow. Such conditions generally exist within queues forming behind breakdown points. These may occur for a number of reasons, such as traffic incidents, merges, and lane drops. The breakdowns occur when the ratio of existing demand to actual capacity (or of forecasted demand to estimated capacity) exceed 1.00.

The level of service for freeway segments is estimated by calculating the demand to capacity or volume to capacity ratio. It is based upon the peak 15 min traffic flow as expressed in vehicles per hour. Adjustments to account for the types of vehicle in the traffic flow are provided in the HCM. Adjustments to the capacity to account for geometrics, grade and environmental factors, such as adverse weather conditions, are also provided.

Two-Lane Highways

A two-lane highway is a two-lane undivided roadway with one lane for each direction of travel. Traffic signals are spaced over two miles apart along the highway. Passing a slower vehicle requires the use of the opposing lane as sight distance and gaps are available. As volumes and geometric restrictions increase the ability to pass decreases and platoons form. Motorists in platoons are subject to delay because they are unable to pass.

Many two-lane highways are located within the County of San Diego unincorporated area. These are primarily State highways such as SR 67, SR 76, SR 78 and SR 94. For State highways Caltrans design standards, which utilize a peak hour HCM analysis, is used. This methodology estimates traffic operations based upon terrain, geometric design and traffic conditions. Base conditions for terrain and geometric designs have been identified which are applicable for most route segments. Procedures to account for segments, which differ from the base conditions, are also provided. The methodology is typically applied to highway segments at least 2 miles long.

In the Highway Capacity Manual (HCM Ch.20) two-lane highways are categorized into two classes for analysis:

Class I – These are two-lane highways on which motorists expect to travel at relatively high speeds. These include major intercity routes connecting major traffic generators, daily commuters, or primarily links in the state or national highway network. They serve long distance trips or serve as connecting links between facilities that serve long trips.

Class II - These are two-lane highways on which motorists do not necessarily expect to travel at high speeds. They function as access routes to Class I facilities, serve as scenic/recreational routes or pass through rugged terrain. They often serve short trips, the beginning or ending portion of a longer trip or trips for which sightseeing/recreation plays a significant role.

The primary measures of level of service for Class I two-lane highways are percent time spent following (PTSF) and average travel speed (ATS). For Class II two-lane highways level of service is based only upon time spent following. Levels of service criteria of two-lane highways are defined based upon the peak period (15 min flow periods) and are intended for application to segments of significant length. They are defined as follows:

LOS A describes the highest quality of service, when motorists are able to travel at their desired speed. Without strict enforcement average speeds of 55 mph would be expected on Class I two-lane highways and platoons of three or more vehicles are rare. On Class II two-lane highways speeds may fall below 55 mph but motorists will not be delayed in platoons more than 40 % of their travel time.

LOS B characterizes traffic flow with speeds of 50 mph (slightly higher on level terrain), on Class I two-lane highways, and drivers are delayed in platoons up to 50 percent of the time. On Class II two-lane highways speeds may fall below 50 mph but motorists will not be delayed in platoons more than 55 % of their travel time.

LOS C describes further increases in traffic flow, resulting in noticeable increases in platoon formation, platoon size and frequency of passing impediments. The average speed still exceeds 45 mph on level terrain Class I two-lane highways. Although traffic flow is stable it is susceptible to congestion due to turning vehicles and slow-moving traffic. Percent time following may reach 65 %. On Class II two-lane highways speeds may fall below 45 mph but motorists will not be delayed in platoons more than 70 % of their travel time.

LOS D describes unstable flow. The two opposing traffic streams begin to operate separately and passing becomes extremely difficult. Turning vehicles and roadside distractions may cause disruptions to the traffic stream. The average speed of 40 mph can still be maintained on Class I two-lane highways, under base conditions, but mean platoon sizes of 5 to 10 vehicles are common. On Class II two-lane highways speeds

may fall below 40 mph but motorists will not be delayed in platoons more than 85 % of their travel time.

LOS E traffic flow conditions have a percent time following greater than 80% for Class I two-lane highways and greater than 85% on Class II two-lane highways. Speeds may drop below 40 mph on Class I highways and may be as low as 25 mph on sustained grades. Passing is virtually impossible. Platooning becomes intense as slower vehicles or other interruptions are encountered.

LOS F represents heavily congested flow and speeds are highly variable.

The highest volume attainable under LOS E defines the capacity of the two-lane highway. Generally, this is 3,200 peak hour trips in both directions. Operating conditions at capacity are unstable and difficult to predict.

Arterials and Collectors

Arterials are roadways that primarily serve longer through trips. Providing access to abutting commercial and residential land uses is also an important function of arterials. Traffic signals are, typically, located at many intersections with public roads and major access points to adjacent land uses. Collectors are roadways provide both land access and traffic circulation. Their access function is more important than that of arterials and unlike arterials their operations is not always dominated by traffic signals.

On arterials, which are predominately uninterrupted on segments between major intersections, the Highway Capacity Manual 2000 evaluation method for Urban Streets may be used. Average travel speed on the road way is used as the determinant of operating LOS. The average travel speed is related to the traffic volume on the road. Exhibit 10-7 in the HCM 2000 provides a service volume Table that contains approximate hourly volumes and corresponding level of service estimates for different roadway types. Typically, the capacity of arterials, which have few interruptions between major intersections, is limited by the capacity of the intersections along the roadway.

The Highway Capacity Manual 2000 includes a method for evaluating level of service for urban streets. Urban streets are identified in the HCM 2000 as arterials with traffic signals spaced two miles or less apart. The HCM methodology primarily assesses the travel speed and level of service of the urban street based upon the operations and delay that occurs at the intersection along the urban street. A roadway's access function, however, is not assessed/included in this methodology. The level of access provided by a roadway should also be considered in evaluating its performance.

Most County arterials and collectors have frequent interruptions between major intersections. Capacity and level of service for arterials and collectors in the County of San Diego are usually determined based 24-hour average daily traffic according to Table 2 in the County of San Diego Standards for Public Roads. The 24-hour average daily traffic volumes are identified for each LOS category. They were based upon

historical operations of County roads, comparisons with standards from other jurisdictions, and comparison with Highway Capacity Manual tables/guidelines. They account for both mobility and access along the roadway. They are derived based upon average conditions and should be revised to account for special circumstances, such as reduced lane width, extreme grades and the provision of access improvements including turn lanes and acceleration/deceleration lanes. It should also be noted that, although not proportional to peak hour traffic volumes, the 24 hour ADT is often related to the peak hour volume. When the 24-hour volume is significantly increased, the peak hour volume is also typically significantly increased.

The following statements characterize LOS along arterials and collectors:

LOS A describes primarily free flow operations. Vehicles are completely unimpeded in their ability to maneuver into and within the traffic stream. Average travel speeds are approximately 90 % of the free flow speed. The free flow speed is the theoretical speed of traffic when no vehicles are present.

LOS B describes reasonably unimpeded traffic operations. The ability to maneuver into and within the traffic stream is only slightly restricted. Average travel speeds are approximately 70 % of the free flow speed.

LOS C describes stable operations. The ability to maneuver and change lanes in mid-block locations may be more restricted than at LOS B. Average travel speeds are approximately 50 % of the free flow speed.

LOS D borders on a range in which small increases in flow may cause substantial increases in delay and decreases in travel speed. The ability to maneuver into and within the traffic stream is limited with slight and infrequent delay. Average travel speeds are approximately 40 % of the free flow speed.

LOS E is characterized by significant delays. The ability to maneuver into and within the traffic stream is extremely limited. Average travel speeds are approximately 33 % or less than the free flow speed.

LOS F is characterized by high delays. Average travel speeds are extremely low with stop-and-go traffic or excessive queuing.

The highest volume attainable under LOS E defines the capacity of the arterial or collector. Operating conditions at capacity are unstable and difficult to predict. If this capacity is exceeded, operating conditions on the roadway change dramatically. Average travel speeds are extremely low, stop-and-go traffic occurs and excessive queuing may be present. Generally, the highest LOS E capacity for County arterials and collectors is identified in Table 1 of the County of San Diego Public Road Standards.

Residential Roads

Residential roads are provided to collect traffic from adjacent residential areas and lots. Their primary purpose is to provide a limited residential area access to and from the regional road network. Such roads are not envisioned to provide through traffic generated in one community and destined for another. They are designed to accommodate local traffic.

Levels of service are not applied to residential roads. Due to the abutting and surrounding residential land uses, reduced traffic volumes are desired in order to minimize real and or perceived impacts to the adjacent uses. Residential roads are targeted to serve between 1,500 and 4,500 average daily trips (ADT). The County also has some special residential roads, which include frontage, alley and hillside residential. Due to the unique nature of these roads traffic may be less than 1500 ADT. Traffic volumes in excess of these targets may be accepted if other means of access to an area is precluded or found to be impractical due to such factors as environmental impacts, engineering, and no other legal access for an area.

Industrial/Commercial Roads

Industrial/Commercial roads provide access to abutting lots zoned for industrial and commercial uses. Their primary purpose is to provide a limited industrial/commercial area access to and from the regional road network. Such roads are not envisioned to provide through traffic generating in one community and destined for another. They are designed to accommodate a high percentage of trucks.

Levels of service are not applied to industrial/commercial roads. Due to the abutting and surrounding industrial/commercial land uses, reduced traffic volumes are desired in order to minimize real and or perceived impacts to the adjacent uses. Two-lane industrial/commercial roads are targeted to serve 4,500 ADT. Four lane industrial/commercial roads are recommended for traffic volumes greater than 4,500 ADT. Traffic volumes in excess of 4,500 ADT may be accepted on two lane industrial/commercial roads if adequate abutting lot access improvements are provided or other means of access to an area is precluded or found to be impractical due to such factors as environmental impacts, engineering, and no legal access.

Intersections

Levels of service for intersection are estimated based upon the procedures provided in the HCM 2000. The HCM includes procedures for the analysis of signalized and unsignalized intersections. Capacity and traffic analysis focus on the peak hour of traffic volume, because it represents the most critical period for operations and has the highest capacity requirements. Since the flow rate can fluctuate substantially within the peak hour, assessments based upon the peak 15-minute flow rate are used. A discussion of these procedures is provided below.

Signalized Intersections

The analysis of signalized intersection is based upon a wide variety of prevailing traffic, roadway and signalization conditions. Traffic conditions include volumes on each approach, distribution of vehicles by movement (left, through, right), the vehicle type distribution, pedestrian cross flows and other factors. Roadway conditions include basic geometrics of the intersection, such as the number and width of through lanes, the number and width of turn lanes, grades and adjacent parking lanes. Signalization conditions include signal phasing, timing, type of control and other factors.

The maximum capacity at signalized intersections is defined for each lane group. The lane group capacity is the maximum hourly rate of vehicles that can reasonably pass through the intersection. The flow rate is generally measured for a 15 min period and is stated in vehicles per hour (veh/hr). Capacity is evaluated in terms of the ratio of demand flow rate to maximum capacity (v/c ratio).

In the HCM methodology the capacity, LOS, and other performance measures are estimated for lane groups and intersection approaches. The overall LOS is also estimated for the intersection as a whole. The methodology, however, does not take into account the potential impact of downstream congestion of the intersection. Nor does the methodology detect and adjust for the impacts of left turn pocket overflows on through traffic and intersection operation.

Levels of service for signalized intersections are defined in terms of control delay, which is a measure of driver discomfort, frustration, fuel consumption and increased travel time. The delay experienced by a motorist is made up of a number of factors that relate to control, geometrics, traffic and incidents. Although the control delay is estimated based upon a number of variables, for a given set of signal conditions the v/c ratio is a lead parameter of control delay. LOS for signalized intersections are estimated based upon a calculation of the v/c ratio, which is used with other factors to estimate the control delay.

Levels of service for signalized intersections are defined to represent reasonable ranges in control delay as follows:

LOS A describes operations with low control delay, up to 10 sec/vehicle. Many vehicles do not stop at all.

LOS B describes operations with control delay greater than 10 and up to 20 sec/vehicle. More vehicles stop than at LOS A, causing higher levels of control delay.

LOS C describes operations with control delay greater than 20 and up to 30 sec/vehicle. Individual cycle failures may begin at this level. Cycle failures occur when a given green phase does not serve all queued vehicles and overflows occur. The number of vehicles stopping is noticeable, though many still pass through the intersection without stopping.

LOS D describes operations with control delay greater than 35 and up to 55 sec/vehicle. At LOS D the influence of congestion becomes more noticeable. Many vehicles stop and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.

LOS E describes operations with control delay greater than 55 and up to 80 sec/vehicle. Individual cycle failures are frequent.

LOS F describes operations with control delay greater than 80 sec/vehicle. This level is considered unacceptable to most drivers. It often occurs when the arrival flow rates exceed the capacity of lane groups. Many individual cycles fail.

Unsignalized Intersections

Two-Way Stop-Controlled Intersections (TWSC)
Levels of service procedures are provided in the HCM for two-way stop-controlled (TWSC) intersections. Level of service for TWSC intersections is determined by estimating the control delay for each minor movement. The delay is estimated by determining the amount of available acceptable gaps for a driver to maneuver from and to the minor street. LOS is not defined for the intersection as a whole.

The LOS criteria for TWSC intersections are somewhat different from that of signalized intersections primarily because of different driver perceptions. The expectation is that a signalized intersection is designed to carry higher traffic volumes and experience greater delay than unsignalized intersections. LOS F occurs when there are not enough gaps of sufficient size to allow the minor street demand to safely cross through traffic on the major street. This is typically evident by extremely long control delays experienced by minor-street traffic. Drivers on the minor street may also start accepting smaller than usual gaps. In such cases safety may be a problem and some disruption of the major street traffic may occur.

All-Way Stop-Controlled Intersections (AWSC)
Levels of service procedures are provided in the HCM for all-way stop-controlled (AWSC) intersections. Level of service for AWSC intersections is determined by estimating the control delay per vehicle for each lane and each approach. The LOS for each approach and for the intersection as a whole is then estimated by computing weighted averages of the delay.

The LOS criteria for TWSC intersections are similar to those of signalized intersections. The criteria for LOS for AWSC intersections, however, have different values than for signalized intersections. The expectation is that a signalized intersection is designed to carry higher traffic volumes and experience greater delay than unsignalized intersections. A higher level of control delay is acceptable at a signalized intersection for the same LOS.

Roundabouts

The HCM includes procedures to estimate the capacity of single-lane roundabouts. It, however, does not include procedures for estimating the LOS of a roundabout. The capacity analysis is based upon gap acceptance techniques. The procedures are not applicable to multilane roundabouts. More details regarding the use and experience of roundabouts in the United States are needed before an analysis procedure for multilane roundabouts will be provided in the HCM.

LEVEL OF SERVICE (LOS) DEFINITIONS (generally used by Caltrans)

The concept of Level of Service (LOS) is defined as a qualitative measure describing operational conditions within a traffic stream, and their perception by motorists and/or passengers. A Level of Service[s] definition generally describes these conditions in terms of such factors as speed, travel time, freedom to maneuver, comfort and convenience, and safety. Levels of Service definitions can generally be categorized as follows:

LOS	D/C*	Congestion/Delay	Traffic Description
		(Used for freeways, expressways and conventional highways[A])	
"A"	<0.41	None	Free flow.
"B"	0.42-0.62	None	Free to stable flow, light to moderate volumes.
"C"	0.63-0.79	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 conventional highways)	
"F"	>1.00	Considerable	Forced or breakdown. Delay measured in average flow, travel speed (MPH). Signalized segments experience delays >60.0 seconds/vehicle.
		(Used for freeways and expressways)	
"F0"	1.01-1.25	Considerable 0-1 hour delay	Forced flow, heavy congestion, long queues form behind breakdown points, stop and go.
"F1"	1.26-1.35	Severe 1-2 hour delay	Very heavy congestion, very long queues.
"F2"	1.36-1.45	Very severe 2-3 hour delay	Extremely heavy congestion, longer queues, more numerous breakdown points, longer stop periods.
"F3"	>1.46	Extremely severe 3+ hours of delay	Gridlock.

[s] Level of Service can generally be calculated using "Table 3.1. LOS Criteria for Basic Freeway Sections" from the latest Highway Capacity Manual. However, contact Caltrans for more specific information on determining existing "free-flow" freeway speeds.

* Demand/Capacity ratio used for forecasts (V/C ratio used for operational analysis, where V = volume)

[A] Arterial LOS is based upon average "free-flow" travel speeds, and should refer to definitions in Table 11.1 in the HCM.

[Attachment B]

DEFINITIONS OF KEY TERMS

Traffic Terms

AM or PM Peak Hours: Those hours of the day in which the bulk of commute trips occur and in which traffic impacts are likely to be the greatest.

Average Daily Traffic (ADT): The number of vehicles that use a roadway segment within a 24-hour period.

Capacity of a transportation facility: The maximum number of persons or vehicles that can be expected to traverse a point or uniform section of road within a specified time frame under prevailing roadway, traffic and control conditions. Theoretically, this is the point in which the flow rate (vehicles/hour) on the facility is the highest. The highest volume attainable under LOS E has been designated as the capacity of the arterial or collector.

Critical Movement: Intersection movements (right-turn, left-turn, through-movement), that experience excessive queues, which typically operate at LOS F.

Level of Service (LOS): Corresponds to "excellent" through "failure" conditions in terms of traffic congestion, both for road segments and for intersections. It is used to provide an indication of the amount of delay a driver would experience along a road segment or the amount of wait time a driver would experience at an intersection. *LOS* is rated on a scale of A through F, with A representing excellent, free flow conditions, and F representing failures of road segments or intersections.

Volume to Capacity (V/C) Ratio: The ratio of the actual traffic volume of a road segment or intersection to the design capacity of the road segment or intersection. It is used to provide an estimate of the level of service of the road segment or intersection.

Parking Terms

The following list highlights several key parking terms that are defined in the Zoning Ordinance:

Parking Area: Open area other than a street or alley that contains motor vehicle parking spaces.

Parking Space: An unobstructed space or area other than a street or alley, not less than the minimum size specified for the type of use provided with adequate ingress and egress, and which is permanently reserved and maintained for the parking of motor vehicles.

Covered Parking: Covered or enclosed parking spaces located anywhere on a building site where a structure may be located.

Loading Space: An area, other than a street or alley on the same lot with a building or a group of buildings not less than 10-feet wide, 35-feet long, and 14-feet high which affords adequate ingress and egress for trucks from a public street or alley, and which is permanently reserved and maintained for the temporary parking of commercial vehicles while loading or unloading merchandise or materials. Loading and unloading shall not obstruct access to any parking space.

Off-Street Parking: A facility/area for vehicle parking located outside of a public street right-of-way.

Open Parking: Open parking spaces are spaces located outside the ultimate right-of-way of any street.

[Attachment C]

SUMMARY OF MODIFICATIONS AND REVISIONS

Guidelines for Determining Significance and Report Format and Content Requirements for Traffic and Transportation were originally approved on September 26, 2006. The following is a summary of revisions made since original document approval.

Second Modification, August 24, 2011

- Added clarifying language for cumulative impacts and use of TIF program as mitigation at shared jurisdictional facilities (segments and intersections).

First Modification, February 19, 2010

- Revised the reference to the CEQA Guidelines, Appendix G questions to reflect the updated questions that were changed as a result of SB 97 greenhouse gas emission related legislation
- Deleted discussions related to adequate parking capacity to reflect the deletion of this topic from the CEQA Guidelines, Appendix G
- Added discussion to Section 2.2 of the Guidelines regarding TIF as mitigation for cumulative impacts
- Updated Congestion Management Program information to reflect the latest 2008 update
- Added discussion to the mitigation section of the Report Format and Content Requirements to address mitigation of impacts outside of the County's jurisdiction
- Added Appendix C to the Report Format and Content Requirements to clarify the required scope of cumulative analysis and cumulative impact mitigation

Second Revision, June 30, 2009

- Removed reference to the public road standards in Attachment A of the Guideline.
- Updated language about the RTP to reflect the most recent update
- Added discussion to 3.0 Typical Adverse Effects to clarify that LOS thresholds are typically established as a baseline for determining significant impacts but that other factors may need to be considered including whether achieving the LOS standard is practical or infeasible.
- Updated the reference to the PFE Implementation measure 1.1.2 in the Guideline addressing the exceptions for Otay Ranch and Harmony Grove Village.
- Clarified significance criteria for on and off-site circulation element roads differentiating criteria for LOS E vs. LOS F roads (pgs 13 - 15)
- Better defined critical movement (Table 2, Table 4 and definitions) and added guidance in the report formats specifying when it is adequate to evaluate an

entire intersection movement versus evaluate each critical movement at the intersection (Section 3.5 Report Formats)

- Moved Table 2 to beginning of section 4.2 to clarify that the table is used to assess both signalized and unsignalized intersections.
- Added an additional guideline for signalized intersections to address cases where a significant impact would occur to the intersection due to traffic operations, geometrics, sight distance, etc.
- Corrected criteria in Section 4.2.2 Unsignalized Intersections to remove inconsistency between the guideline and the text (changed guideline language to reference impacts result from 21 or more and 6 or more peak hour trips versus 20 or more and 5 or more)
- Clarified the note in Table 3 in the text that follows to indicate when a deviation in the methodology for analysis of 2 lane highways would be considered.
- Provided an example of a State highway or county arterial that operates as a 2 lane highway with signalized intersection spacing under one mile as being typical of a roadway that traverses a town center.
- Revised language referencing cumulative impacts in Tables 2 and 4.
- Added language to the significance guideline on parking capacity to reference that a special parking study may identify inadequate parking capacity versus only referencing Zoning Ordinance since we often cannot rely solely on Zoning Ordinance standards for parking
- Added language to Section 5.0 Standard Mitigation to clarify that when a significant impact is identified the required mitigation may include a variety of measures and need not necessarily include improvement of an entire road segment to get the operations back to an acceptable LOS. Clarifies that mitigation must result in conditions either better or the same as what they were prior to the project impacts.
- Added section 5.9 Project Phasing to Section 5.0 Mitigation to clarify that mitigation measures can be tied to the phased project impacts if a project proposes to implement in phases. Also added reference to Project Phasing in the Report Formats to clarify that the analysis must be presented according to phases to allow identification of adequate mitigation according to phase.
- Added language about existing conditions and the need for updated traffic counts to Section 2.0 of the Report Formats.
- Clarified Table 1 of the Report Formats. Added a column to address when an issue specific TIS is required and added a row to address when a TIS may be needed for projects that generate from 200 to 500 ADT or 20 to 50 Peak Hour Trips.
- Clarified that peak hour trips are to include the 2-way peak hour total.
- Defined the scope of a full TIS (direct and cumulative analysis) as requiring analysis of all roads and intersections that receive 25 or more peak hour trips. The 25 peak hour trip guideline is now consistent for both direct and cumulative analysis.
- Clarified that the CMP analysis requires analysis of roads and intersections that receive 50 or more peak hour trips and that the county analysis requirements (roads and intersections that receive 25 or more peak hour trips) would typically cover all CMP road and intersection analysis.

- Added section 2.1.4 Projects Proposing to Amend the County's General Plan to the Report Formats to reference the Public Facilities Element Requirement that a build out analysis be prepared for certain projects and to state that depending on the result of the build out analysis, amendments to the circulation element may need to be included as part of the project to make the project description consistent with the General Plan. Also clarified that impact conclusions and mitigation measures need not be identified in the conclusions of planning analyses as these are not CEQA requirements.
- Added language to Section 3.5 Intersections of Report Formats to indicate which intersections should be studied and to recognize that additional side/minor street intersections may need to be evaluated in traffic operation issues are identified.
- Added Attachment B to the Report Format and Content Requirements to provide guidance on evaluating Road Improvem0ent projects
- Revised the general format of Traffic Impact Studies in Section 3.1 Outline. Made a clear separation in the organization to distinguish between required CEQA analysis and mitigation measures and analysis required for planning purposes such as CMP and General Plan Consistency/Build Out analysis
- Clarified in section 3.2 Project Trip Generation that for projects proposing a GPA and/or Rezone, the analysis should be based on the highest density or intensity use that would be allowed with the GPA or Rezone
- Various changes and reorganization to the content of the Report Formats to add additional detail as to what is expected in each section of the study

First Revision, December 5, 2007

- Added criteria for two-lane Highways (Section 4.3)
- Various editorial revisions

Excerpts from City of San Diego's Significance Determination Thresholds

California Environmental Quality Act

Significance Determination Thresholds

Development Services Department

JANUARY 2011*

***Note:** Development Services Department staff periodically revises sections of the thresholds in response to CEQA case law, and changes in federal, state, and local regulations. Staff also periodically provides updated information and clarification and direction for environmental analysts.

City of San Diego
Development Services

Land Development
Review Division
(619) 446-5460

REVISION HISTORY	
Date	**Comments**
January 1991	Prior revision
January 1994	Prior revision
May 1999	Prior revision
April 2001	Prior revision
~~February~~ ~~April~~ 2004 ~~June,~~July 2004	Updated
August 2006	Strikeout/Underline removed; minor edits
January 2007	New Traffic Threshold implemented; minor edits
January 2011	Minor edits to Health and Safety, Paleontology and Public Services and Utilities (Solid Waste Generation/Disposal) sections

O. TRANSPORTATION / CIRCULATION and PARKING

Note: This section is to be applied for projects deemed complete on or after January 1, 2007. For projects deemed complete prior to January 1, 2007, the following Section O.1. on Page 73 is to be applied.

Project-related traffic impacts are one of the most commonly identified environmental impacts under the CEQA. Traffic operations and safety impacts are addressed in this section. Other environmental impacts associated with project- related traffic and transportation infrastructure improvements (e.g., air quality, noise, biology) are addressed in the applicable sections of this manual which pertain to such issues.

Direct traffic impacts are those projected to occur at the time a proposed development becomes operational, including other developments not presently operational but which are anticipated to be operational at that time (near term).

Cumulative traffic impacts are those projected to occur at some point after a proposed development becomes operational, such as during subsequent phases of a project and when additional proposed developments in the area become operational (short-term cumulative) or when the affected community plan area reaches full planned build out (long-term cumulative).

It is possible that a project's near term (direct) impacts may be reduced in the long term, as future projects develop and provide additional roadway improvements (for instance, through implementation of traffic phasing plans). In such a case, the project may have direct impacts but not contribute considerably to a cumulative impact.

For intersections and roadway segments affected by a project, level of service (LOS) D or better is considered acceptable under both direct and cumulative conditions.

INITIAL STUDY CHECKLIST QUESTIONS

The following are taken from the City's Initial Study Checklist. They provide guidance on determining the potential significance of impacts to transportation, circulation systems, and parking:

Would the proposal result in:

1. Traffic generation in excess of specific community plan allocation?
2. An increase in projected traffic which is substantial (see table on following page) in relation to the existing traffic load and capacity of the street system?
3. Addition of a substantial amount of traffic to a congested freeway segment, interchange, or ramp as shown in the table on the next page?
4. An increased demand for off-site parking?
5. Effects on existing parking?
6. Substantial impact upon existing or planned transportation systems?
7. Substantial alterations to present circulation movements including effects on existing public access to beaches, parks, or other open space areas?

8. Increase in traffic hazards for motor vehicles, bicyclists or pedestrians due to a proposed, non-standard design feature (e.g., poor sight distance or driveway onto an access-restricted roadway)?
9. A conflict with adopted policies, plans or programs supporting alternative transportation models (e.g., bus turnouts, bicycle racks)?

SIGNIFICANCE THRESHOLDS

The following thresholds have been established to determine significant traffic impacts:

1. If any intersection, roadway segment, or freeway segment affected by a project would operate at LOS E or F under either direct or cumulative conditions, the impact would be significant if the project exceeds the thresholds shown in the table below.

2. At any ramp meter location with delays above 15 minutes, the impact would be significant if the project exceeds the thresholds shown in the table below.

3. If a project would add a substantial amount of traffic to a congested freeway segment, interchange, or ramp, the impact may be significant.

4. Addition of a substantial amount of traffic to a congested freeway segment, interchange, or ramp as shown in the table below?

5. If a project would increase traffic hazards to motor vehicles, bicyclists or pedestrians due to proposed non-standard design features (e.g., poor sight distance, proposed driveway onto an access-restricted roadway), the impact would be significant. Note: analysts should refer readers to a discussion of this issue in the Health and Safety section of the environmental document.

5. If a project would result in the construction of a roadway which is inconsistent with the General Plan and/or a community plan, the impact would be significant if the proposed roadway would not properly align with other existing or planned roadways.

6. If a project would result in a substantial restriction in access to publicly or privately owned land, the impact would be significant.

Level of Service with Project *	**Allowable Change Due To Project Impact ****					
	Freeways		**Roadway Segments**		**Intersections**	**Ramp Metering**
	V/C	*Speed (mph)*	*V/C*	*Speed (mph)*	*Delay (sec.)*	*Delay (min.)*
E (or ramp meter delays above 15 min.)	0.010	1.0	0.02	1.0	2.0	2.0
F (or ramp meter delays above 15 min.)	0.005	0.5	0.01	0.5	1.0	1.0

Note 1: The allowable increase in delay at a ramp meter with more than 15 minutes delay and freeway LOS E is 2 minutes.

Note 2: The allowable increase in delay at a ramp meter with more than 15 minutes delay and freeway LOS F is 1 minute.

* All LOS measurements are based upon Highway Capacity Manual procedures for peak-hour conditions. However, V/C ratios for roadway segments are estimated on an ADT/24-hour traffic volume basis (using Table 2 of the City's Traffic Impact Study Manual. The acceptable LOS for freeways, roadways, and intersections is generally "D" ("C" for undeveloped locations). For metered freeway ramps, LOS does not apply. However, ramp meter delays above 15 minutes are considered excessive.

** If a proposed project's traffic causes the values shown in the table to be exceeded, the impacts are determined to be significant. The project applicant shall then identify feasible improvements (within the Traffic Impact Study) that will restore/and maintain the traffic facility at an acceptable LOS. If the LOS with the proposed project becomes unacceptable (see above * note), or if the project adds a significant amount of peak-hour trips to cause any traffic queues to exceed on- or off-ramp storage capacities, the project applicant shall be responsible for mitigating the project's direct significant and/or cumulatively considerable traffic impacts.

KEY:

Delay	=	Average control delay per vehicle measured in seconds for intersections, or minutes for ramp meters
LOS	=	Level of Service
Speed	=	Speed measured in miles per hour
V/C	=	Volume to Capacity ratio

PARKING

Parking requirements vary by land use and location and are dictated by the City of San Diego Municipal Code and adopted by the City Council policies.

SIGNIFICANCE THRESHOLDS

Non-compliance with the City's parking ordinance does not necessarily constitute a significant environmental impact. However, it can lead to a decrease in the availability of existing public parking in the vicinity of the project. Generally, if a project is deficient by more than ten percent of the required amount of parking and at least one of the following criteria applies, then a significant impact may result:

1. The project's parking shortfall or displacement of existing parking would substantially affect the availability of parking in an adjacent residential area, including the availability of public parking.

2. The parking deficiency would severely impede the accessibility of a public facility, such as a park or beach.

O.1. TRAFFIC/PARKING

Note: This section is to be applied to projects deemed complete prior to January 1, 2007.

Traffic:

Direct traffic impacts are those projected to occur at the time a proposed development becomes operational. The calculations include other operating projects and those not yet operational but which are anticipated to be operational when the proposed project goes into effect.

Cumulative traffic impacts are those projected to occur at some point after a proposed development becomes operational, such as during subsequent phases of a project or when additional proposed developments in the area become operational (short-term cumulative) or when affected community plan areas reach full planned buildout (long-term cumulative).

For intersections and roadway segments affected by a project, level of service (LOS) D or better is considered acceptable under both direct and cumulative conditions. However, for undeveloped locations, the goal is to achieve LOS C.

Significance Thresholds

1. If any intersection or roadway segment affected by a project would operate at LOS E or F under either direct or cumulative conditions, the impact would be significant if the project exceeds the following allowable increases in delay or intersection capacity utilization for affected intersections or volume-to-capacity ratio or speed for affected roadway segments:

Allowable Increase Due to Project Impacts*

Level of Service with Project	Intersections		Roadway Segments	
	Delay (sec.)	*ICU (V/C)*	*V/C*	*Speed (mph)*
E**	2	0.02	0.02	1
F**	2	0.02	0.02	1

Notes:

* If a proposed project's traffic impacts exceed the values shown in the table, then the impacts are deemed "significant." The project applicant shall identify "feasible mitigations" to achieve LOS D or better.

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

Key:

Delay = Average stopped delay per vehicle measured in seconds
ICU = Intersection Capacity Utilization
V/C = Volume-to-Capacity Ration (capacity at level of service E should be used, as specified in Table 1 of the City of San Diego Traffic Impact Study Manual)
Speed = Arterial speed measured in miles per hour

Excerpts from Caltrans Guidelines for the Preparation of Traffic Impact Studies

GUIDE FOR THE PREPARATION

OF

TRAFFIC IMPACT STUDIES

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

December 2002

PREFACE

The California Department of Transportation (Caltrans) has developed this "Guide for the Preparation of Traffic Impact Studies" in response to a survey of cities and counties in California. The purpose of that survey was to improve the Caltrans local development review process (also known as the Intergovernmental Review/California Environmental Quality Act or IGR/CEQA process). The survey indicated that approximately 30 percent of the respondents were not aware of what Caltrans required in a traffic impact study (TIS).

In the early 1990s, the Caltrans District 6 office located in Fresno identified a need to provide better quality and consistency in the analysis of traffic impacts generated by local development and land use change proposals that effect State highway facilities. At that time, District 6 brought together both public and private sector expertise to develop a traffic impact study guide. The District 6 guide has proven to be successful at promoting consistency and uniformity in the identification and analysis of traffic impacts generated by local development and land use changes.

The guide developed in Fresno was adapted for statewide use by a team of Headquarters and district staff. The guide will provide consistent guidance for Caltrans staff who review local development and land use change proposals as well as inform local agencies of the information needed for Caltrans to analyze the traffic impacts to State highway facilities. The guide will also benefit local agencies and the development community by providing more expeditious review of local development proposals.

Even though sound planning and engineering practices were used to adapt the Fresno TIS guide, it is anticipated that changes will occur over time as new technologies and more efficient practices become available. To facilitate these changes, Caltrans encourages all those who use this guide to contact their nearest district office (i.e., IGR/CEQA Coordinator) to coordinate any changes with the development team.

ACKNOWLEDGEMENTS

The District 6 traffic impact study guide provided the impetus and a starting point for developing the statewide guide. Special thanks is given to Marc Birnbaum for recognizing the need for a TIS guide and for his valued experience and vast knowledge of land use planning to significantly enhance the effort to adapt the District 6 guide for statewide use. Randy Treece from District 6 provided many hours of coordination, research and development of the original guide and should be commended for his diligent efforts. Sharri Bender Ehlert of District 6 provided much of the technical expertise in the adaptation of the District 6 guide and her efforts are greatly appreciated.

A special thanks is also given to all those Cities, Counties, Regional Agencies, Congestion Management Agencies, Consultants, and Caltrans Employees who reviewed the guide and provided input during the development of this Guide for the Preparation of Traffic Impact Studies.

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I. INTRODUCTION

Caltrans desires to provide a safe and efficient State transportation system for the citizens of California pursuant to various Sections of the California Streets and Highway Code. This is done in partnership with local and regional agencies through procedures established by the California Environmental Quality Act (CEQA) and other land use planning processes. The intent of this guide is to provide a starting point and a consistent basis in which Caltrans evaluates traffic impacts to State highway facilities. The applicability of this guide for local streets and roads (non-State highways) is at the discretion of the effected jurisdiction.

Caltrans reviews federal, State, and local agency development projects[1], and land use change proposals for their potential impact to State highway facilities. The primary objectives of this guide is to provide:

- guidance in determining if and when a traffic impact study (TIS) is needed,
- consistency and uniformity in the identification of traffic impacts generated by local land use proposals,
- consistency and equity in the identification of measures to mitigate the traffic impacts generated by land use proposals,
- lead agency[2] officials with the information necessary to make informed decisions regarding the existing and proposed transportation infrastructure (see Appendix A, Minimum Contents of a TIS)
- TIS requirements early in the planning phase of a project (i.e., initial study, notice of preparation, or earlier) to eliminate potential delays later,
- a quality TIS by agreeing to the assumptions, data requirements, study scenarios, and analysis methodologies prior to beginning the TIS, and
- early coordination during the planning phases of a project to reduce the time and cost of preparing a TIS.

II. WHEN A TRAFFIC IMPACT STUDY IS NEEDED

The level of service[3] (LOS) for operating State highway facilities is based upon measures of effectiveness (MOEs). These MOEs (see Appendix "C-2") describe the measures best suited for analyzing State highway facilities (i.e., freeway segments, signalized intersections, on- or off-ramps, etc.). Caltrans endeavors to maintain a target LOS at the transition between LOS "C" and LOS "D" (see Appendix "C-3") on State highway facilities, however, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS. If an existing State highway facility is operating at less than the appropriate target LOS, the existing MOE should be maintained.

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[1] "Project" refers to activities directly undertaken by government, financed by government, or requiring a permit or other approval from government as defined in Section 21065 of the Public Resources Code and Section 15378 of the California Code of Regulations.

[2] "Lead Agency" refers to the public agency that has the principal responsibility for carrying out or approving a project. Defined in Section 21165 of the Public Resources Code, the "California Environmental Quality Act, and Section 15367 of the California Code of Regulations.

[3] "Level of service" as defined in the latest edition of the Highway Capacity Manual, Transportation Research Board, National Research Council.

A. Trip Generation Thresholds

The following criterion is a starting point in determining when a TIS is needed. When a project:

1. Generates over 100 peak hour trips assigned to a State highway facility
2. Generates 50 to 100 peak hour trips assigned to a State highway facility – and, affected State highway facilities are experiencing noticeable delay; approaching unstable traffic flow conditions (LOS "C" or "D").
3. Generates 1 to 49 peak hour trips assigned to a State highway facility – the following are examples that may require a full TIS or some lesser analysis[4]:
   a. Affected State highway facilities experiencing significant delay; unstable or forced traffic flow conditions (LOS "E" or "F").
   b. The potential risk for a traffic incident is significantly increased (i.e., congestion related collisions, non-standard sight distance considerations, increase in traffic conflict points, etc.).
   c. Change in local circulation networks that impact a State highway facility (i.e., direct access to State highway facility, a non-standard highway geometric design, etc.).

Note: A traffic study may be as simple as providing a traffic count to as complex as a microscopic simulation. The appropriate level of study is determined by the particulars of a project, the prevailing highway conditions, and the forecasted traffic.

B. Exceptions

Exceptions require consultation between the lead agency, Caltrans, and those preparing the TIS. When a project's traffic impact to a State highway facility can clearly be anticipated without a study and all the parties involved (lead agency, developer, and the Caltrans district office) are able to negotiate appropriate mitigation, a TIS may not be necessary.

C. Updating An Existing Traffic Impact Study

A TIS requires updating when the amount or character of traffic is significantly different from an earlier study. Generally a TIS requires updating every two years. A TIS may require updating sooner in rapidly developing areas and not as often in slower developing areas. In these cases, consultation with Caltrans is strongly recommended.

III. SCOPE OF TRAFFIC IMPACT STUDY

Consultation between the lead agency, Caltrans, and those preparing the TIS is recommended before commencing work on the study to establish the appropriate scope. At a minimum, the TIS should include the following:

A. Boundaries of the Traffic Impact Study

All State highway facilities impacted in accordance with the criteria in Section II should be studied. Traffic impacts to local streets and roads can impact intersections with State highway facilities. In these cases, the TIS should include an analysis of adjacent local facilities, upstream and downstream, of the intersection (i.e., driveways, intersections, and interchanges) with the State highway.

[4] A "lesser analysis" may include obtaining traffic counts, preparing signal warrants, or a focused TIS, etc.

B. Traffic Analysis Scenarios

Caltrans is interested in the effects of general plan updates and amendments as well as the effects of specific project entitlements (i.e., site plans, conditional use permits, sub-divisions, rezoning, etc.) that have the potential to impact a State highway facility. The complexity or magnitude of the impacts of a project will normally dictate the scenarios necessary to analyze the project. Consultation between the lead agency, Caltrans, and those preparing the TIS is recommended to determine the appropriate scenarios for the analysis. The following scenarios should be addressed in the TIS when appropriate:

1. When only a general plan amendment or update is being sought, the following scenarios are required:
   a) Existing Conditions - Current year traffic volumes and peak hour LOS analysis of effected State highway facilities.
   b) Proposed Project Only with Select Zone[5] Analysis - Trip generation and assignment for build-out of general plan.
   c) General Plan Build-out Only - Trip assignment and peak hour LOS analysis. Include current land uses and other pending general plan amendments.
   d) General Plan Build-out Plus Proposed Project - Trip assignment and peak hour LOS analysis. Include proposed project and other pending general plan amendments.

2. When a general plan amendment is not proposed and a proposed project is seeking specific entitlements (i.e., site plans, conditional use permits, sub-division, rezoning, etc.), the following scenarios must be analyzed in the TIS:
   a) Existing Conditions - Current year traffic volumes and peak hour LOS analysis of effected State highway facilities.
   b) Proposed Project Only - Trip generation, distribution, and assignment in the year the project is anticipated to complete construction.
   c) Cumulative Conditions (Existing Conditions Plus Other Approved and Pending Projects Without Proposed Project) - Trip assignment and peak hour LOS analysis in the year the project is anticipated to complete construction.
   d) Cumulative Conditions Plus Proposed Project (Existing Conditions Plus Other Approved and Pending Projects Plus Proposed Project) - Trip assignment and peak hour LOS analysis in the year the project is anticipated to complete construction.
   e) Cumulative Conditions Plus Proposed Phases (Interim Years) - Trip assignment and peak hour LOS analysis in the years the project phases are anticipated to complete construction.
3. In cases where the circulation element of the general plan is not consistent with the land use element or the general plan is outdated and not representative of current or future forecasted conditions, all scenarios from Sections III. B. 1. and 2. should be utilized with the exception of duplicating of item 2.a.

[5] "Select zone" analysis represents a project only traffic model run, where the project's trips are distributed and assigned along a loaded highway network. This procedure isolates the specific impact on the State highway network.

IV. TRAFFIC DATA

Prior to any fieldwork, consultation between the lead agency, Caltrans, and those preparing the TIS is recommended to reach consensus on the data and assumptions necessary for the study. The following elements are a starting point in that consideration.

A. Trip Generation

The latest edition of the Institute of Transportation Engineers' (ITE) TRIP GENERATION report should be used for trip generation forecasts. Local trip generation rates are also acceptable if appropriate validation is provided to support them.

1. Trip Generation Rates – When the land use has a limited number of studies to support the trip generation rates or when the Coefficient of Determination (R^2) is below 0.75, consultation between the lead agency, Caltrans and those preparing the TIS is recommended.
2. Pass-by Trips[6] – Pass-by trips are only considered for retail oriented development. Reductions greater than 15% requires consultation and acceptance by Caltrans. The justification for exceeding a 15% reduction should be discussed in the TIS.
3. Captured Trips[7] – Captured trip reductions greater than 5% requires consultation and acceptance by Caltrans. The justification for exceeding a 5% reduction should be discussed in the TIS.
4. Transportation Demand Management (TDM) – Consultation between the lead agency and Caltrans is essential before applying trip reduction for TDM strategies.

NOTE: Reasonable reductions to trip generation rates are considered when adjacent State highway volumes are sufficient (at least 5000 ADT) to support reductions for the land use.

B. Traffic Counts

Prior to field traffic counts, consultation between the lead agency, Caltrans and those preparing the TIS is recommended to determine the level of detail (e.g., location, signal timing, travel speeds, turning movements, etc.) required at each traffic count site. All State highway facilities within the boundaries of the TIS should be considered. Common rules for counting vehicular traffic include but are not limited to:

1. Vehicle counts should be conducted on Tuesdays, Wednesdays, or Thursdays during weeks not containing a holiday and conducted in favorable weather conditions.
2. Vehicle counts should be conducted during the appropriate peak hours (see peak hour discussion below).
3. Seasonal and weekend variations in traffic should also be considered where appropriate (i.e., recreational routes, tourist attractions, harvest season, etc.).

C. Peak Hours

To eliminate unnecessary analysis, consultation between the lead agency, Caltrans and those preparing the TIS is recommended during the early planning stages of a project. In general, the TIS should include a morning (a.m.) and an evening (p.m.) peak hour analyses. Other peak hours (e.g., 11:30 a.m. to 1:30 p.m., weekend, holidays, etc.) may also be required to determine the significance of the traffic impacts generated by a project.

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[6] "Pass-by" trips are made as intermediate stops between an origin and a primary trip destination (i.e., home to work, home to shopping, etc.).

[7] "Captured Trips" are trips that do not enter or leave the driveways of a project's boundary within a mixed-use development.

D. Travel Forecasting (Transportation Modeling)

The local or regional traffic model should reflect the most current land use and planned improvements (i.e., where programming or funding is secured). When a general plan build-out model is not available, the closest forecast model year to build-out should be used. If a traffic model is not available, historical growth rates and current trends can be used to project future traffic volumes. The TIS should clearly describe any changes made in the model to accommodate the analysis of a proposed project.

V. TRAFFIC IMPACT ANALYSIS METHODOLOGIES

Typically, the traffic analysis methodologies for the facility types indicated below are used by Caltrans and will be accepted without prior consultation. When a State highway has saturated flows, the use of a micro-simulation model is encouraged for the analysis (please note however, the micro-simulation model must be calibrated and validated for reliable results). Other analysis methods may be accepted, however, consultation between the lead agency, Caltrans and those preparing the TIS is recommended to agree on the data necessary for the analysis.

A. Freeway Segments – Highway Capacity Manual (HCM)*, operational analysis
B. Weaving Areas – Caltrans Highway Design Manual (HDM)
C. Ramps and Ramp Junctions – HCM*, operational analysis or Caltrans HDM, Caltrans Ramp Metering Guidelines (most recent edition)
D. Multi-Lane Highways – HCM*, operational analysis
E. Two-lane Highways – HCM*, operational analysis
F. Signalized Intersections[8] – HCM*, Highway Capacity Software**, operational analysis, TRAFFIX™**, Synchro**, see footnote 8
G. Unsignalized Intersections – HCM*, operational analysis, Caltrans Traffic Manual for signal warrants if a signal is being considered
H. Transit – HCM*, operational analysis
I. Pedestrians – HCM*
J. Bicycles – HCM*
K. Caltrans Criteria/Warrants – Caltrans Traffic Manual (stop signs, traffic signals, freeway lighting, conventional highway lighting, school crossings)
L. Channelization – Caltrans guidelines for Reconstruction of Intersections, August 1985, Ichiro Fukutome

*The most current edition of the Highway Capacity Manual, Transportation Research Board, National Research Council, should be used.

**NOTE: Caltrans does not officially advocate the use of any special software. However, consistency with the HCM is advocated in most but not all cases. The Caltrans local development review units utilize the software mentioned above. If different software or analytical techniques are used for the TIS then consultation between the lead agency, Caltrans and those preparing the TIS is recommended. Results that are significantly different than those produced with the analytical techniques above should be challenged.

[8] The procedures in the Highway Capacity Manual "do not explicitly address operations of closely spaced signalized intersections. Under such conditions, several unique characteristics must be considered, including spill-back potential from the downstream intersection to the upstream intersection, effects of downstream queues on upstream saturation flow rate, and unusual platoon dispersion or compression between intersections. An example of such closely spaced operations is signalized ramp terminals at urban interchanges. Queue interactions between closely spaced intersections may seriously distort the procedures in" the HCM.

VI. MITIGATION MEASURES

The TIS should provide the nexus [Nollan v. California Coastal Commission, 1987, 483 U.S. 825 (108 S.Ct. 314)] between a project and the traffic impacts to State highway facilities. The TIS should also establish the rough proportionality [Dolan v. City of Tigard, 1994, 512 U.S. 374 (114 S. Ct. 2309)] between the mitigation measures and the traffic impacts. One method for establishing the rough proportionality or a project proponent's equitable responsibility for a project's impacts is provided in Appendix "B." Consultation between the lead agency, Caltrans and those preparing the TIS is recommended to reach consensus on the mitigation measures and who will be responsible.

Mitigation measures must be included in the traffic impact analysis. This determines if a project's impacts can be eliminated or reduced to a level of insignificance. Eliminating or reducing impacts to a level of insignificance is the standard pursuant to CEQA and the National Environmental Policy Act (NEPA). The lead agency is responsible for administering the CEQA review process and has the principal authority for approving a local development proposal or land use change. Caltrans, as a responsible agency, is responsible for reviewing the TIS for errors and omissions that pertain to State highway facilities. However, the authority vested in the lead agency under CEQA does not take precedence over other authorities in law.

If the mitigation measures require work in the State highway right-of-way an encroachment permit from Caltrans will be required. This work will also be subject to Caltrans standards and specifications. Consultation between the lead agency, Caltrans and those preparing the TIS early in the planning process is strongly recommended to expedite the review of local development proposals and to reduce conflicts and misunderstandings in both the local agency CEQA review process as well as the Caltrans encroachment permit process.

APPENDIX "A"

MINIMUM CONTENTS

OF A

TRAFFIC IMPACT STUDY

MINIMUM CONTENTS OF TRAFFIC IMPACT STUDY REPORT

I. EXECUTIVE SUMMARY

II. TABLE OF CONTENTS

A. List of Figures (Maps)
B. List of Tables

III. INTRODUCTION

A. Description of the proposed project
B. Location of project
C. Site plan including all access to State highways (site plan, map)
D. Circulation network including all access to State highways (vicinity map)
E. Land use and zoning
F. Phasing plan including proposed dates of project (phase) completion
G. Project sponsor and contact person(s)
H. References to other traffic impact studies

IV. TRAFFIC ANALYSIS

A. Clearly stated assumptions
B. Existing and projected traffic volumes (including turning movements), facility geometry (including storage lengths), and traffic controls (including signal phasing and multi-signal progression where appropriate) (figure)
C. Project trip generation including references (table)
D. Project generated trip distribution and assignment (figure)
E. LOS and warrant analyses - existing conditions, cumulative conditions, and full build of general plan conditions with and without project

V. CONCLUSIONS AND RECOMMENDATIONS

A. LOS and appropriate MOE quantities of impacted facilities with and without mitigation measures
B. Mitigation phasing plan including dates of proposed mitigation measures
C. Define responsibilities for implementing mitigation measures
D. Cost estimates for mitigation measures and financing plan

VI. APPENDICES

A. Description of traffic data and how data was collected
B. Description of methodologies and assumptions used in analyses
C. Worksheets used in analyses (i.e., signal warrant, LOS, traffic count information, etc.)

APPENDIX "B"

METHODOLOGY FOR

CALCULATING EQUITABLE

MITIGATION MEASURES

METHOD FOR CALCULATING EQUITABLE MITIGATION MEASURES

The methodology below is neither intended as, nor does it establish, a legal standard for determining equitable responsibility and cost of a project's traffic impact, the intent is to provide:

1. A starting point for early discussions to address traffic mitigation equitably.
2. A means for calculating the equitable share for mitigating traffic impacts.
3. A means for establishing rough proportionality [Dolan v. City of Tigard, 1994, 512 U.S. 374 (114 S. Ct. 2309)].

The formulas should be used when:

- A project has impacts that do not immediately warrant mitigation, but their cumulative effects are significant and will require mitigating in the future.
- A project has an immediate impact and the lead agency has assumed responsibility for addressing operational improvements

NOTE: This formula is not intended for circumstances where a project proponent will be receiving a substantial benefit from the identified mitigation measures. In these cases, (e.g., mid-block access and signalization to a shopping center) the project should take full responsibility to toward providing the necessary infrastructure.

EQUITABLE SHARE RESPONSIBILITY: **Equation C-1**

NOTE: $T_E < T_B$, see explanation for T_B below.

$$P = \frac{T}{T_B - T_E}$$

Where:

P = The equitable share for the proposed project's traffic impact.

T = The vehicle trips generated by the project during the peak hour of adjacent State highway facility in vehicles per hour, vph.

T_B = The forecasted traffic volume on an impacted State highway facility at the time of general plan build-out (e.g., 20 year model or the furthest future model date feasible), vph.

T_E = The traffic volume existing on the impacted State highway facility plus other approved projects that will generate traffic that has yet to be constructed/opened, vph.

EQUITABLE COST: **Equation C-2**

$$C = P\ (C_T)$$

Where:

C = The equitable cost of traffic mitigation for the proposed project, ($). (Rounded to nearest one thousand dollars)

P = The equitable share for the project being considered.

C_T = The total cost estimate for improvements necessary to mitigate the forecasted traffic demand on the impacted State highway facility in question at general plan build-out, ($).

NOTES

1. Once the equitable share responsibility and equitable cost has been established on a per trip basis, these values can be utilized for all projects on that State highway facility until the forecasted general plan build-out model is revised.
2. Truck traffic should be converted to passenger car equivalents before utilizing these equations (see the Highway Capacity Manual for converting to passenger car equivalents).

3. If the per trip cost is not used for all subsequent projects, then the equation below will be necessary to determine the costs for individual project impact and will require some additional accounting.

Equation C-2.A

$$C = P\,(C_T - C_C)$$

Where:

C = Same as equation C-2.

P = Same as equation C-2.

C_T = Same as equation C-2.

C_C = The combined dollar contributions paid and committed prior to current project's contribution. This is necessary to provide the appropriate cost proportionality. Example: For the first project to impact the State highway facility in question since the total cost (C_T) estimate for improvements necessary to mitigate the forecasted traffic demand, C_C would be equal to zero. For the second project however, C would equal $P_2(C_T - C_1)$ and for the third project to come along C would equal $P_3[C_T - (C_1 + C_2)]$ and so on until build-out or the general plan build-out was recalculated.

APPENDIX "C"

MEASURES OF EFFECTIVENESS

BY

FACILITY TYPE

MEASURES OF EFFECTIVENESS BY FACILITY TYPE

TYPE OF FACILITY	MEASURE OF EFFECTIVENESS (MOE)
Basic Freeway Segments	Density (pc/mi/ln)
Ramps	Density (pc/mi/ln)
Ramp Terminals	Delay (sec/veh)
Multi-Lane Highways	Density (pc/mi/ln)
Two-Lane Highways	Percent-Time-Following Average Travel Speed (mi/hr)
Signalized Intersections	Control Delay per Vehicle (sec/veh)
Unsignalized Intersections	Average Control Delay per Vehicle (sec/veh)
Urban Streets	Average Travel Speed (mi/hr)

Measures of effectiveness for level of service definitions located in the most recent version of the Highway Capacity Manual, Transportation Research Board, National Research Council.

Transition between LOS "C" and LOS "D" Criteria

(Reference Highway Capacity Manual)

BASIC FREEWAY SEGMENTS @ 65 mi/hr

LOS	Maximum Density (pc/mi/ln)	Minimum Speed (mph)	Maximum v/c	Maximum Service Flow Rate (pc/hr/ln)
A	11	65.0	0.30	710
B	18	65.0	0.50	1170
C	26	64.6	0.71	1680
D	35	59.7	0.89	2090
E	45	52.2	1.00	2350

SIGNALIZED INTERSECTIONS and RAMP TERMINALS

LOS	Control Delay per Vehicle (sec/veh)
A	≤ 10
B	> 10 - 20
C	> 20 - 35
D	> 35 - 55
E	> 55 - 80
F	> 80

MULTI-LANE HIGHWAYS @ 55 mi/hr

LOS	Maximum Density (pc/mi/ln)	Minimum Speed (mph)	Maximum v/c	Maximum Service Flow Rate (pc/hr/ln)
A	11	55.0	0.29	600
B	18	55.0	0.47	990
C	26	54.9	0.68	1430
D	35	52.9	0.88	1850
E	41	51.2	1.00	2100

▪▪▪▪▪ Dotted line represents the transition between LOS "C" and LOS "D"

TWO-LANE HIGHWAYS

LOS	Percent Time-Spent-Following	Average Travel Speed (mi/hr)
A	≤ 35	> 55
B	> 35 - 50	> 50 - 55
C	> 50 - 65	> 45 - 50
D	> 65 - 80	> 40 - 45
E	> 80	≤ 40

URBAN STREETS

Urban Street Class	I	II	III	IV
Range of FFS	55 to 45 mi/hr	45 to 35 mi/hr	35 to 30 mi/hr	35 to 25 mi/hr
Typical FFS	50 mi/hr	40 mi/hr	35 mi/hr	30 mi/hr
LOS	Average Travel Speed (mi/hr)			
A	> 42	> 35	> 30	> 25
B	> 34 - 42	> 28 - 35	> 24 - 30	> 19 - 25
C	> 27 - 34	> 22 - 28	> 18 - 24	> 13 - 19
D	> 21 - 27	> 17 - 22	> 14 - 18	> 9 - 13
E	> 16 - 21	> 13 - 17	> 10 - 14	> 7 - 9
F	≤ 16	≤ 13	≤ 10	≤ 7

▪▪▪▪▪ Dotted line represents the transition between LOS "C" and LOS "D"

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Additional copies of these guidelines can be copied from the internet at,
http://www.dot.ca.gov/hq/traffops/developserv/operationalsystems/

Addendum to Real Estate Market Analysis for Otay Mesa Community Plan Area, ERA

ERA

Economics Research Associates

Addendum Analysis

Addendum to Real Estate Market Analysis
Otay Mesa Community Plan Area
Otay Mesa, CA

Submitted to

City of San Diego

Submitted by

Economics Research Associates

December 15, 2006

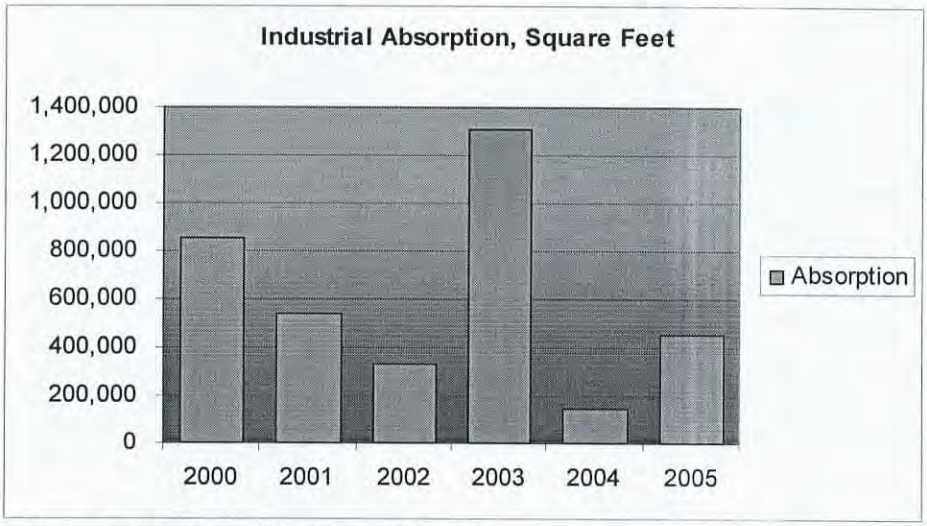
ERA Project No. 15640

Addendum

In the initial Otay Mesa Market Analysis (dated Nov. 7, 2005), ERA estimated the demand for additional developed gross acres between 2000 and 2030. ERA was requested to update these projections to reflect demand between 2006 and 2030.

While office and retail space absorption has been minimal in the Otay Mesa CPA, there has been approximately 3.6 million square feet of industrial absorption in Otay Mesa between 2000 and 2006. ERA has revised the industrial demand forecasts to reflect an update in projected countywide employment growth, as well as to reflect the industrial absorption between 2000 and 2006. With little new absorption since 2000, the office and retail demand projections have not been revised.

The table below displays the absorption of industrial space in the Otay Mesa area between 2000 and 2006.



Source: CoStar, Economics Research Associates

A total of more than 3.6 million square feet were absorbed between 2000 and 2006. Assuming a FAR of 0.4 and net-to-gross acreage ratio of 85% this equates to 245 gross industrial acres. Approximately 41 acres were absorbed between 2004 and 2006.

Industrial Space

Since the time of ERA's initial study, SANDAG has published updated employment growth forecasts for 2004 through 2030. Similar to the initial Market Analysis, ERA utilizes the new SANDAG employment growth forecasts to estimate the increase in supportable industrial space supply between 2004 and 2030. These figures are then adjusted by the actual industrial space absorption between 2004 and 2006 to calculate the expected industrial space demand between 2006 and 2030.

It should be noted that the total industrial employment figures using the updated forecasts are not comparable to the previous total industrial figures. SANDAG's 2006 employment forecasts were developed using the more precise NAICS industry classifications, as opposed to the SIC industry classifications used in the previous 2003 forecasts. The NAICS categories have a lower employment base in the relevant industry categories, but higher growth.

Table A-1 presents projected growth for industrial space (including industrial, distribution, and R&D space) over time countywide, based on projected growth in those sectors that utilize industrial space and applying an average employment density factor per worker. With the revised employment projections, the San Diego region is projected to support an increase of 58 million square feet of industrial space between 2004 to 2030, compared to a base supply of approximately 178 million in 2004. At an average floor-area ratio of 0.40 and an 85% net-to-gross acreage factor, the 58 million square feet translates into demand for approximately 4,200 acres countywide from 2004 to 2030.

Table A-2 presents projected demand for industrial space in the Otay Mesa Community Plan area under the following three scenarios:

Low Scenario – Assumes that industrial growth rates in Mexico rebound from recent declines (though not necessarily at historical rates) and that Otay Mesa's market position diversifies and appeals to general industrial users that are priced out of the region's central industrial areas, such as Kearny Mesa. While it assumed that Otay Mesa's recent regional market share is not maintained as other industrial sectors in the region recover and generate demand in the more central competitive areas, Otay Mesa's market share overall during the period is still above historical levels.

Moderate Scenario – Assumes that industrial growth rates in Mexico rebound more strongly, that Otay Mesa's market position diversifies and strongly appeals to general industrial users (especially as improvements to SR-125 and SR-905 improve accessibility), and that Otay Mesa begins to attract a share of the region's growing technology sectors. Again, while it assumed that Otay Mesa's recent regionally market share is not maintained as other industrial sectors that generate demand elsewhere in the region recover, Otay Mesa's market share overall during the period is still above historical levels and growing at a more aggressive rate than under the Low Scenario. Otay Mesa's market share, however, is still below its share of regional land inventory due to market preferences for other sub-markets that still have significant supply and the intensification of industrial land use in the highly preferred central regional sub-markets.

High Scenario – This addresses a scenario whereby the high regional market share that Otay Mesa experienced during the last few years will be sustained and that Otay Mesa will aggressively capture more than its share of regional land supply due to: continued strong demand in warehousing/distribution; relocated manufacturing; infrastructure improvements and additional funding sources for infrastructure improvements; competitive land and occupancy costs; loss of industrial land in central locations to other uses; and limitations in industrial land intensification in the region.

The Otay Mesa capture rate of countywide demand and distribution of local demand between East Otay Mesa and the Otay Mesa Community Plan Area (CPA) for each scenario are expected

to remain the same as originally forecasted. The same floor-area ratio, vacancy, and net-to-gross acre factors are also utilized. With the updated countywide demand, demand for new Otay Mesa CPA industrial space between 2004 and 2030 ranges from 802 acres in the Low Scenario to 1,310 acres in the High Scenario. After deducting the 40.5 acres of industrial space absorbed between 2004 and 2006, demand for industrial land in Otay Mesa between 2006 and 2030 is forecasted at 762 in the Low Scenario, 958 in the Moderate Scenario and 1,269 in the High Scenario.

Conclusions

Estimated demand for additional developed gross acres has been revised to reflect recent absorption and updated employment growth projections. Between 2006 and 2030, it is estimated that Otay Mesa can support the following increases in the amount of developed and occupied commercial and industrial land by 2030, beyond what was built in 2005:

Estimated Demand for Additional Developed Gross Acres Within the Otay Mesa CPA 2006-2030

	Low	Moderate	High
Industrial	762	958	1269
Office	20	25	29
Retail	87-109	87-109	87-109

Source: Economics Research Associates

ERA

Economics Research Associates

Table A-1

REVISED SAN DIEGO COUNTY INDUSTRIAL SPACE DEMAND PROJECTIONS - 2004-2030

Employment (NAICS Categories)	Assumed % Using Industrial	2004	2010	CAGR 2004 -2010	2020	CAGR 2010 -2020	2030	CAGR 2020 -2030
Manufacturing	97%	100,977	101,839	0.1%	105,341	0.6%	103,130	-0.4%
Construction	20%	17,480	18,709	1.1%	20,823	1.8%	23,038	1.7%
Transportation and Warehousing (1)	48%	13,584	15,929	2.7%	18,631	2.6%	20,332	1.5%
Wholesale Trade	100%	41,900	46,245	1.7%	52,350	2.1%	56,765	1.4%
Professional and Business Services (2)	18.5%	37,944	41,892	1.7%	48,896	2.6%	57,159	2.6%
Total		211,884	224,614		246,041		260,424	
Increase in Industrial Employment by Period			12,730		21,427		14,383	
Estimated Occupied Industrial Space/Employee (3)			1,314		1,192		1,091	
Total Increase in Industrial Space Demand by Period from Employment Growth			16,731,935		25,551,446		15,697,755	
Total Supportable Space Allowing for a Structural Vacancy of	7%		17,991,328		27,474,673		16,879,307	
Cumulative Increase in Supportable Industrial Space supply 2004-2030			17,991,328		45,466,001		62,345,308	

(1) Based on 2004 60% transportation and warehousing employment and 35% utilities employment.
(2) Estimate of scientific research and development percentage of industry category.
(3) Changing weighted-average factors based on projected changes in the employment growth by sector and each sectors assumed space/employment ratio.

Source: SANDAG, Economics Research Associates

Table A-2
REVISED PROJECTED DEMAND FOR INDUSTRIAL SPACE IN OTAY MESA 2004-2030

	2004	2010	2020	2030
Countywide				
Estimated Increase in Industrial Space During Previous Period		17,991,328	27,474,673	16,879,307
Otay Mesa Capture Rate Scenarios				
Low Scenario		40.0%	20.0%	22.5%
Moderate Scenario		50.0%	25.0%	27.5%
High Scenario		50.0%	40.0%	45.0%
Otay Mesa New Space Demand for Period at 7% Structural Vacancy				
Low Scenario		7,196,531	5,494,935	3,797,844
Moderate Scenario		8,995,664	6,868,668	4,641,809
High Scenario		8,995,664	10,989,869	7,595,688
Otay Mesa Cumulative New Space Demand at 7% Structural Vacancy				
Low Scenario		7,196,531	12,691,466	16,489,310
Moderate Scenario		8,995,664	15,864,332	20,506,142
High Scenario		8,995,664	19,985,533	27,581,221
Estimated Otay Mesa Demand Within City of San Diego				
Assumed % Within City of San Diego		95%	85%	65%
Low Scenario		6,836,705	4,670,694	2,468,599
Moderate Scenario		8,545,881	5,838,368	3,017,176
High Scenario		8,545,881	9,341,389	4,937,197
Otay Mesa Community Plan Cumulative New Space at 7% Structural Vacancy				
Low Scenario		6,836,705	11,507,399	13,975,998
Moderate Scenario		8,545,881	14,384,249	17,401,425
High Scenario		8,545,881	17,887,270	22,824,467
Cumulative Net New Acreage Demanded Based on Average FAR				
Assumed Average FAR		0.40	0.45	0.50
Low Scenario		392	587	642
Moderate Scenario		490	734	799
High Scenario		490	913	1,048
Annual Gross New Acreage (net to gross ratio of 80%)				
Low Scenario		490	734	802
Moderate Scenario		613	917	999
High Scenario		613	1,141	1,310
Cumulative Gross New Acreage Less 2004-2006 Developed Acreage				
Low Scenario		**450**	**693**	**762**
Moderate Scenario		**573**	**877**	**958**
High Scenario		**573**	**1,100**	**1,269**

Source: Economics Research Associates

GENERAL LIMITING CONDITIONS

This study is based on estimates, general knowledge of the industry and consultations with the client and the client's representatives. No responsibility is assumed for inaccuracies in reporting by the client, the client's agent and representatives or any other data source used in preparing or presenting this study. Data research for this Addendum was conducted in October of 2006 with only review of industrial land supply data and employment growth projections. Economics Research Associates has not undertaken any other update of its research effort. No warranty or representation is made by Economics Research Associates that any of the projected values or results contained in this study will actually be achieved. This report is not to be used in conjunction with any public or private offering of securities or other similar purpose where it may be relied upon to any degree by any person other than the client without first obtaining the prior written consent of Economics Research Associates. This study may not be used for purposes other than that for which it is prepared. This study is qualified in its entirety by, and should be considered in light of, these limitations, conditions, and considerations.

This report was prepared at the request of the City of San Diego as part of the Otay Mesa Community Plan Update. It was prepared by Economics Research Associates and funded by the Otay Mesa Planning Coalition. The information, along with public and City staff comments, may be used by the Planning Department to develop land use plan alternatives.

Projected Demand for Industrial Space in Otay Mesa

High Scenario Only (1)

Based on Table A-2 in ERA study, using High Scenario

Square Feet of Industrial Space					
	2004 - 2010		2020		TOTAL
Total	100%	**8,995,664**	100%	**10,989,869**	**19,985,533**
FAR Assumption:		*0.4*		*0.45*	

Net Acreage of Industrial Land					
	2004 - 2010		2011 - 2020		TOTAL
Total	100%	**516**	100%	**561**	**1,077**
City	95%	490	85%	477	967
County	5%	26	15%	84	110
Gross Acreage of Industrial Land					
	2004 - 2010		2020		TOTAL
Total	100%	**645**	100%	**701**	**1,346**
City	95%	613	85%	596	1,209
County	5%	32	15%	105	137

Adjusted Gross Acreage of Industrial Land (2)					
	2006 - 2010		2020		TOTAL
ERA MARKETING STUDY ASSUMPTIONS					
Total	100%	**604**		**701**	**1,305**
City	95%	574	85%	596	1,170
County	5%	**30**	15%	**105**	**135**
GEOGRAPHIC SPLIT ASSUMPTION (3)					
Total	100%	**604**	100%	**701**	**1,305**
City	70%	423	70%	491	914
County	30%	181	30%	210	392

Notes:

1: ERA Real Estate Market Analysis included three scenarios: Low, Medium and High forecast levels of industrial development in Otay Mesa.

2: Actual development, 2004 - 2006, was subtracted from previous 2010 forecast in an Addendum dated 12/15/2006

3: Not part of ERA analysis; these numbers represent an alternative method for development split between City and County.

EAST OTAY MESA:
Cumulative Traffic Analysis

	Project Name	Project Number	Acres	Explanation for Traffic Grouping	Traffic Counts	
	PROJECTS /W NO TRAFFIC COUNT				ADT	0%
1	RTX Truck Parking and Storage	S08-022 (previously S07-002) (08-0099087)	18	Project no longer active (idle status)	459	0
		Subtotal (Acreage)	18	Subtotal (ADT)	459	0
	PROJECTS /W REDUCED TRAFFIC COUNT (1)				ADT	11.46%
1	International Industrial Park (David Wick)	TM 5549 (07-0074561)	161.1	Industrial subdivision	10,201	1,169
2	OMC Properties 4-Lot Split	TPM 21140 (08-0102894)	49.8	Industrial subdivision	6,972	799
3	Otay Business Park (aka Paragon)	TM 5505 (06-0064186)	161.6	Industrial subdivision	33,486	3,837
4	Otay Crossings Commerce Park (Judd/Bragg)	TM 5405 SPA 04-006 (05-0060344)	311.5	Industrial subdivision	21,279	2,438
5	Sunroad / Otay Tech Center (Story)	SPA 07-003 TM 5538 (07-0079920)	253.1	Industrial subdivision (Note - Commercial overlay irrelevant; would require subsequent subdivision map)	30,566	3,502
6	Piper Otay Park	TM 5527 (06-0073639)	25.0	Industrial subdivision	1,612	185
7	South County Commerce Center (Dillard)	REVISED TM 5394R (08-0091020)	81.2	APPROVED - Industrial subdivision	7,486	858
8	Saeed Revised Map	REVISED TM 5304R (07-0090054)	20.6	APPROVED - Industrial subdivision. Fedex occupies 20 acres of this site.	2,602	298
9	Hawano (68.1 Gross Acres, 59.3 Net Acres)	TM 5566	59.3	Industrial Subdivision	13,639	1,563
10	Rabago (71 Gross Acres, 55 Net Acres)	TM 5568	55.0	Industrial Subdivision	8,520	976
		Subtotal (Acreage)	1178.2	Subtotal (ADT)	136,363	15,625

EAST OTAY MESA:
Cumulative Traffic Analysis

	Project Name	Project Number	Acres	Explanation for Traffic Grouping	Traffic Counts	
	PROJECTS /w 100% TRAFFIC COUNT				ADT	100%
1	**California Crossings**	P06-102 TPM 21046 (06-0073729)	29.60	Commercial use with Site Plan	22,785	22,785
2	**CCA San Diego Correctional Facility** (Budea Johns et al)	SPA 06-005 P 06-074 (06-0065889)	40.00	Specialized use with Site Plan	2,323	2,323
	CCA San Diego Correctional Facility	REVISED	37.00	Specialized use with Site Plan	See above	See above
3	**COPART County Sales Yard Time Extension** (Road One-Leasee)	P 88-020W1 (06-0058981)	38.20	Existing interim use	846	846
4	**FEDEX** Site Plan	S08-018	20.00	Industrial use with Site Plan; processing building permits	1,598	1,598
5	**Salvage Yards/ National Enterprises Recycling** (Wick)	P 98-001 (05-0053690)	161.00	APPROVED - Industrial use with Site Plan	2,408	2,408
	Salvage Yards/ National Enterprises Recycling (Wick)	REVISED	TBD	Industrial use with Site Plan	See above	See above
6	**Sunroad Interim Uses** Sunroad Centre I Harvest Ranch Nursery	P09-009 P09-005	138.00	Interim use with Site Plan	14	14
7	**Travel Plaza** (David Wick)	P 98-024W1 TPM 20414 (04-15749) Associated: L14632	83.00	Industrial use with Site Plan	5,116	5,116
8	**Vulcan**	S 07-038 (07-0084498)	12.70	Industrial use with Site Plan	1,078	1,078
9	**Otay Hills Mining** **(433.9 total acres, /w 112.1 acres developed)**	P 04-004	112.10	Rock Quarry	2,189	2,189
		Subtotal (Acreage)	**631.60**	**Subtotal (ADT)**	**38,357**	**38,357**
TOTALS:		*Acreage:*	**1,827.80**	*Traffic (ADT):*	**175,179**	**53,982**

(1) Reduced count is percentage of total industrial acreage forecast for East Otay Mesa between 2006 and 2020, or 135 gross acres, divided by total acreage in group of industrial subdivisions. See attached table for ERA market forecast.

EAST OTAY MESA:
Cumulative Traffic Analysis

	Project Name	Project Number	Acres	Explanation for Traffic Grouping	Traffic Counts	
	PROJECTS /w 100% TRAFFIC COUNT				ADT	100%
1	**California Crossings**	P06-102 TPM 21046 (06-0073729)	29.60	Commercial use with Site Plan	22,785	22,785
2	**CCA San Diego Correctional Facility** (Budea Johns et al)	SPA 06-005 P 06-074 (06-0065889)	40.00	Specialized use with Site Plan	2,323	2,323
	CCA San Diego Correctional Facility	REVISED	37.00	Specialized use with Site Plan	See above	See above
3	**COPART County Sales Yard Time Extension** (Road One-Leasee)	P 88-020W1 (06-0058981)	38.20	Existing interim use	846	846
4	**FEDEX** Site Plan	S08-018	20.00	Industrial use with Site Plan; processing building permits	1,598	1,598
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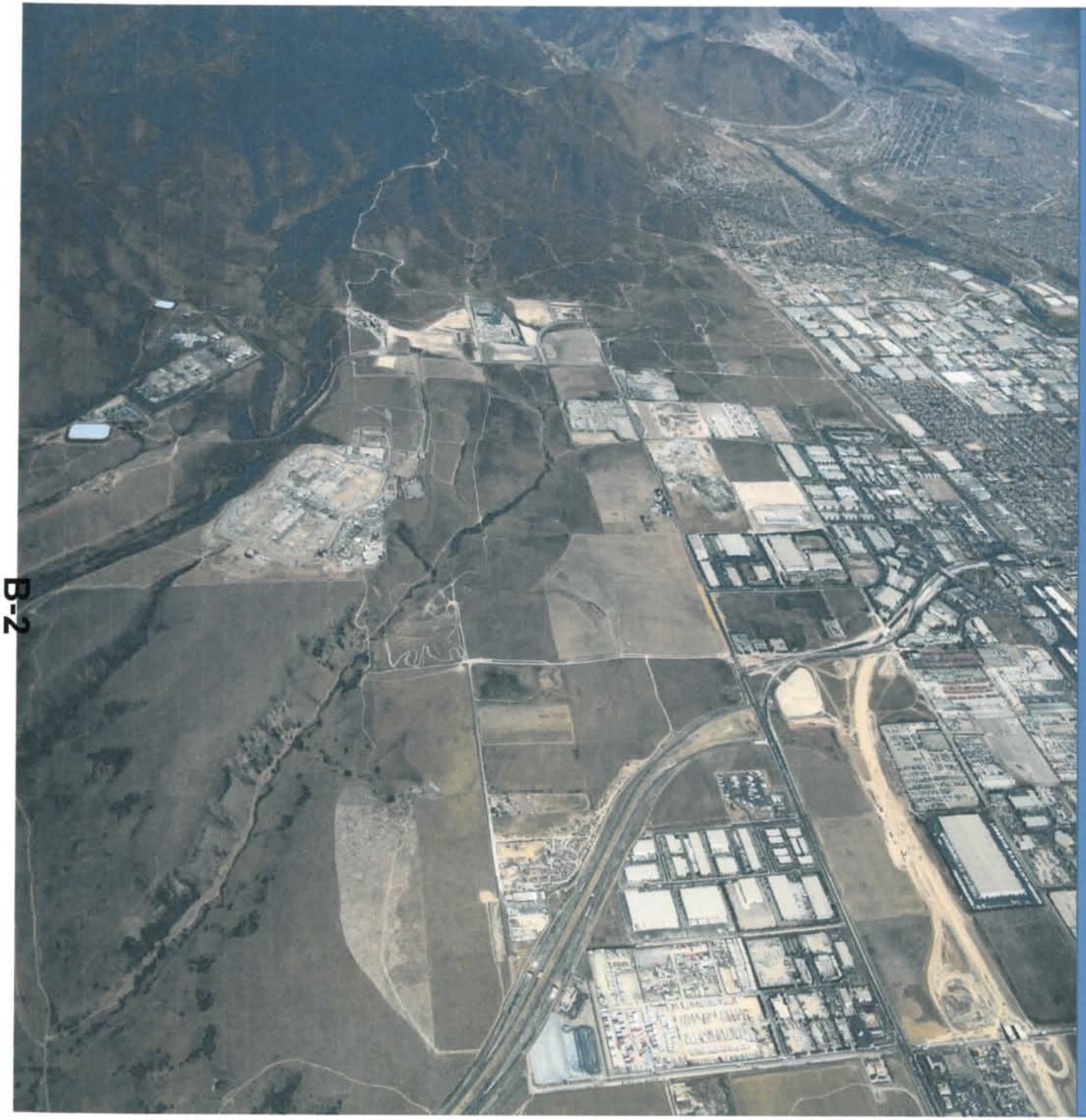
APPENDIX B

- Excerpts from the East Otay Mesa Specific Plan, September 15, 2010
- Excerpts from 5 year Capital Improvement Program (CIP) 2010/11 – 2014/15
- Caltrans' Fact Sheets for SR905 & SR-11
- SANDAG Series 11 Model for Otay Mesa 2020

Excerpts from the East Otay Mesa Specific Plan, September 15, 2010



COUNTY
OF
SAN DIEGO

EAST OTAY MESA BUSINESS PARK SPECIFIC PLAN

As Amended by
SPA 10-001
September 15, 2010

East Otay Mesa Specific Plan Amendment

2010 Combined Plan (SPA 10-001)

County of San Diego

Board of Supervisors

Greg Cox, First District

Dianne Jacob, Second District

Pam Slater-Price, Third District

Ron Roberts, Fourth District

Bill Horn, Fifth District

Prepared by
Department of Planning and Land Use
With the assistance of Project Design Consultants

Reviewed by the Planning Commission
On July 23, 2010

Approved by the Board of Supervisors
On September 15, 2010

East Otay Mesa Specific Plan

1994 Combined Plan

County of San Diego

Board of Supervisors

Brian P. Bilbray, First District

Dianne Jacob, Second District

Pam Slater-Price, Chairwoman, Third District

Leon L. Williams, Fourth District

John MacDonald, Fifth District

Prepared by
Department of Planning and Land Use
With the assistance of Shapouri & Associates
And Bryan Grunwald Associates and HGHB

Reviewed by the Planning Commission
On April 15, 1994

Approved by the Board of Supervisors
On July 27, 1994

CERTIFICATE OF ADOPTION

I hereby certify that this plan consisting of this text, exhibits, and appendices is the East Otay Mesa Specific Plan (SPA 10-001, which recombined Subarea 1 with Subarea 2). I also hereby certify that amendments to this plan were considered by the San Diego County Planning Commission on July 23, 2010, and those amendments were adopted by the San Diego County Board of Supervisors on September 15, 2010. The document, as amended, supercedes all previous Specific Plans for the area covered by SubArea 1and Subarea 2.

Date: SEPTEMBER 28, 2010

Attest: _____

Eric Gibson, Planning Director
Department of Planning and Land Use

SPECIFIC PLAN HISTORY

Specific Plan (SP) 93-004 created the East Otay Mesa Specific Plan Area and was approved by the Board of Supervisors on July 27, 1994.

The first amendment to the Specific Plan (SPA 98-002) was approved by the Board of Supervisors on January 13, 1999 (4). This amendment allowed for the sale of gasoline in Support Commercial areas.

The second amendment to the Specific Plan (SPA 00-005) was approved by the Board of Supervisors on June 12, 2002 (4). This amendment updated the land use plan and permit processing requirements and split the Specific Plan Area into Subareas 1 and 2.

The third amendment to the Specific Plan (SPA 04-002) was approved by the Board of Supervisors on February 2, 2005 (4). This amendment revised the public landscaping requirements.

The fourth amendment to the Specific Plan (SPA 05-005) was approved by the Board of Supervisors on November 2, 2005 (3). This amendment revised the parking requirements to conform to the standards for Subarea 2.

The fifth amendment to the Specific Plan (SPA 06-003) was approved by the Board of Supervisors on August 1, 2007 (1). This amendment updated the Circulation Plan, Sidewalk Standards, and Fencing Requirements,; It was combined with General Plan Circulation Element (GPA 06-013) and the Bicycle Transportation Plan.

The sixth amendment to the Specific Plan (SPA 06-005) was approved by the Board of Supervisors on April 8, 2009 (1). This amendment included minor amendments to Subarea 1.

The seventh amendment to the Specific Plan (SPA 10-001) was approved by the Board of Supervisors on September 15, 2010. This amendment recombined Subarea 1 and Subarea 2, modified the Specific Plan boundary in response to a voter initiative, and made minor revisions to the Circulation Plan, Land Use Plan and regulatory provisions.

Chapter 2

PLAN ELEMENTS

Chapter 2: Plan Elements

2.1 LAND USE ELEMENT

Goal:

Promote a well-organized international district in East Otay Mesa to attract and accommodate regional forecasted demand for industrial and business development.

2.1.1 Vision

With large, level, relatively inexpensive land located near a large, affordable labor pool and moderately priced housing, East Otay Mesa is highly suitable for large-scale industrial and business development.

The technology sector in the San Diego region has expanded, creating additional demand for industrial space. East Otay Mesa is the largest planned industrial district in the unincorporated portion of the County and is poised to serve the demand for technology business park space. With large, level, relatively inexpensive land located near a large, affordable labor pool and moderately priced housing, East Otay Mesa is highly suitable for large-scale industrial and business development. Moreover, its prominent location along the Mexican border makes it a prime location for industrial use, specifically technology manufacturing as well as warehouse and distribution uses associated with manufacturing activities in Mexico as part of the Maquiladora Program.

The intent of the East Otay Mesa Specific Plan is to promote development of the area into a comprehensive industrial and business district with centrally located cores of more intense employee uses and commercial services. This is accomplished through land use classifications that create defined districts devoted to technology-oriented industrial, manufacturing, and business serving uses. The circulation system supports these uses. Traffic is dispersed as it moves toward the core areas through a hierarchy of streets. These streets direct truck traffic from the State Routes to Prime Arterials, Major, and Industrial/Commercial Collector Roads. At full development, these areas served by local roads are encouraged to develop with Activity Nodes. Activity Nodes allow for greater intensity and provide opportunity for social gathering and pedestrian

activity. These planning and circulation features combine to create a unique image to set East Otay Mesa apart from other industrial areas of San Diego County.

2.1.2 Land Use Goals and Policies[1]

GOALS:

Goal 1: Promote a well-organized international industrial and business district in East Otay Mesa to attract and accommodate forecasted growth.

Goal 2: Promote the conservation of open space to preserve environmental resources and provide recreational opportunities for the industrial workforce and surrounding community residents.

POLICIES:

Industrial Land Use:

Policy LU-I: Accommodate the forecasted mixed industrial uses in East Otay Mesa.

Implementation: The land use map and regulatory section of the Specific Plan accommodates forecasted industrial development in East Otay Mesa.

Commercial Land Use:

Policy LU-2: Provide land uses that allow for a range of commercial uses in optimum locations to serve the retail needs of the future industrial and highway users in East Otay Mesa.

Implementation: The land use map and regulatory sections of the Specific Plan establish specific locations and development standards for commercial land uses.

Policy LU-3: The Commercial Center (commercial overlay) shall allow for transit-oriented land uses, encouraging pedestrian circulation.

[1] The goals and policies listed in Chapter 2 were developed for the original (1994) East Otay Mesa Specific Plan. Minor updates were made, as needed, when preparing the 2010 Amendment to reflect new information.

Implementation: Compliance with this policy will be determined during the Site Plan review process.

Policy LU-4: Avoid strip commercial development in the industrial area.

Implementation: In industrial areas, this policy could be implemented by clustering commercial development at intersections or by locating commercial development at the interior of industrial lots. In addition, commercial development in industrial areas should feature a pedestrian friendly layout and safe vehicular access.

Policy LU-5: Should industrial development be located in an area planned for commercial use, commercial use cannot be re-established within that area without bringing the development into conformance with commercial use regulations in the Specific Plan.

Implementation: During the Site Plan review process, plans for commercial development will be reviewed for compliance with applicable development standards to insure that the development incorporates provisions for parking, architectural design, and site planning that are necessary to accommodate commercial use.

Policy LU-6: Coordinate vehicular and pedestrian circulation between adjacent commercial properties.

Implementation: During the Tentative Map and the Site Plan review process, plans will be reviewed to ensure compliance with provisions that require coordinated circulation between adjacent commercial properties.

Residential Land Use

Policy LU-7: Designate very low density Rural Residential development as the appropriate land use in sensitive hillside areas in the East Otay Mesa Specific Plan Area.

Implementation: The land use map of the Specific Plan designates the hillside areas for Rural Residential use at a density of one dwelling unit per 20 gross acres. Rural Residential areas with steep slopes and sensitive biological resources are given a "G" Designator and are subject to the Sensitive Resource Area Regulations of the Zoning Ordinance. To protect sensitive environmental resources in Rural Residential areas, the Specific Plan requires that development be preceded by detailed environmental review prior to approval of discretionary permits.

Interim Use

Policy LU-9: Provide for interim land uses that are compatible with the planned industrial and commercial land uses.

Implementation: The land use regulations of the Specific Plan allow interim uses by Major Use Permit. Such uses shall be limited to a maximum initial period of 5 years unless a finding is made that the proposed use has an overriding significant economic benefit to the region. Time extensions for additional 5-year periods may be permitted.

Conservation / Open Space

Policy LU-10: Protect and conserve steep slopes and biologically sensitive areas in the Specific Plan Area (previous policy COS-1).

Implementation: This policy will be implemented primarily through the application of the Rural Residential and Conservation / Limited Use land use designations, the MSCP program (see Figure 1.2-1), and the application of the "G" Designator to Sensitive Resource Areas (see Figure 3.2-1). The areas to be protected include the following: (a) the eastern hillside area which has steep slopes and biologically sensitive resources, (b) Johnson and O'Neal Canyons, which have steep slopes; and (3) and the area west of Johnson Canyon, which contains both coastal sage scrub and vernal pool habitat.

Policy LU-11: Avoid any agricultural or pre-development clearing and grading on steep slope areas (previous policy COS-2).

Implementation: This policy would be implemented during discretionary project review. Projects with a "G" Designator will be reviewed for compliance with the Sensitive Resource Area Regulations and projects with a "B" Designator will be reviewed for compliance with Specific Plan regulations during Site Plan review.

Policy LU-12: Protect and conserve significant cultural resource sites (archaeological and historical sites) in the Specific Plan Area (previous policy COS-5).

Implementation: This policy would be implemented during discretionary project review when preparing CEQA documents. Archaeological and historical surveys were conducted over the majority of the East Otay Mesa Specific Plan (see Appendix 4).

2.1.3 Land Use Plan

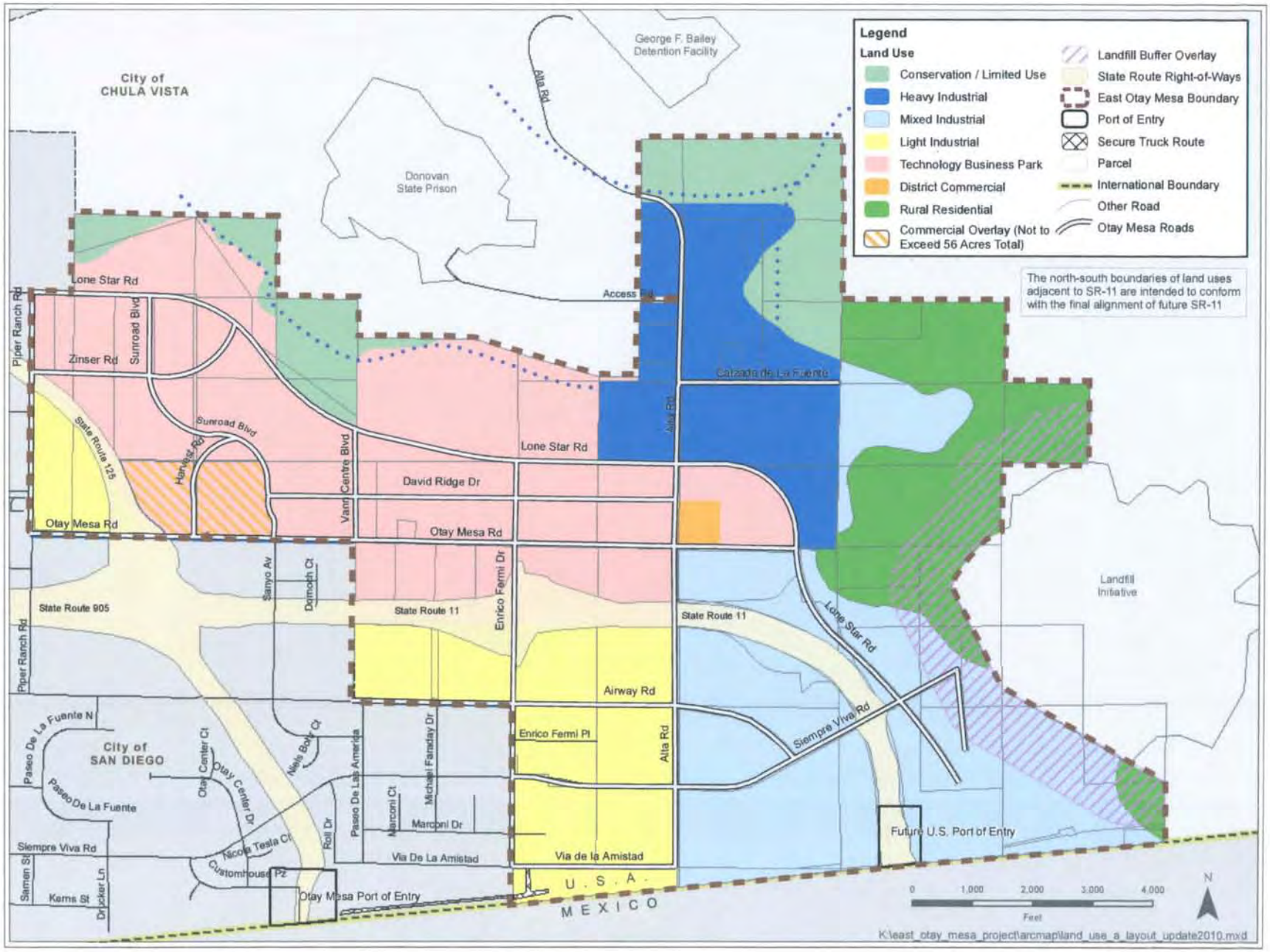
The distribution, location, and extent of land use in the East Otay Mesa Specific Plan is shown on the Land Use Plan, Figure 2.1-1 and Table 2-1 below. Approximately 304 acres of land were removed from the Specific Plan in 2010 as a result of a change made to the Specific Plan boundary following passage of a voter initiative.

Table 2.1-1: Planned Land Use Tabulation

Land Use Designation	Approximate Acres (Net)	
	Land Use (Acres)	**Subtotals**
Activity Node Overlay	*28 (Maximum)*	*84 Acres of Overlay*
Commercial Center Overlay	*56 (Maximum)*	
District Commercial	11.0	**2,110.1 Acres** High-Intensity Commercial and Industrial Use
Heavy Industrial	292.0	
Mixed Industrial	629.9	
Light Industrial	363.0	
Technology Business Park	814.0	
Rural Residential	311.3	**552.3 Acres** Low Intensity Use
Conservation/Limited Use	241.0	
Circulation Corridors (1)	350.4	
TOTAL	**3,012.7 Acres**	

(1) Circulation corridors include State freeways, Circulation Element roads, and Specific Plan roads. Standard rights-of-way were used to obtain land use calculations, with the exception of Caltrans freeways where average road widths were developed using data provided by Caltrans.

Figure 2.1-1 Land Use Plan



B-13

2.1.4. Land Use Designations

Multiple land use designations achieve the envisioned mixture of industrial, business, commercial, and conservation areas.

The land use designations for East Otay Mesa are: Technology Business Park, District Commercial, Light Industrial, Heavy Industrial, Mixed Industrial, Rural Residential, and Conservation/Limited Use. A Commercial Center Overlay and Activity Nodes are located within the Technology Business Park. Activity Nodes may also be located within the Light Industrial District. A Landfill Buffer was established for those portions of Mixed Industrial and Rural Residential that are located within 1,000 feet of a landfill site, which is located outside the southeastern corner of the Specific Plan. These planned land uses will be implemented through various discretionary permits.

Multiple land use designations achieve the envisioned mixture of industrial, business and commercial land uses, as well as conservation areas. Table 2.1-1, Planned Land Use Tabulation, summarizes the amount of planned development by land use designation. The general intents of the Technology Business Park, Activity Node, Commercial Center, Light Industrial, Heavy Industrial, and Conservation/Limited Use Area designations are described below. Specific permitted uses and development requirements within each of these designations are detailed in Section 3.0.

Locations of East Otay Mesa Activity Nodes are based on a hierarchy of streets, topography, views and walking distances. The outer boundary of Activity Nodes shall be spaced a minimum of 300 feet from Prime Arterial or Major Roads. In addition, each Activity Node shall be a minimum of 1,250 feet apart. The proposed corridor alignment for State Route 11 is subject to change upon the completion of CalTrans' Environmental Studies. The north-south boundaries of adjacent land uses are intended to conform with the final alignment of future SR-11.

Technology Business Park

The presence of applied scientific institutes and diverse research and development industries in the San Diego region creates a demand for future research, development, testing and manufacturing sites. East Otay Mesa is considered an ideal location for these facilities and offers the following amenities:

- Large, fairly level, developable land that is relatively inexpensive;

- Good access provided by three planned freeway links, an existing border crossing, and a planned additional border crossing;
- Ample employee pool from adjacent communities and Mexico;
- Special visual and environmental amenities associated with the San Ysidro Mountains and Otay River Valley; and
- Proximity to regional and international airports and to the Mexican border.

The intent of the East Otay Mesa land use plan is to provide the quality environment that technology businesses are often accustomed to and create a pleasant working environment for employees, focusing development in parks, or campus-like settings.

The Technology Business Park designation is applied in the northern and western portions of the Specific Plan Area, closest to planned regional highways, proposed light rail and urbanized lands (Figure 2.1-1). Land subject to the Technology Business Park designation is intended for development of manufacturing operations and business offices that research, develop and produce advanced technologies, such as defense and space technologies, communication, computer and internet, audio/visual, pharmaceutical and medical products. The intent of the East Otay Mesa land use plan is to provide the quality environment that technology businesses are often accustomed to and create a pleasant working environment for employees, focusing development in parks, or campus-like settings. This campus-like setting complements the aim of the Activity Node, which strongly encourages pedestrian activity.

Activity Nodes

At full development, the Activity Nodes will act as pedestrian friendly business cores and social gathering areas for the East Otay Mesa employee population. Foreseeable uses in East Otay Mesa Activity Nodes include office and computer supply, building supply, hotels or motels, restaurants, and health club businesses.

The siting and design of Activity Nodes is discussed in Sections 2.3.2 Urban Design Element, and 3.3.2 Processing Requirements. The Activity Nodes allow for increased floor area ratios and shall be located at the time a property owner proposes to enact the benefits of this land uses designation. The property could develop without establishing an Activity Node. At the time a property owner wanted to benefit from an Activity Node's commercial land uses and increased intensity, the proposed land uses and/or lot design would be reviewed by the County staff for conformance with this Specific Plan, including the parameters for Activity Node location.

Commercial Center

Commercial Center is an overlay designation and provides opportunity for major retail development in the East Otay Mesa Specific Plan.

The Commercial Center is an overlay designation and provides an opportunity for a major retail development of up to fifty-six acres in the East Otay Mesa Specific Plan. The site is identified on the land use plan (Figure 2.1-1), in the northwestern portion of the plan area. Uses anticipated in this designation include a combination of local-serving and regional-serving retailers that could create a destination commercial development. Unless a discretionary permit is issued to implement a Commercial Center on this site, the underlying Technology Business Park land use designation and associated standards shall apply.

The San Diego Association of Governments (SANDAG) is currently refining the transit network for the South Bay. This study will address the transit needs and potential locations within Otay Mesa. Since the Commercial Center will be a traffic generator for East Otay Mesa, transit needs will need to be addressed as part of any discretionary application. This may necessitate the need for on-site transit facilities, including a station and pedestrian and bicycle connections.

Major site access points, curb cut locations, and parking lot layouts shall be coordinated with adjacent properties through the Site Plan review process to facilitate vehicular and pedestrian circulation throughout commercial shopping areas. Parking lot layouts shall be closely coordinated with adjoining commercially zoned properties to provide shared driveways and access, where feasible. Pedestrians should be able to access adjacent commercial properties without exiting onto a public street to re-enter an adjoining commercial property.

District Commercial

The District Commercial designation is intended to accommodate an appropriate range of retail goods and services intended to serve a 1 to 2 mile trade area. Application of this designation is limited to a 10-acre parcel on the northeast corner of Alta Road and Otay Mesa Road, where commercial use can support industrial development in the eastern portion of the Specific Plan.

Light Industrial

The Light Industrial designation is applied to lands on the western edge of the Technology Business Park area in addition to lands in the southern portion of the Specific Plan Area (Figure 2.1-1). Land designated as Light Industrial is intended to accommodate all uses permitted in the Technology Business Park plus wholesale storage and distribution, manufacturing, general industrial and several commercial uses.

Heavy Industrial

The Heavy Industrial designation is applied to areas north of Otay Mesa Road adjacent to Alta Road (Figure 2.1-1). These areas provide for most uses allowed in the Technology Business Park and Light Industrial land use designations plus recycling plants, salvage yards, and outdoor storage.

Mixed Industrial

The Mixed Industrial designation is applied to areas formerly known as Subarea 2. These areas provide are intended primarily for wholesale storage and distribution, research services, and general industrial uses. General industrial land use is defined as industrial plants primarily engaged in manufacturing, compounding, processing, assembling, packaging, treatment or fabrication of materials and products. Many other compatible commercial types of uses such as construction sales and services, automotive and equipment uses, and custom manufacturing are also permitted.

Support commercial uses are permitted within Mixed Industrial areas, and are planned to serve the daily convenience needs of the industrial work force in East Otay Mesa. They may be incorporated within industrial structures or located in a separate structure on the industrially zoned land. Support commercial development is limited to a maximum percentage of the gross acreage for industrial parcels, and it should be clustered at intersections or located within the interior of industrial developments.

Rural (Hillside) Residential

The hillside area at the eastern edge of East Otay Mesa is planned for very low-density rural residential land use. This area has steep slopes and contains significant biological resources. Because of the area's rugged terrain and its sensitive biology, this area is not suitable for agriculture, commercial or industrial use.

Conservation/Limited Use Area

Lands in the northwestern and northeastern reaches of the Specific Plan SubArea 1 area are designated Conservation/Limited Use Area (Figure 2.1-1). The rugged terrain and sensitive biological resources render these areas undesirable for commercial or industrial uses. The Conservation/Limited Use Area will allow uses such as outdoor participant sports, campgrounds and resorts with a Major Use Permit.

Interim Uses

Interim Uses are allowed with a Major Use Permit and shall be developed in compliance with this Specific Plan Development Standards (Section 3.2). Interim Uses shall be allowed for a maximum initial time limit of five years and only if there has been no application for a permanent use on an adjoining parcel that would be negatively impacted by the proposed Interim Use. Time extensions for additional 5-year periods may be permitted, but permit extensions must be approved no later than two years following the end of the interim use period. Under extreme economic circumstances, the County may establish policies that temporarily modify development standards for interim uses provided a sunset date is established and findings are made that the interim use does not impact permanent development within East Otay Mesa.

Permitted Interim Uses are shown in Table 3.1-1 in this Specific Plan, with the exception of uses permitted within the Landfill Buffer as shown in Appendix 6.

Landfill Buffer Overlay

A 1,000 foot wide buffer overlay was identified around a landfill site established by a voter initiative in June 2010. The purpose of the buffer is to establish development regulations that minimize land use conflicts between the landfill and nearby development.

2.2 Circulation Element

Goal:

Provide a multi-modal transportation system consisting of highways, streets, and transit networks adequate to serve subregional transportation needs at an acceptable level of service.

2.2.1 Introduction

The Circulation Element sets the planning framework and provides a safe, convenient and efficient circulation system.

The Circulation Element of the Specific Plan and the General Plan set the planning framework to provide a safe, convenient and efficient circulation system. The East Otay Mesa Specific Plan identifies transportation facilities capable of supporting the anticipated growth in this area, consistent with policies presented in the Land Use Element of the Specific Plan and the County's General Plan.

2.2.2 Goals and Policies

GOAL:
Provide a multi-modal transportation system consisting of highways, streets, and transit networks adequate to serve sub-regional transportation needs at an acceptable level of service.

POLICIES:

Regional Road Policies

Policy C-1: Promote the development of regional road facilities as necessary to accommodate future development in the East Otay Mesa Specific Plan Area.

Implementation: Property owners shall be required to reserve right-of-way for the SR-905, SR-125 and SR-11 freeways and the planned International Border Crossing. Property owners will also be required to reserve additional road right-of-way on Enrico

Fermi Drive and Siempre Viva Road for future ramps and auxiliary lanes to access the SR-11 freeway extension.

Policy C-2: Promote the development of inter-state freeway facilities to the existing Otay Mesa Border Crossing and planned international border crossings in the East Otay Mesa Specific Plan Area.

Implementation: The County will coordinate with Caltrans to promote the development of SR-905 and SR-11 from the existing and planned international border crossings to I-805.

Local Road Policies

Policy C-3: Promote the development of local road network to adequately serve the planned land uses in the East Otay Mesa Specific Plan Area.

Implementation: The local road system, which includes Circulation Element and Specific Plan roads indicated in the Circulation Plan, will be built by the adjacent property owners according to County policies. Through the discretionary permit process, property owners will be required to dedicate and improve roads.

Policy C-4: Ensure that new development provides adequate access to existing land owned and operated by the federal Border Patrol along the USA/Mexico border.

Implementation: The Border Patrol currently owns and operates an approximately 150 foot wide corridor that functions as a view and emergency access area, consistent with Board Policy I-111. Property owners with projects adjacent to the international border shall consult with the Border Patrol during the discretionary review process to determine whether land must be acquired by the Border Patrol to access this corridor from north/south oriented Circulation Element or Specific Plan roads.

City of San Diego Road Coordination

Policy C- 5: Promote circulation coordination between the County of San Diego and the City of San Diego to develop a safe and efficient roadway system for Otay Mesa.

Alternative Modes of Transportation Policies

Policy C- 6: Promote the development and use of a regional transit system to serve the East Mesa.

Implementation: The County will coordinate with SANDAG/MTS to implement regional bus and future LRT service to the East Otay Mesa area.

Policy C-7: Property owners shall dedicate right-of-way for transit facilities as shown in the SANDAG Regional Transportation Plan (RTP)/MTS South Bay Public Transportation Plan.

Implementation: Property owners would dedicate right-of-way for transit facilities during the discretionary review process.

Policy C-8: Promote connections between transit stops and employment destinations in East Otay Mesa.

Implementation: Adequate shoulder space should be retained within the public right-of way to allow a loop bus system to be developed in the future. When development levels are adequate to support a shuttle bus service, the County DPLU and DPW will coordinate with SANDAG, appropriate transit agencies (MTS), and property owners to plan a local bus shuttle service to serve the East Otay Mesa Area. This will include provision of bus stop shelters along the proposed bus route for the convenience of bus patrons. This facility would be implemented in conjunction with a Transportation System Demand Program.

Policy C-9: Promote development of freight rail service to East Otay Mesa.

Implementation: The County and Caltrans will coordinate with rail line operators and other agencies as appropriate to promote freight rail service to East Otay Mesa.

Policy C-10: Provide for development of a bicycle system that will provide a safe and convenient means of transportation for bicyclists.

Implementation: Implement the bicycle network as defined by Table 2.2-1 of the Circulation Element. The objective of these bicycle routes would be connecting transit facilities with appropriate employment areas as individual projects are reviewed. To encourage bicycle use, bicycle parking should be provided at all commercial and industrial facilities.

Policy C-11: Promote pedestrian circulation in East Otay Mesa.

Implementation: Require all road rights-of-way in East Otay Mesa to include a sidewalk in accordance with Specific Plan standards. As part of the discretionary permit review process, the County will require pedestrian connections between commercial and industrial facilities and the pedestrian network located on public roads. Large developments should include on-site pedestrian access networks.

Regional Transportation Management

Policy C-12: Promote a variety of techniques to maximize the efficiency of the existing and planned transportation network.

Implementation: The County will work with other agencies in the region to comply with the San Diego County Regional Growth Management Strategy (RGMS), Congestion Management Pro-gram (CMP), and Air Quality Plan Transportation Control Measures. Businesses within East Otay Mesa will need to comply with any Regional Transportation Demand Management (TDM) Pro-gram as it is promulgated.

Phasing and Monitoring Policies

Policy C-13: Work with the City of San Diego and Caltrans to expedite the construction of the SR-905 freeway and to plan the SR-11 freeway to support development within the Specific Plan.

Implementation: The County will maintain contact with the City of San Diego and Caltrans to keep abreast of planning and funding developments pertaining to regional roadways. The County will assist property owners by working with SANDAG, Caltrans, and the federal government to ensure that SR-11 and the second Otay Mesa Port of Entry will be planned, designed and constructed in a manner consistent with this Specific Plan. Important features include road alignment, two interchanges (Enrico Fermi Road, Siempre Viva Road), and elevated road segments to ensure connectivity within the local road network without the use of bridges.

Policy C-14: Monitor traffic growth in East Otay Mesa and its effects on the transportation system.

Implementation: Traffic will be monitored as part of the discretionary review process, and the Specific Plan will be updated, as appropriate, in response to major changes in regional roadway or transit systems. When appropriate, staff will prepare a summary

report on traffic conditions for submittal to the Directors of DPLU and DPW identifying traffic-related issues and recommending appropriate actions.

Other Circulation Issues

Policy C-15: Assure that necessary, feasible road improvements are provided to mitigate project impacts.

Implementation: Conditions prepared for discretionary projects will comply with the Specific Plan, Board Policies and CEQA. Applicants for discretionary permits shall also be required to comply with the requirements of the County's Transportation Impact Fee (TIF) Ordinance to pay their fair share of cumulative transportation impacts.

Policy C-16: Support a future international border crossing in East Otay Mesa.

Implementation: The Specific Plan should be compatible and consistent with the proposed location of an international border crossing in the southeastern portion of the Specific Plan as well as expansion plans for the existing border crossing in the City of San Diego.

Policy C-17: Facilitate the implementation of the Otay River Valley Regional Park and trails (previous policies COS-3 and COS-4).

Implementation: The County will coordinate with the Otay Valley Regional Park Policy Committee to ensure that the Otay Valley Regional Park Plan shows trail links in Johnson and O'Neal Canyons in accordance with the East Otay Mesa Specific Plan (see Figure 2.2-1 Circulation Plan). Commercial or industrial development will be reviewed for compliance with trail requirements in the Specific Plan during the discretionary review process. Property owners will be required to dedicate an easement for trail right-of-way in Johnson and O'Neal Canyons for future trail connections within the regional trail system. The precise alignment of the trail corridor should be located within one-quarter mile of its depiction in Figure 2.2-1, or as required by the County Trails Program.

2.2.3 Circulation Plan

Figure 2.2-1, Circulation Plan, shows the roadway network and road classifications for the East Otay Mesa Specific Plan. Roadway classifications by roadway segments are shown in Table 2.2-1, East Otay Mesa Roadway Network. Please note that Figure 2.2-1 depicts a conceptual alignment for Circulation Element and Specific Plan roads. Precise alignments shall be determined during the discretionary review process or through special studies conducted by the County of San Diego.

In preparation of this element, coordination occurred with the City of Chula Vista, the City of San Diego, the California Department of Transportation (CalTrans), the San Diego Association of Governments (SANDAG), and the City of Tijuana, Mexico.

2.2.4 Regional Access

Future regional thoroughfares play an important role in the development of East Otay Mesa. Planned State Routes (SR-125 and SR-11), along with the extension of SR-905 to the Otay Mesa Border crossing, are critical to accommodating the future development of the entire Otay Mesa area. In addition to freeways, planned local roads within East Otay Mesa will play an important role in the area's future. Planned improvements to regional highway system in the area include:

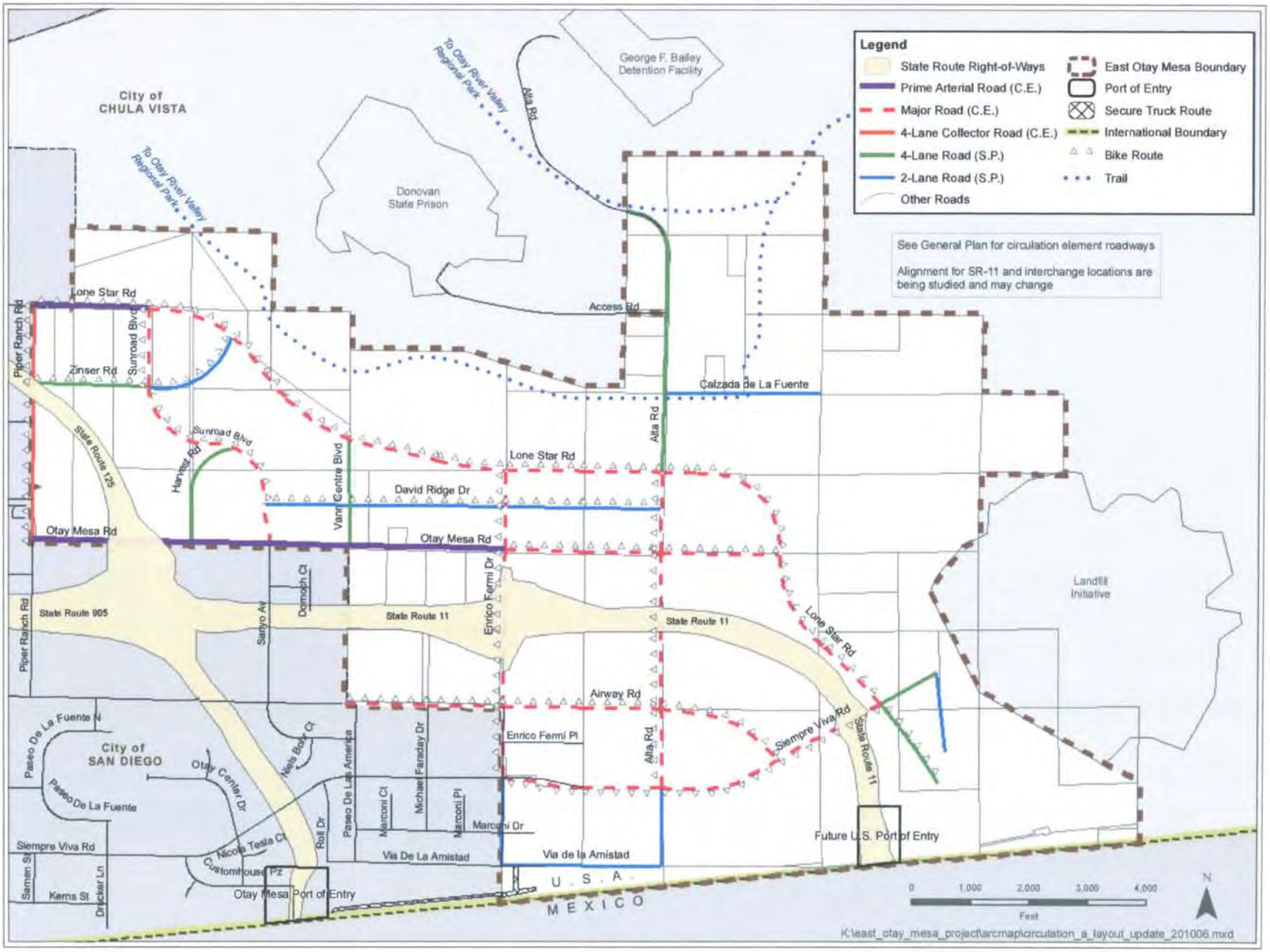
- **State Route 905 (SR-905):** The ultimate plan for the extension of SR-905 is to provide six single occupancy vehicle (SOV) lanes and two high occupancy vehicle (HOV) lanes between Interstate 805 (I-805) and SR-125/Harvest Road. The planned extension would travel east to SR-125 and then curve south to the border. Within Otay Mesa, interchanges are planned at Caliente Boulevard, Heritage Road, Britannia Boulevard, Le Media Road, and SR-125. The southern terminus of SR-905 would be the Otay Mesa Border crossing. As part of this project the SR-905/Siempre Viva Road grade separated interchange was completed and opened to traffic in 2005. Currently, Caltrans is constructing Phases 1A and 1B of the SR-905 facility. As currently scheduled the construction of Phase 1A will be completed by late 2010 and Phase 1B will be completed by the summer of 2012. Other phases (2 through 4) of the SR-905 facility will be programmed as funding becomes available.

Table 2.2-1
East Otay Mesa Roadway Network

ROAD NAME	FROM	TO	CLASSIFICATION	Road Type	Bicycle Network ?
Airway Road	City of San Diego	Siempre Viva Road	4L-Major	Circulation Element (CE)	Yes
Alta Road	Specific Plan Boundary	Lone Star Road	4L-I/C Collector	Specific Plan (SP)	No
	Lone Star Road	Otay Mesa Road	4L-Major	Circulation Element (CE)	Yes
	Otay Mesa Road	Siempre Viva Road	4L-Major	Circulation Element (CE)	Yes
	Siempre Viva Road	Via de la Amistad	2L-I/C Collector	Specific Plan (SP)	No
David Ridge Drive	Sunroad Boulevard	Alta Road	2L-I/C Collector	Specific Plan (SP)	Yes
Calzada de la Fuente	Alta Road	East end of E.C. Way	2L-I/C Collector	Specific Plan (SP)	No
Enrico Fermi Drive	Lone Star Road	Otay Mesa Road	4L-Major	Circulation Element (CE)	Yes
	Otay Mesa Road	Airway Road	4L-Enhanced Major[2]	Circulation Element (CE)	Yes
	Airway Road	Siempre Viva Road	4L-Major	Circulation Element (CE)	Yes
	Siempre Viva Road	Via de la Amistad	2L-I/C Collector	Specific Plan (SP)	No
Harvest Road	Sunroad Boulevard	Otay Mesa Road	4L-I/C Collector	Specific Plan (SP)	No
Lone Star Road	City of San Diego	Sunroad Boulevard	6L-Prime Arterial	Circulation Element (CE)	Yes
	Sunroad Boulevard	Siempre Viva Road	4L-Major	Circulation Element (CE)	Yes
	Siempre Viva Road	End Of Road	4L I/C Collector	Specific Plan (SP)	Yes
Otay Mesa Road[1]	City of San Diego	Enrico Fermi Drive	6L-Prime Arterial	Circulation Element (CE)	No
	Enrico Fermi Drive	Alta Road	4L-Major	Circulation Element (CE)	Yes
	Alta Road	Lone Star Road	4L-Major	Circulation Element (CE)	Yes
Piper Ranch Road	Lone Star Road	Otay Mesa Road	4L-Collector	Circulation Element (CE)	Yes
Siempre Viva Road	City of San Diego	Lone Star Road	4L-Major	Circulation Element (CE)	Yes
	Lone Star Road	End of Road	4L I/C Collector	Specific Plan (SP)	Yes
Sunroad Boulevard	Lone Star Road	David Ridge Drive	4L-Major	Circulation Element (CE)	Yes
	David Ridge Drive	Otay Mesa Road	4L-Major	Circulation Element (CE)	No
Vann Centre Blvd.	Otay Mesa Road	Lone Star Road	4L-I/C Collector	Specific Plan (SP)	No
Via de la Amistad	City of San Diego	Alta Road	2L-I/C Collector	Specific Plan (SP)	No
Zinser Road	Piper Ranch Road	Sunroad Blvd.	4L- I/C Collector	Specific Plan (SP)	Yes
	Sunroad Blvd.	Lone Star Road	2L-I/C Collector	Specific Plan (SP)	Yes
State Route 11	City of San Diego	Port of Entry	Freeway	Circulation Element (CE)	No
State Route 125	City of San Diego	City of San Diego	Freeway	Circulation Element (CE)	No

[1] If existing utility poles on Otay Mesa Road from the City of San Diego to Enrico Fermi Drive are placed under ground, a Bicycle Network Route will be required.
[2] Enhanced Major Road (CE) requires additional Right-Of-Way to accommodate turn movements and freeway access from Otay Mesa Road to SR-11.

Figure 2.2-1 Circulation Plan



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Major Roads and Local Industrial Commercial Collector Roads provide through access into the center of development areas and the Activity Nodes.

- **State Route 125 (SR-125):** SR-125 is constructed as a 4-lane freeway/toll facility from Otay Mesa Road to San Miguel Road. Future planned improvements include a connecting interchange between SR-905 and future SR-11 as well as an interchange at Lonestar Road. The Lonestar Road interchange is located in the City of San Diego, and it is part of the City's community plan for the Otay Mesa area. The future planned SR-125 improvements are currently unfunded and therefore have no projected opening date or completion target. The EIR prepared for SB 125 evaluated the Lone Star Road interchange. The developer (SBX) agreement for SR-125 requires construction of the Lone Star interchange when warranted by traffic conditions.

- **Future Border Crossing and State Route 11 (SR-11):** State Route 11 is planned as a new freeway/toll facility to extend easterly of SR-905 to connect with the future third border crossing east of Alta Road. The extension would revise the SR-905/125 interchange and provide two new interchanges at Enrico Fermi Drive and Siempre Viva Road. The State Route 11 project is currently in the environmental phase. The Environmental Document (ED) for SR 11 is expected to be a two-phase document. Phase 1 document will be programmatic-level document for SR 11 and the new Otay Mesa East Port. Phase 2 is expected to be a project-level document for SR 11 only. Construction is expected to begin in 2012, with completion in 2014. Actual funding for the remaining project has not yet been identified.

2.2.5 Local Access Road Network

To plan for future travel demand to and from as well as within East Otay Mesa, traffic forecasts were generated for build-out of the Specific Plan. The traffic forecasts incorporate the type and density of future land uses, the location and potential interaction of various land use types, as well as specific characteristics and the capacity of each of the area's future roads. The East Otay Mesa Specific Plan's roadways are forecasted to operate at an acceptable Level of Service (LOS) at buildout (EIR Addendum No. 6).

The East Otay Mesa Specific Plan is based on a hierarchy of circulation roads as designated on the County's General Plan Circulation Element, and non-Circulation

Element Local Industrial/Commercial Collectors designated on the Specific Plan as indicated in Table 2.2-1. Prime Arterial, Major and Industrial/Commercial Collector Roads provide the regional connections through the Specific Plan and beyond. Major Roads and Industrial/Commercial Collector Roads provide through access into the center of the development areas and the Activity Nodes. Figure 2.2-1, Circulation Plan, shows the road classifications and Appendix 4 shows cross-sections from the General Plan Circulation Element for portions of Otay Mesa Road, Enrico Fermi Drive and Alta Road. These classifications have been designated to serve Specific Plan build-out traffic needs. These classifications (Circulation Element and/or Specific Plan Roads) have been designated to accommodate build-out traffic volumes assessed through the preparation of traffic forecasts for the land use development pattern and circulation network identified in this plan. Implementation of this circulation network shall be through the incremental approval and eventual development of individual public and/or private projects.

It is the intent of this Specific Plan that all private discretionary projects shall be required to:

- Dedicate and improve all adjacent rights-of-way necessary to provide access to the project and to complete the Specific Plan circulation system,
- Dedicate and agree to construct, through means acceptable to the Director of Public Works, all adjacent rights-of-way necessary to further implement the Specific Plan circulation system, including where the rights-of-way do not provide direct access to the site. The purpose of this requirement is to implement the circulation system of the Specific Plan, and
- Acquire and construct (or agree to construct if acceptable to the Director of Public Works) all off-site circulation element roads necessary to provide access to the site and to ensure off-site road access will meet County standards.

The Board of Supervisors adopted a Transportation Impact Fee (TIF) program in April 2005 to facilitate mitigation of cumulative traffic impacts. The TIF program was updated in January 2008.

Principal County arterials in the circulation network are described below:

- **Otay Mesa Road:** Otay Mesa Road is shown in the City of San Diego's most recent Circulation Element for the Otay Mesa Community as a four-lane Major between the terminus of SR-905 and SR-125/Harvest Road. The County General Plan includes the road as a six-lane Prime Arterial between Piper Ranch Road and Enrico Fermi Drive. The road continues east to Lone Star Road as a four-lane Major. A cross-section of a portion of Otay Mesa Road from the General Plan Circulation Element is included in Appendix 4.

- **Lone Star Road:** In the City of San Diego Lone Star Road is classified as a four-lane Major. In the County it becomes a six-lane Prime Arterial to Sunroad Boulevard. East of Sunroad Boulevard it transitions into a four-lane Major. This roadway will carry traffic from SR-125 east into the northern portions of the Specific Plan. As Lone Star Road travels east past Alta Road, it heads south to Siempre Viva Road in SubArea 2 of the Specific Plan.

- **Airway Road, Siempre Viva Road and Via de la Amistad:** The City of San Diego's Circulation Element shows Airway Road as four-lane Major Road, Siempre Viva Road as a six-lane Prime Arterial Road and Via de la Amistad as a four-lane Collector Road. These roads continue east from Enrico Fermi Drive, a north/south Major located on the border between the City of San Diego and the County to Alta Road as four-lane Major Roads to serve SubArea 1. Airway Road and Siempre Viva Road are planned to extend east into SubArea 2 terminating at Roque Road. Via de la Amistad will continue east from Enrico Fermi Drive to Alta Road as a two-lane Industrial/Commercial Collector Road.

- **Piper Ranch and Harvest Roads:** Piper Ranch Road and Harvest Road are both north-south four-lane Collector Roads in the County of San Diego that provide access into the Specific Plan Area. Within the County of San Diego's Specific Plan Area, Piper Ranch Road is planned as a four-lane Collector Road. Harvest Road will terminate at Sunroad Boulevard as a four-lane Industrial/Commercial Collector Road.

- **Enrico Fermi Drive:** In the City of San Diego, Enrico Fermi Drive is classified as a four-lane Major Road. In the County of San Diego's East Otay Mesa Specific Plan Area, it is also planned as a north-south four-lane Major Road between

Lone Star Road and Siempre Viva Road. It continues south to Via de la Amistad as a two-lane Industrial/Commercial Collector Road. A cross-section of a portion of Enrico Fermi Drive from the General Plan Circulation Element is included in Appendix 4.

- **Alta Road:** Alta Road is planned as a north/south four-lane Industrial/Commercial Collector Road extending north from Lone Star Road. North of Lone Star Road, its main function is to provide access for planned adjacent development and to the detention facilities to the north. It is not proposed to be extended over the Otay Valley. South of Lone Star Road it is planned as a four-lane Major Road to Siempre Viva Road. Alta Road will continue south as a two-lane Industrial/Commercial Collector Road to Via de la Amistad. A cross-section of a portion of Alta Road from the General Plan Circulation Element is included in Appendix 4.
- **Sunroad Boulevard/Sanyo Avenue:** Sunroad Boulevard is classified as a Major Road between Lone Star Road and Otay Mesa Road in the County of San Diego. South of Otay Mesa Road the road is referred to as Sanyo Avenue, a four-lane collector road.
- **Calzada de la Fuente:** This road will be located entirely within the Specific Plan Area and is planned as an Industrial/Commercial Collector Road.
- **Zinser Road, Vann Centre Boulevard and David Ridge Drive:** These roads are planned as Industrial/Commercial Collector Roads between Lone Star and Otay Mesa Roads within the Specific Plan Area.

Please note that development projects in East Otay Mesa shall utilize names identified in this chapter for all Circulation Element and Specific Plan roads.

2.2.6 Road Operation

Truck Routes

Through trucks are expected to follow the Prime Arterial, Major, Collector and (non-Circulation Element) selected Local Industrial/Commercial Road street system. Due to

the industrial character of the Specific Plan Area, all streets shall be designed to accommodate truck traffic.

In order to minimize impediments for truck operation and allow access for each of the land uses in East Otay Mesa SubArea 1, the circulation network shall be designed according to the County Public Road Standards. The needs of truck traffic, access, and loading activities shall be incorporated in the design of the roadways. In addition, on-street parking shall be prohibited on all Prime Arterial, Major and four-lane Industrial/Commercial Collector public roads within the Specific Plan Area.

It should be noted that CalTrans may also designate truck only routes to accommodate the future Port of Entry.

2.2.7 Alternative Modes of Transportation

Public Transit

Public transit represents an opportunity to provide a convenient and inexpensive transportation choice for employees.

Public transit represents an opportunity to provide a convenient and inexpensive transportation choice for employees, help achieve air quality enhancement goals and reduce vehicular traffic. The development of public transportation facilities, while considered highly desirable for East Otay Mesa, will take place over a period of time. The County of San Diego will continue to work with SANDAG to extend public transit facilities into East Otay Mesa.

SANDAG is currently refining the transit network for the South Bay and once this study is complete, they expect to have a reasonably well-defined network for this area. The SANDAG Plan will include a bus rapid transit (BRT) line to serve the Otay Mesa. A 29-mile loop line would connect the existing light rail station at 24th Street in National City with the Otay Ranch area, the Otay Mesa International Border Crossing, and the Iris Street station in San Ysidro. Future developments will be required to coordinate with SANDAG and the County to ensure that transit is a consideration when planning their development. When the County Board of Supervisors adopts a Transit Plan, including development standards and route locations, all development within East Otay

Mesa shall be required to comply with that plan and its implementation including the dedication of right-of-way for light rail and/or bus facilities.

The north-south line would generally follow the SR-125 alignment to provide access between Chula Vista, Otay Ranch, and the International Border. The east-west BRT line may follow Otay Mesa Road or Airway Road and potentially continue along this road into the Specific Plan Area to the proposed third border crossing. If this should occur, then a transit station at SR-125/Otay Mesa Road interchange, a station at the border, and possibly one intervening station would be feasible.

Bicycle Network

Use of bicycles as a commuting mode of transportation is encouraged as a means to reduce traffic congestion and minimize greenhouse gas emissions. The bicycle network of East Otay Mesa is focused to safely direct bicycle traffic to and from key locations. It is the intent of the plan to link all transit, commercial, and employment locations via certain Circulation Element roads and Specific Plan roads that would allow bicycling commuters the ability to access East Otay Mesa in a direct manner. The General Plan bike routes are shown on Sheet 6 of the General Plan Circulation Element. Additional bike routes are provided in the Specific Plan.

It is likely that the vast majority of workers within East Otay Mesa will be traveling from areas outside of the Mesa, such as Otay Ranch, portions of the City of San Diego, and Chula Vista, and possibly from the International Border Crossing. To encourage bicycle use within the Specific Plan Area, a connected system of roads suitable for bicycle traffic has been designated for the Mesa. This bike network is detailed on Figure 2.2-1 and in Table 2.2-1 of the Specific Plan. The bicycle network in East Otay Mesa is composed of Class II facilities (bike lanes), and bicyclists are permitted to travel on all public roadways within the Specific Plan. The State of California, Department of Transportation publication, Planning and Design Criteria for Bikeways in California, is the bikeway standard of San Diego County. These regulations shall also apply to the East Otay Mesa Specific Plan.

The amount of projected employees in the Specific Plan Area that would take mid-day lunches and shopping trips necessitates the establishment of a pedestrian circulation and trails system that will support and encourage walking as a mode of transportation.

Pedestrian Circulation

Walking is encouraged within the East Otay Mesa Specific Plan. The amount of projected employees in the Specific Plan Area that would take mid-day lunches and shopping trips necessitates the establishment of a pedestrian circulation and trails system that will support and encourage walking as a mode of transportation. To create safe and attractive pedestrian travel, it is necessary to keep sidewalk areas free of obstructions and allow for the flow of pedestrians. Crosswalks and signal timing help reduce pedestrian/auto conflicts and improve safety conditions. Sidewalks are required on both sides of all public streets. Sidewalks shall meet the guidelines of the County of San Diego Public Road Standards except that sidewalks on all Circulation Element and Specific Plan roads shall be 4-feet wide and shall be separated from the traveled way by a 3-foot landscaped parkway (Section 2.3.5). Sidewalks shall meet the Americans with Disabilities Act (ADA) standards. The Director of Public Works may allow sidewalks to meander around existing utility poles (69kv or greater) that will not be placed underground. In limited circumstances, the Director of Public Works may waive sidewalk requirements where existing utility poles (69kv or greater) will not be placed underground if the applicant can demonstrate that no loss of pedestrian movement or connectivity would result.

Trails

Since the approval of the East Otay Mesa Specific Plan in 1994, the County adopted a Community Trails Master Plan that governs the type and location of trails throughout the unincorporated area. Trails proposed in the Specific Plan are non-motorized, multi-use trails that allow public access to natural scenic areas. Trails and pathways in East Otay Mesa shall meet the Community Trails Master Plan Design and Construction Guidelines. All development adjacent to the Otay Valley Regional Park shall improve a 10-foot wide trail for passive viewing and as a potential connection to the regional park trail system (Figure 2.2-1). The trail shall be open to the public and shall connect to a public sidewalk or an alternative location acceptable to the County.

Chapter 3

REGULATORY PROVISIONS

Chapter 3.0 Regulatory Provisions

This chapter sets forth the policies, regulatory procedures and standards for implementing the East Otay Mesa Specific Plan. The policies and regulations are premised on several objectives:

- Achieve a high quality industrial and business district through good site planning and building design;
- Protect sensitive environmental resources;
- Accommodate land uses and building types appropriate to an international industrial district;
- Coordinate development with a comprehensively planned network of regional and local roads; and
- Provide public facilities and services prior to or concurrent with need.

These policies and regulatory procedures and standards shall apply to all areas of the East Otay Mesa Specific Plan.

These policies, regulatory procedures and standards shall apply to all areas within the East Otay Mesa Specific Plan[1]. The use and employment of land, buildings or structures, and the construction, reconstruction, alteration, expansion, or relocation of any building, structure or use upon the land, shall conform to these regulations. No land, building, structure or premises shall be used for any purpose or in any manner other than as permitted in the district in which such land, building, structure, or premise is located, except as provided by the Nonconforming Use provisions of the County's Zoning Ordinance.

3.1 Land Use Regulations

Land use districts in the East Otay Mesa Specific Plan, as shown in Figure 2.1-1, include Technology Business Park, Activity Nodes (overlay), District Commercial, Commercial Center (overlay), District Commercial, Light Industrial, Mixed Industrial, Heavy Industrial, Rural Residential, and Conservation/Limited Use. It should also be

[1] The 2010 Amendment to the Specific Plan incorporated select items from Site Planning and Design Guidelines, developed for the 1994 Specific Plan.

noted that all uses shall comply with applicable portions of Section 6300 et seq. of the County Zoning Ordinance: Performance Standards. Regarding noise measurements, uses in the Activity Node, District Commercial and Commercial Center shall comply with Section 6310.b; uses in the Technology Business Park shall comply with Section 6310.c; uses in the Light Industrial areas shall comply with Section 6310.d; uses in the Heavy and Mixed Industrial areas shall comply with Section 6310.e; and uses in the Rural Residential and Conservation/Limited Use areas shall comply with Section 6310.b.

The *Technology Business Park District* is intended to accommodate research and development as well as manufacturing of goods and materials associated with emerging industries in San Diego County.

Activity Nodes are intended to create a focal point for daily operations and employee needs within East Otay Mesa. Development standards requiring pedestrian oriented designs will help create a sense of place, unique to East Otay Mesa and the proposed Technology Business Park development.

The *Landfill Buffer Overlay* is intended to identify areas where land use conflicts may occur due to an adjacent landfill. The overlay is located 1,000 feet from the edge of the landfill boundary, which also forms the southeastern boundary of the East Otay Mesa Specific Plan. Two land use designations – Mixed Industrial and Rural Residential – are located within the Landfill Buffer Overlay. Processing requirements and use restrictions are described in Table 3.1-1 (and footnote 16) as well as Section 3.3.5, which describes processing requirements for development within the overlay.

The *Commercial Center overlay* is intended to accommodate an appropriate range of retail goods and services for the employee population and bi-national traffic.

The *District Commercial* designation is intended to accommodate an appropriate range of retail goods and services intended to serve a 1 to 2 mile trade area. Only one 10-acre parcel on the northeast corner of Alta Road and Otay Mesa Road is located in this district.

The *Light Industrial Use District* is intended to accommodate general industrial plants primarily engaged in manufacturing.

The *Heavy Industrial Use District* is intended to accommodate all of the uses allowed in the Technology Business Park and Light Industrial Districts plus recycling and salvage uses.

The *Mixed Industrial District* is intended to accommodate industrial plants that primarily engage in the manufacturing, compounding, processing, assembling, packaging, treatment, warehousing, or fabrication of materials and products. Support commercial uses are permitted within Mixed Industrial areas. They may be incorporated within industrial structures or located in a separate structure on the industrially zoned land. Support commercial development is limited to a maximum of five percent (5%) of the gross acreage for industrial parcels, and it should be clustered at intersections or located within the interior of industrial developments. The 5% allocation for support commercial use may be transferred from one parcel to another parcel in Mixed Industrial areas (only), provided that the maximum amount of commercial use does not exceed 10% of the gross acreage of any one parcel being utilized for Support Commercial development. Traffic impacts related to the transfer of commercial use shall be evaluated during Site Plan reviews.

The *Rural Residential* designation is intended for very low-density residential use on land generally unsuitable for intensive development. This designation is applied to areas of the Specific Plan (former Subarea 2) containing steeper slopes and possible significant biological resources. Density is limited to 1 dwelling unit per 20 acres. Rural residential areas with steep slopes and biological resources are given a "G" Designator, are subject to the Sensitive Resource Area Regulations of the Zoning Ordinance (which require a Site Plan Review Process), and require a Resource Conservation Plan approved by the County prior to any development including clearing or grading. Clustering is strongly encouraged in Rural Residential areas.

The *Conservation/Limited Use* designation is applied to areas of the Specific Plan containing steeper slopes and possible significant biological resources.

The "G" Designator was established to ensure that environmentally sensitive areas are appropriately protected. Parcels with a "G" Designator shall comply with the County Zoning Ordinance Sensitive Resources Area Regulations Sections 5300 – 5307. In addition, the Specific Plan requires the preparation of a Resource Conservation Plan for all parcels with the "G" Designator.

Table 3.1-1 identifies permitted and conditionally permitted land uses by district. Similar to the County Zoning Ordinance, the Specific Plan specifies permitted uses (P), uses subject to a Minor Use Permit (m), uses subject to a Major Use Permit (M). Where the box is blank, use is not permitted. Also included are interim uses (I) that are allowed only by a Major Use Permit to be issued or renewed for up to five years, only with the finding that "a reasonable projection of market demand indicates that it is unlikely that any allowed permanent use (approved or in house for processing) will be sited within five years that would be negatively impacted by the Interim Use.

In Table 3.1-1, the number in parentheses following each use refers to the use classification described in the County Zoning Ordinance, Sections 1200 through 1899. These sections of The Zoning Ordinance describe the land uses in more detail. The following uses are specifically prohibited in that portion of the East Otay Mesa Specific Plan previously known as SubArea 1:

- Manufacturing or storage of explosives;
- Permanent storage of toxic waste;
- Cemeteries;
- Animal Auctioning;
- Stockyards;
- Animal rendering plants; and
- Mining and processing.

All proposed development in East Otay Mesa shall require approval of a Site Plan, described in Section 3.3.1 of this Specific Plan, unless a Major Use Permit or other discretionary permit has already addressed the criteria set forth in this Specific Plan or was approved prior to the adoption of this Specific Plan Amendment. The Site Plan requirement shall not apply to the development or improvement of new or existing County parks.

Table 3.1-1 Land Use Matrix[1]	San Diego County Zoning Ordinance Nos.	Technology Business Park			District Commercial	Industrial Use Types			Rural Residential	Conservation Area
		Technology Business Park	Activity Node (per Section 3.3.2)	Commercial Center (Overlay- per Section 3.3.3)		Light Industrial	Heavy Industrial	Mixed Industrial		
1. CIVIC USE TYPES										
Administrative Services	(1310)	P	P	P	M	P	(m)	(m)(16)		
Ambulance Services	(1315)	P			M	P	P	P (16)		
Clinic Services	(1320)	P	P	P	M	P	M	M (12, 16A)		
Community Recreation	(1325)	P	P	P		P			M	
Cultural Exhibits and Library Services	(1330)	P	P	P	M	P	(m)	(m) (16A)	M	
Child Care Center	(1332)		M	M	P					
Essential Services	(1335)	P	P	P	P	P	P	P (16)	P (16)	P
Fire Protection Services	(1340)	P	P	P		P	P	P (12, 16)	P (16)	
Law Enforcement Services	(1346)	P	P	P		P	P	P (16)		
Lodge, Fraternal and Civic Assembly	(1348)	M	P	P	M	M	M	M (16A)		
Major Impact Services and Utilities	(1350)	M(9)	M(9)	M(9)	M	M(9)	M	M	M	
Minor Impact Services and Utilities	(1355)	P	P	P	P	P	P	P (16)	(m)	
Parking Services	(1360)	P	P	P	P	P	P	P (16)		
Postal Services	(1365)	P	P	P	M	P	P	P(16)		
Small Schools/Trade Schools	(1375)	M	M	M		(m)	(m)	(m) (16)		
2. COMMERCIAL USE TYPES										
Administrative and Professional Services	(1410)	P	P	P	P(10)	P	P (12)	P (12, 16)		
Agricultural and Horticultural Sales	(1415)									
a) Agricultural Sales		I		P(2)	P	I	I	I (16A)		
b) Horticultural Sales		I		P	P	I	I	I (16A)		
Agricultural Services	(1420)	I			P(13)	I	I	M		
Animal Sales and Services	(1425)									
b) Grooming				P		I				
c) Horse Stables						I	I	I (16A)		
d) Kennels						I	I	I (16A)		
e) Veterinary – Large Animals							P (12)	P (12,16)		
f) Veterinary – Small Animals			P	P			P (12)	P (12,16)		

Table 3.1-1 Land Use Matrix[1]	San Diego County Zoning Ordinance Nos.	Technology Business Park			District Commercial	Industrial Use Types			Rural Residential	Conservation Area
		Technology Business Park	Activity Node (per Section 3.3.2)	Commercial Center (Overlay- per Section 3.3.3)		Light Industrial	Heavy Industrial	Mixed Industrial		
Automotive and Equipment	(1430)									
a) Cleaning				P(2)	P(13)	P(2)	P(2)	P(2, 16)		
b) Fleet Storage		I(2)				P(2)	P(2)	P(2, 16)		
c) Parking		I(2)			P	P(2)	P(2)	P(2, 16)		
d) Repairs (Heavy Equipment)					P (13)	I(2)	P(2)	P(2, 16)		
e) Repairs (Light Equipment)				P(2)	P (2)	I(2)	P(2)	P (2,16)		
f) Sales Rentals (Heavy Equipment)		I(2)			P(2)	I(2)	P(2)	P(2, 16)		
g) Sales Rentals (Farm Equipment)		I(2)			P(2)	I(2)	P(2)	P(2, 16)		
h) Sales Rentals (Light Equipment)		I(2)		P(2)	P(2)	I(2)	P(2)	P(2, 16)		
i) Storage (Non-Operating Vehicles)		I(3)			M		M	M		
j) Storage (Recreational Vehicles and Boats)		I			M		P(2)	P(2)		
Building Maintenance Services	(1435)	P(2)	P (2)	P(2)	P	P(2)	P (12)	P (12, 16)		
Business Equipment Sales and Service	(1440)	P	P	P	P	P	P (12)	P(12, 16)		
Business Support Services	(1445)	P	P	P	P	P	P (12)	P(12, 16)		
Communications Services	(1450)	P	P	P	P	P	P (12)	P(12, 16)		
Construction Sales and Services	(1455)	P(2)	-	P(2)	P (13)	P(2)	P	P (16)		
Convenience Sales and Personal Services	(1460)	P	P	P	P (14)	P	P (12)	P (12, 16)		
Eating and Drinking Establishments	(1465)	P(5)	P(4)	P	P(4)	P(5)	M (5)	M (5,16A)		
Financial, Insurance and Real Estate	(1475)	P	P	P	P (4)	P	P (12)	P (4,12,16)		
Food and Beverage Sales	(1480)	P(5)	P	P	P (12)	P(5)	P(5)	P (5,16)		
Funeral and Internment Services	(1485)									
a) Cremating					M		M	M		
c) Undertaking							P	P (16)		
Gasoline Sales	(1490)	P(6)		P(6)	P (6)	P(6)	P(6, 12)	M (6. 12)		
Laundry Services	(1495)		P	P	P			P(12,16)		

Table 3.1-1 Land Use Matrix[1]	San Diego County Zoning Ordinance Nos.	Technology Business Park			District Commercial	Industrial Use Types			Rural Residential	Conservation Area
		Technology Business Park	Activity Node (per Section 3.3.2)	Commercial Center (Overlay- per Section 3.3.3)		Light Industrial	Heavy Industrial	Mixed Industrial		
Medical Services	(1500)	P	P	P						
Participant Sports and Recreation	(1505)									
a) Indoor		P (12)	P	P	P	P	P (12)	P (12,16)		
b) Outdoor		M		M	M	M	M	M (12,16A)	M	
Personal Services	(1510)	P	P	P		P				
Recycling Collection Center	(1512)									
a) Small (7)			P	P	P	P	P	P(16)		
b) Large (7)					P		P	P(16)		
Recycling Processing Facility	(1513)									
a) Light (8)							M	M (16)		
b) Heavy (8)							M	M		
c) Wood and Green Materials, Light (8)							M	M		
d) Wood and Green Materials, Heavy (8)							M	M		
Repair Services	(1515)	P	P	P	P	P	P (12)	P (12,16)		
Research Services	(1520)	P	P	-		P	P	P (16)		
Retail Sales	(1525)									
a) General		P(5)	P	P	P			M (12, 16)		
b) Specialty		P	P	P	P	P	M(5)			
Scrap Operations	(1530)						P	M		
Spectator Sports and Entertainment	(1535)									
a) Limited		I		P	M	(m)	M (12)	M (12)		
b) General				M	M	M	M	M		
Swap Meets	(1540)	I				I	I	I		
Transient Habitation	(1545)									
a) Campground										M
b) Lodging		M	M	P	P (11)					
c) Resort										M

Table 3.1-1 Land Use Matrix[1]	**San Diego County Zoning Ordinance Nos.**	**Technology Business Park**			**District Commercial**	**Industrial Use Types**			**Rural Residential**	**Conservation Area**
		Technology Business Park	**Activity Node (per Section 3.3.2)**	**Commercial Center (Overlay- per Section 3.3.3)**		**Light Industrial**	**Heavy Industrial**	**Mixed Industrial**		
3. **INDUSTRIAL USE TYPES** (9)										
Wholesale Storage and Distribution	(1550)									
a) Mini Warehouse					P (17)	P	P	P (16)		
b) Light		P(2)		P(2)	P (17)	P	P	P (16)		
c) Heavy					P (17)	P	P	P (16)		
Custom Manufacturing	(1610)	P	P	P	P (17)	P	P	P (16)		
General Industrial	(1620)	P			P (17)	P	P	P (16)		
4. **AGRICULTURAL USE TYPES**										
Horticultural	(1710)									
a) Cultivation		I				I	I	I (16)		
b) Storage		I				I	I	I (16)		
Tree Crops	(1715)	I				I	I	I (16)		
Row and Field Crops	(1720)	I				I	I	I (16)		
Packing and Processing	(1735)									
a) Limited						P	P	P (16)		
b) Winery						P	P	P (16)		
c) General						P	P	P (16)		
d) Support						P	P	P (16)		
5. EXTRACTIVE USE TYPES										
Site Preparation	(1820)	M			M	M	M	M (12)		
Extractive Use	(6550-6557)							M (15)	M (15)	
6. **RESIDENTIAL USE TYPES**	(1260)									
Family Residential: Density = 1 du/20 acre									P (16A)	

Symbol Key:

P = Permitted Use by Right
I = Interim Use (Major Use Permit Required; Initial 5 Years; additional 5-year increments by Major Use Permit Modifications)
(m) = Minor Use Permit
M = Major Use Permit
Blank = Not Permitted

Land Use Matrix Footnotes

1. Accessory uses, as defined by The Zoning Ordinance Section 6156 et seq., customarily associated with, and appropriate, incidental and subordinate to the principal use shall be permitted in all districts. The Director of Planning and Land Use shall determine whether the proposed accessory use qualifies as an accessory use, and said determination is subject to appeal pursuant to Section 7200 of the County of San Diego Zoning Ordinance.
2. All operations, including storage of materials, shall be enclosed (within a building or within a solid fence or wall, minimum six feet in height). (Note 13 shall apply when the Zoning Ordinance requires enclosed buildings for specific uses.)
3. One auto auction was legally established prior to amendment of this Specific Plan. That interim use may be renewed for up to 5 years at a time if the finding can be made that a "reasonable projection of market demand indicates that it is unlikely that permitted uses in the Technology Business Park will be established in the time period for which the renewal is authorized."
4. Drive-through only permitted with a Major Use Permit.
5. Eating and Drinking Establishments, Food and Beverage Retail Sales and General Retail Sales in areas outside of the Activity Nodes or Commercial Center are allowed as accessory to the main use.
6. Gasoline Sales use type as defined per The Zoning Ordinance, are limited to sites located at the intersection of Prime Arterials and Collector Streets and Major Roads and Collector Streets.
7. Uses shall comply with Section 6970 of the County Zoning Ordinance: Recycling Collection Facility.
8. Uses shall comply with Section 6975 of the County Zoning Ordinance: Recycling Processing Facility.
9. Transit center allowed by right; all others require Major Use Permit.
10. Office space must be less than 100,000 square feet, otherwise a Major Use Permit is required.
11. A Major Use Permit is required for more than 100 rooms (lodging).
12. Support Commercial only; can occupy a maximum of 5% of an industrial parcel (see transfer limits, page 85).
13. All operations, including storage of materials, shall be entirely within an enclosed building.
14. Maximum of one establishment.
15. Extractive use was permitted with a Major Use Permit (MUP) by previous Subarea 2 language; that provision is retained for Subarea 2, which includes Mixed Industrial and Rural Residential. Specific Plan conformance, MUP findings, and (in some areas) a Major Amendment to the MSCP shall be required for the MUP. Extractive use remains prohibited outside previous Subarea 2. For surface mining, see Chapter 7 (Sections 87.701 and 87.714) of the Grading Ordinance.
16. See section 3.3.5 for processing requirements within the Landfill Buffer Overlay. Uses labeled (16A) are prohibited within the Landfill Buffer Overlay.
17. See Policy LU-5. Development should meet Site Plan and design review criteria for future commercial use. If Heavy Industrial, General Industrial or Custom Manufacturing use is proposed within a designated commercial area (District Commercial, Commercial Overlay), then Civic and Commercial uses are subject to same limitations as Heavy Industrial.

3.2 Development Standards

The Development Standards apply to all parcels and serve as criteria for the review of all proposed development.

The Development Standards, key implementation tools for the East Otay Mesa Specific Plan SubArea 1, shall apply to all parcels and serve as criteria for the review of all development including interim uses. These Standards will accomplish the following:

- Administration through a Site Plan Permit or other discretionary permit;
- Creation of industrial and business parks with strong identities and a place of distinction and quality;
- Establishment of criteria to create cohesive, visually unified industrial and business centers;
- Assurance of a compatible interface with the proposed Otay Valley Regional Park that enhances both the industrial development as well as the nearby Regional Park;
- Establishment of tools necessary to implement the goals and objectives of the Specific Plan; and
- Implementation of mitigation measures identified in CEQA documents prepared for the Specific Plan.

If not otherwise specified herein, requirements of the County Public Road Standards, County Off Street Parking Manual, County Water Conservation in Landscaping Ordinance and Design Manual, County Grading Ordinance, and County Dark Sky Ordinance

The Development Standards are intended to allow design flexibility under the premise that several design solutions can ultimately achieve a stated goal.

The intent of this section is to create a user-friendly, quick reference, in table format, that contains pertinent information for various design professionals that will be implementing the Specific Plan through development proposals. The desired result is to assist the applicant in preparing complete comprehensive submittals that can be readily reviewed by County staff. Section 6250 of the County Zoning Ordinance shall regulate On-Premise Signage. Development Standards are broken into three main areas as follows:

- Site Planning
- Landscaping
- Architectural

If not otherwise specified herein, requirements of the County Public Road Standards, County Off-Street Parking Manual, County Water Conservation in Landscaping Ordinance Design Manual, County Grading Ordinance, County Subdivision Ordinance, and County Dark Sky Ordinance shall apply to both permanent and interim uses. Where there are conflicting requirements, those included in this Specific Plan shall apply.

3.2.1 Site Planning

All permanent development in the Specific Plan Area shall comply with the Site Planning Standards.

Table 3.2-1 sets forth specific standards and requirements for Site Plan design and for development. Many of the standards apply to all of the land uses allowed in the Specific Plan Area, and others apply only to a specific type of land use. All permanent development projects in the Specific Plan Area shall comply with the Site Planning Standards. Interim uses shall also comply with the Site Planning Standards with the exception of type of structure, which is limited by The Zoning Ordinance. The Site Plan requirement does not apply to the development or improvement of new or existing County Parks.

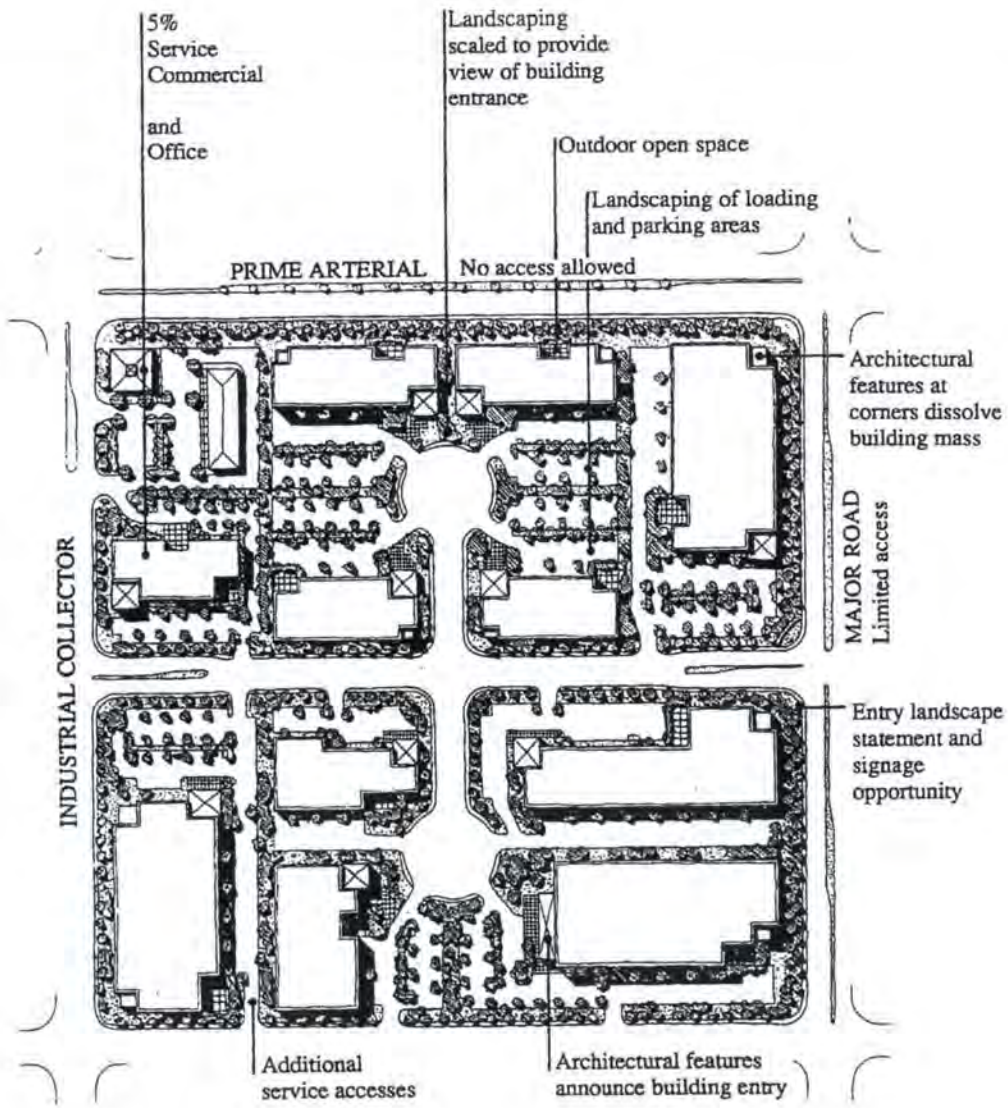
The Site Planning Standards (Table 3.2-1) addresses the following:

- Use, Intensity and Bulk Requirements
- Site Access
- Parking
- Grading
- Building Orientation
- Usable Open Spaces
- Service Areas
- Fencing, Walls and Hedges
- Lighting

The entire Specific Plan is subject to a B Special Area Designator, requiring the preparation of a Site Plan, and areas shown on Figure 3.2-11 are also subject to a G Special Area Designator. The only exception is rural residential development located areas designated as Rural Residential.

The 2010 Amendment to the Specific Plan incorporated select site planning guidelines and standards from the Site Planning and Design Guidelines prepared for the 1994 Specific Plan. The drawing on the following page, Figure 3.2-1, demonstrates how the Site Planning Standards could be applied in a typical situation.

Figure 3.2-1 Illustrative Site Plan



When processing a subdivision in East Otay Mesa, a conceptual layout should be submitted early in the permitting process to demonstrate that the proposed subdivision can accommodate industrial development that meets site planning standards of the Specific Plan.

Table 3.2-1: Site Planning Standards: Use, Intensity and Bulk Regulations

Regulations	Technology Business Park	Light Industrial	Heavy Industrial	Activity Node	Commercial Center	District Commercial	Mixed Industrial	Rural Residential (9)	Conserva-tion/ Limited Use
Use Regulations	S88	S88	S88	S88	S88	S88	S88	S88	S88
Minimum Lot Size	30,000SF	30,000SF	30,000SF	4,000SF	10,000SF	10,000 SF	30,000 SF	20 AC (9)	1 AC
Building Type	W	W	W	W	W	W	W	B	W
Floor Area Ratio	.5 / 1.0 (8)	.5	.5	1.0	1.0	.25	.40	N/A	.35
Max. Building Height (5)	150 feet	100 feet	60 feet	150 feet	35 feet	60 feet	60 feet	25 feet	25 feet
Max. Building Coverage	.40	.50	.50	.50	.50	.25	.40	N/A	.25
Min. Building Setbacks	Streets (6):								
Prime Arterial Road	25 ft.	25 ft.	25 ft.		20 ft.	25 ft.	25 ft	60 ft (front yard setback)	25 ft.
Major Road	20 ft.	20 ft.	20 ft.		20 ft.	20 ft.	20 ft.		25 ft.
Industrial/Commercial Collector Road (4-Lane)	20 ft.	20 ft.	20 ft.	5 ft.	20 ft.	20 ft.	20 ft.		25 ft.
Industrial/Commercial Collector Road (2-Lane)	10 ft.	10 ft.	10 ft.	5 ft.	15 ft.	15 ft.	10 ft.		15 ft.
Min. Building Setbacks	***Yards** (7):*								
Interior Side Yard	10 feet to 30 feet, and sum of interior yards shall equal at least 30'; 50' from top of slope if adjacent to the Otay Valley Regional Park			0 feet	20' for buildings & 15' for parking and driveway. (see note 1).	15 feet	15 feet	15' Side 35' Exterior	20 feet
Rear Yard	5 feet	5 feet	5 feet	5 feet	5 feet			25'	5'
Enclosures	Outdoor storage with screening per Development Standards (Fencing, Walls and Hedges)			Outdoor storage prohibited (2)	Outdoor storage prohibited (3)				Outdoor storage with screening (4)
Animal Regulations	D	D	D	D	D	D	D	D	D

Site Planning Matrix Footnotes:

Note 1: Shared driveways will not require an interior yard setback.

Note 2: Except weekend sidewalk sales

Note 3: Except for display and sale of landscape items and seasonal items.

Note 4: Per Development Standards.

Note 5: FAA regulations related to Brown Field may result in reduced height limits in some locations. FAA review is required for most development permits in East Otay Mesa.

Note 6: Measured from edge of right-of-way

Note 7: Measured from property line.

Note 8: 1.0 FAR when within 1,250 feet of Activity Node; 0.5 FAR when located more than 1,250 feet from Activity Node

Note 9: Rural Residential has a "C" setback designator (see Zoning Ordinance, Section 4810), building type B, height C. For clustered development: (a) setbacks will be established during Site Plan review, (b) at least 40% of the project must be in permanent open space, and (c) the minimum parcel size is 20,000 SF or less.

Symbol Key:

W: Non-residential, attached or detached, same lot or separate lot.

D: See Designator "D" of the Animal Schedule of the County Zoning Ordinance, Section 3100.

TABLE 3.2-1
Site Planning Standards

	All Land Use Designations
	SITE ACCESS
Prime Arterials	▪ Controlled intersections are the preferred access points for roadways classified as Prime Arterials. Direct property access via private driveways shall be limited (per County Road Standards).
Major Roads	▪ Driveway cuts permitted wherever street intersections would otherwise be allowed (separation of 300 feet, per County Road Standards) and shall be right-in and right-out only with no median cuts for driveways permitted. If additional driveways are proposed, shared driveways should be utilized where feasible to minimize curb cuts on Circulation Element and Specific Plan roads.
Collector Roads	▪ Driveway cuts permitted wherever street intersections would otherwise be allowed (separation of 300 feet, per County Standards). If additional driveways are proposed, shared driveways should be used where feasible to minimize curb cuts on Circulation Element and Specific Plan roads.
Specific Plan Roads and Local Streets	▪ Where frontage is less than 150 feet, one curb cut is permitted. ▪ Where frontage is 150 to 200 feet, 2 curb cuts are permitted. ▪ Where frontage is greater than 200 feet, 1 curb cut is permitted every 100 feet (round up at 250 feet or more).
Driveway Width	▪ 40 foot maximum; 30 foot maximum in Activity Nodes; 60 foot maximum for tandem driveways.
Curb Radius	▪ Refer to County Road Standards ▪ Driveways may be increased to 30 foot radius for truck traffic
Driveway Spacing	▪ Provide 60 feet or more between driveways per lot, but the number of driveways shall be limited by street frontage allowance. ▪ Provide 15 feet or more from the interior property line, except for shared driveways where no interior yard setback is required from the property line. ▪ Provide 30 feet or more from the end of curb radius. ▪ Driveway spacing less than 200 feet shall require a design modification approved by the Director of Public Works ▪ Driveways should be located to minimize interference with required street tree spacing on Circulation Element and Specific Plan roads.
Transit Planning	▪ Bus pullouts at transit stops needs shall be reviewed by MTDB and may be required on all Prime Arterials

TABLE 3.2-1
Site Planning Standards

	All Land Use Designations
	and Major Roads. ▪ The Commercial Center shall accommodate transit facilities to the satisfaction of the County and in coordination with MTDB. ▪ When the County Board of Supervisors adopts a Transit Plan, including development standards and route locations, all development within East Otay Mesa shall be required to comply with that plan.
Pedestrian Circulation	▪ Provide pedestrian walkways that link building entries to sidewalks located within public rights-of-way (pedestrian connections should meet ADA and California Accessibility standards). ▪ When more than one building is located on a development parcel, provide pedestrian walkways that link together building entries (pedestrian connections should meet ADA and California Accessibility standards). Minimize conflicts between vehicular and pedestrian circulation within the development parcel.
Site Plan Coordination Between Separate Commercial Properties	▪ Circulation: Major site access points, curb cut locations, and parking lot layouts shall be coordinated with adjacent properties through the Site Plan review process to facilitate vehicular and pedestrian circulation throughout commercial shopping areas. Curb cuts on collector roads shall also be coordinated with the planned curb cuts across the street to create four-way intersections. Parking lot layouts shall be closely coordinated with adjoining commercially zoned properties to maximize ease of vehicular circulation, through shared driveways and access, where feasible. ▪ Reciprocal Access Easements: Reciprocal access easements are encouraged for adjoining commercially zoned properties to allow for efficient circulation and parking between separate commercial properties, i.e., pedestrians and vehicles should be able to access adjacent commercial properties without exiting onto a public street to re-enter an adjoining commercial property where feasible.

TABLE 3.2-1
Site Planning Standards

	All Land Use Designations
	PARKING
Number Required *Also see Multiple Uses below.*	**Storage and Warehouse Uses:** ▪ 1 space per 1,000 square feet of gross floor area (SF/GFA) plus 1 space for each vehicle used in conjunction with the use. ▪ 1 bicycle space for every 10 parking spaces, but not less than 3 spaces
	Industrial Uses: ▪ Up to 100,000 gross square feet 2.5 parking spaces per 1,000 SF/GFA plus 1 space for each vehicle used in conjunction with the use. ▪ 100,000 gross square feet or more 2 parking spaces per 1,000 SF/GFA plus 1 space for each vehicle used in conjunction with the use. ▪ 1 bicycle space for every 10 parking spaces
	Support Office / Commercial Uses: ▪ 25,000 gross square feet or less: 4 parking spaces per 1,000 SF/GFA ▪ Greater than 25,000 gross square feet: 3.3 parking spaces per 1,000 SF/GFA • 1 bicycle space for every 10 parking spaces • When more than 10 percent of the gross floor area of a support commercial use is devoted to eating and drinking establishments, the parking requirements are as follows: 10-25 percent: 10 parking spaces per 1,000 SF/GFA Over 25 percent: 12 parking spaces per 1,000 SF/GFA

TABLE 3.2-1
Site Planning Standards

	All Land Use Designations
Number Required	**All Other Uses:** ▪ Refer to County Parking Requirements, Section 6750 of County Zoning Ordinance and Off Street Design Manual except as noted below. ▪ Detention and correction institutions 100,000 gross square feet or more (San Diego County Zoning Ordinance 1350) located in the Heavy Industrial land use designation: 1 space per 1,000 SF/GFA ▪ On-street parking prohibited on Prime Arterials, Major Roads or four-lane Collector Roads. ▪ On-street parking (parallel only) permitted on local streets. **Multiple Uses:** ▪ In cases where multiple uses are located within a building or on a lot, the total requirements for off-street parking facilities shall be the sum of the requirements for the various uses computed separately. ▪ Off-street parking facilities for one use shall not be considered as providing parking facilities for any other use except as specified in the Zoning Ordinance for joint use parking facilities. **All Uses:** When processing a Major Use Permit for specialized businesses, parking standards may be modified when adequate evidence is supplied that supports the proposed parking standard. Reduced parking standards are limited to the life of the Major Use Permit and cannot be transferred. **Speculative Development**: Speculative industrial or commercial development may establish an overall parking ratio, based on assumptions about ultimate use, provided that a subsequent permit is obtained by the ultimate user that verifies parking provisions do meet the requirements of this Specific Plan.
Location	▪ Off street parking prohibited in landscape setback areas. ▪ In Activity Nodes, off street parking prohibited between building and street right-of-way. ▪ In Activity Nodes, off street parking permitted on non-street side of building.
Screening	▪ Commercial truck parking lots are not permitted unless screened from views from all public rights-of-way. Provide screening using landscaped berms (maximum four-foot tall), fencing, landscaping and/or buildings that block views to the parking lot from the public rights-of-way. When truck parking is elevated due to topography, evidence shall be supplied demonstrating that adequate screening is provided.

TABLE 3.2-1
Site Planning Standards

	All Land Use Designations
	▪ Chain-link fencing is prohibited except for specific circumstances identified in the following section: "Fencing, Walls & Hedges – Materials". ▪ Parking areas located within or adjacent to the Otay Valley Regional Park FPA shall be screened from the Park by native landscaping. In addition, views from the Park as well as the regional trail system should be considered when identifying screening requirements for such parking areas.
Interim Use Truck Parking	▪ Disintegrated granite may be used as a surface material for truck parking in appropriate locations, subject to approval by the Director, Department of Public Works.
	GRADING
General *See page102 for Rural Residential and Conservation / Limited Use.*	▪ Grading shall conform to the County's Grading Ordinance or as specified in this Specific Plan (the more restrictive would apply). The maximum slope shall not exceed 2:1, although a slope of 3:1 should be used whenever feasible. Existing and/or rough graded slopes in excess of 3:1 should be regraded to provide the same general effect by rounding and rolling the tops and toes of slopes. Where turf grass is planned, the maximum slope shall be 5:1. ▪ The amount of grading should be minimized. Where there is a significant slope across the site, terraced grading for building pads should follow the natural topography of the site except where large industrial buildings are anticipated. Whenever feasible, use contoured slopes and/or landscaping to minimize visual impacts on slope banks that exceed 20 feet. ▪ Adjacent building pads: The elevation difference between adjacent building pads should not exceed 30 feet. Retaining walls and bench cuts should not be used to circumvent the limits on slope banks. ▪ Pads and adjacent public road(s): The elevation difference between a building pad and an adjacent public road is limited to 30 feet when the pad is located below a public road and to 20 feet when the pad is located above the public road. No standard is set for limited circumstances where the elevation difference is the result of the natural topography of the land, the planned alignment of the road and/or the requirements of public road standards (the primary example is Lone Star Road.) ▪ Along the boundaries of areas designated for industrial or commercial use (and those designated for Rural Residential or Conservation/Limited Use) within the Specific Plan, avoid the appearance of manufactured slopes. New slopes should be contoured to blend into the natural topography and support plant material matching the existing native vegetation. (See figure 3.2-2) ▪ The maximum slope gradient for cut or fill slopes is 2:1, per the County's Grading Ordinance.

TABLE 3.2-1
Site Planning Standards

	All Land Use Designations
Retaining Walls	▪ Limit the use of retaining walls, and locate them only where they are not likely to be damaged by vehicles and where they are separated from any road surface by at least 5 feet of landscaping. ▪ Minimum horizontal separation between walls is 4 feet. ▪ Minimum distance to street right of way 10 feet, landscaped to include minimum five-gallon shrubs to achieve a 3-foot tall height at maturity. Shrubs shall be located between street right-of-way and wall at a ratio of 4 per 20 linear feet. ▪ Permitted materials: stone, stucco, cast stone, split-face CMU, brick, poured-in-place concrete, brick block, keystone. ▪ Timber retaining walls are prohibited. ▪ Walls of buildings are permitted to act as retaining walls, subject to all applicable building codes.
Drainage Control	▪ Stormwater management and drainage shall be designed to meet County ordinances and State and National Pollutant Discharge Elimination System (NPDES) permit requirements. ▪ Volume for all storage facilities shall be designed according to maximum anticipated buildout.

TABLE 3.2-1
Site Planning Standards

	All Land Use Designations
Conservation Areas and Adjacent to Otay Valley Regional Park and Johnson and O'Neal Canyons	▪ Grading within Rural Residential and Conservation/Limited Use areas shall be limited, with heights between building pads (and roads) limited to 15 feet. ▪ Projects located within or adjacent to the Otay Valley Regional Park shall be designed to minimize the visual impact of grading to the Park. ▪ Grading into Johnson and O'Neal Canyons shall be restricted. Grading plans for properties adjacent to Johnson Canyon shall incorporate erosion control devices that are put in place prior to construction. ▪ Grading or temporary stockpiling of excess fill in canyons is prohibited. ▪ Daylight cut conditions are required on the edge of Johnson and O'Neal canyons. ▪ Fill slopes shall be planted with non-invasive native plant material similar/compatible with the adjacent areas. ▪ Retaining walls and terrace building pads at the canyon edge are prohibited. Note 1: Policies above related to Johnson and O'Neal Canyons primarily apply to those portions of the canyons located in areas designated as Rural Residential in the original (1994) Specific Plan. Those areas are currently designated as Rural Residential or Conservation / Limited Use.
	BUILDING LOCATION AND ORIENTATION
General Principles	▪ Development should be sited to produce a consistent relationship of buildings to public streets. This can be accomplished by providing consistent building setbacks, by orienting building entries to the street or to interior courtyards in a consistent manner, and by locating buildings at the corner of a site when it is located next to a public street intersection. ▪ In development complexes of more than one building, buildings should be organized around courtyards, or grouped in compact clusters, to create coherent and useful outdoor spaces with shelter from wind or sun. ▪ Outdoor areas created as a result of building locations should have clear, recognizable shapes that reflect careful planning and are not simply left-over areas between buildings. Central courtyards, entry courts, plazas and enclosed gardens are examples of useful spaces between buildings. Use landscaping, low walls, benches and other elements to improve their visual appearance and provide shade and sitting areas for pedestrians.
Accessibility	▪ Primary and ground floor building entrances shall orient to plazas or pedestrian sidewalks. ▪ Walkways to transit stops shall be landscaped with canopy trees, minimum one 24" box tree / 30 lineal feet

TABLE 3.2-1
Site Planning Standards

	All Land Use Designations
	of walkway. ▪ Buildings in Activity Nodes shall be oriented toward the street that they front.
Adjacent to Otay Valley Regional Park	▪ Open space areas within development located adjacent to the Park should maximize setback of structures from the Park. ▪ Buildings shall be sited so as to maximize views to the Otay Valley Regional Park while maintaining 50-foot setback from top of slope. ▪ All development adjacent to the Otay Valley Regional Park shall improve a 10-foot wide trail for passive viewing and as a potential connection to the regional park trail system. The trail shall be open to the public and shall connect to a public sidewalk or an alternative location acceptable to the County. ▪ Window walls shall be oriented to the park.
	USABLE OPEN SPACE
Screening	▪ Ground level open space shall include minimum 4' tall (at maturity) screening from abutting parking by dense landscaping, or masonry fence or wall, either solid or semi-opaque. Chain link fencing is prohibited except for specific circumstances identified in the following section: "Fencing, Walls & Hedges – Materials". ▪ When adjacent to plazas and courtyards, views to trash dumpster areas, equipment or storage areas, and loading docks shall be screened utilizing material compatible with the adjacent building and integrated into building architecture.
Location	**Industrial and Commercial:** ▪ All plans shall designate a location(s) on-site for employee passive or recreational activity. This area shall be screened from parking and traffic and shall be improved with benches and shade structures. The slope of a usable open space shall not exceed two percent. ▪ Usable open space should be accessible to all buildings on the lot or building site. ▪ For purposes of satisfying this requirement, outdoor passive or recreational areas of not less than 2,000 square feet in area shall be provided for each 10 acres of development area. The outdoor areas may occur as one large area serving several lots as identified on the site plan or subdivision map. Within an Activity Node, a plaza may satisfy this requirement. ▪ Where more than one building is located on a site, buildings shall be organized around or designed to create courtyards or outdoor spaces, unless this is precluded by the primary use of the facility, such as

TABLE 3.2-1
Site Planning Standards

	All Land Use Designations
	truck loading docks (see Figures 3.2-1 and 3.2-3). ▪ Spaces between buildings shall include entry courts, defined plazas, lunchtime retreats, or formal and informal gardens, unless this is precluded by the primary use of the facility, such as truck loading docks. ▪ Planting, low walls and fences shall enclose one or more sides of an outdoor space. A minimum of 200 square feet of the area should be shaded by a roof overhang, trellis, or other shade device. ▪ Off-street parking and loading areas, driveways, and service areas shall not be counted as usable open space. Adequate screening shall be provided if usable open space is located next to such uses.
	Activity Node: ▪ The required 5-foot setback between building and street right-of-way shall apply towards usable open space. The setbacks may be increased to 10' to create outdoor dining areas and to avoid buildings with straight unbroken facades. ▪ The usable open space may be a central plaza, park or "public square or green" located central to the Activity Node and easily accessible from buildings in the Node.
	SERVICE AREAS
Loading Areas	▪ The number of loading areas shall conform to the applicable Zoning Ordinance provisions.
Loading Areas, Docks and Storage or Service Areas	▪ Shall not encroach into landscape setback areas. ▪ Shall be a minimum 30 feet from the street front property line (and outside setback areas) and adequately screened. ▪ Shall be screened from the Otay Valley Regional Park. ▪ Shall be located within or behind buildings or be adequately screened from any public right-of-way by a wall, hedge, row of evergreen trees space 12-feet on center, or other visual barrier (Figure 3.2-4).
Mechanical Equipment	▪ Satellite dishes, back flow preventors, stand pipes, etc. that cannot be located indoors, shall be screened from view by fences, walls or landscape materials that blend with the landscape palette.

TABLE 3.2-1
Site Planning Standards

	All Land Use Designations
Public Utility Structures	▪ Traffic signal boxes, transformers, telephone switching boxes and other public utility structures shall be located underground or appropriately screened, with landscaping or architectural treatment.
	FENCING, WALLS & HEDGES
Required Fences and Walls	▪ All open sales, display and storage areas not otherwise (fully) screened by topography, buildings, or mature landscaping shall be enclosed by a view-obscuring fence or wall not less than six feet high. This requirement does not apply to the following commercial use types: a. Agricultural Sales (Retail nursery only); b. Outdoor dining areas of Eating and Drinking Establishments; and c. Gasoline Sales (No open storage of goods or materials; all repair and lubrication services shall take place in an enclosed building.) ▪ In Heavy Industrial and Mixed Industrial areas, the above requirement may be waived by the Planning Director for the following commercial use types: a. Automotive and equipment: Cleaning, Sales/rental, Heavy equipment, and Light equipment b. Gasoline Sales ▪ See Parking and Loading Areas, Docks and Storage or Service Areas for additional areas where screening is required.
General Requirements	▪ Wherever screening is required, a fence, wall, hedge or other visual barrier shall be used. Where fences are used as a required screening device, the fence must be opaque. (See Landscaping Standards for information on hedges used as a screening device.)
Maximum Height	▪ Within the setback area, fences, walls and hedges shall have a maximum height of 6 feet above grade. Noise walls may be higher than 6 feet when additional height is needed to comply with General Plan Noise Element or Noise Ordinance requirements. ▪ Beyond the setback area, or within the building envelope, fences, walls and hedges are permitted up to the maximum height applicable to the main building. Although this interpretation allows fencing greater that 6', the County does not want to create fortresses that do not meet the following goals of the Development Standards: 1. Creation of industrial and business parks with strong identities and a place of distinction and quality;

TABLE 3.2-1
Site Planning Standards

	All Land Use Designations
	2. Establishment of criteria to create cohesive, visually unified industrial and business centers.
Materials	▪ The Specific Plan allows any durable material. The wrought-iron type tube material is favored. This type of fencing can also have the angled top that limits someone climbing over. ▪ Prohibited materials include wood, barbed wire, razor wire, corrugated metal, and chain link (with/without vinyl covering) except as noted below. ▪ Detention and correction institutions (San Diego County Zoning Ordinance 1350) located in the Heavy Industrial land use designation may utilize chain link fencing (in conjunction with barbed wire and razor wire, with or without vinyl coating) where required for security purposes. Landscaped berms or setbacks shall be used to minimize visual impacts from adjacent properties and the public rights-of-way. ▪ For other types of uses, chain link is permitted in the following circumstances: 1. Property boundaries adjacent to SR-11, except within setbacks from a public right-of-way. 2. Interior lot locations (perimeter locations are excluded) in areas designated as Heavy Industrial and Mixed Industrial where the fence is located outside the setback from the public right-of-way. 3. Interior lot locations (perimeter locations are excluded) in areas designated as Light Industrial and Technology Business Park where the fence is located outside the setback from the public right-of-way AND the fence is not visible (and will not be visible) from an existing or planned public right-of-way. For example, a location that is hidden from view by existing or planned structures would be permitted. Applicants must submit adequate evidence (maps, photographs, visual simulations, etc.) that demonstrates the fence meets these requirements. 4. Interior lot locations for Interim Uses (perimeter locations are excluded), where the fence is located outside the setback from the public right-of-way. In the above cases, vinyl coated chain link fencing must be used, combined with a screening treatment such as fabric, wood lath or dense vines. Views from the public rights-of-way (and adjacent properties) should be minimized by using landscaped berms (maximum four-foot tall), landscaping and/or buildings that block views. When a lot is elevated from the public right-of-way due to topography, evidence shall be supplied to the County demonstrating that adequate screening is provided.

TABLE 3.2-1
Site Planning Standards

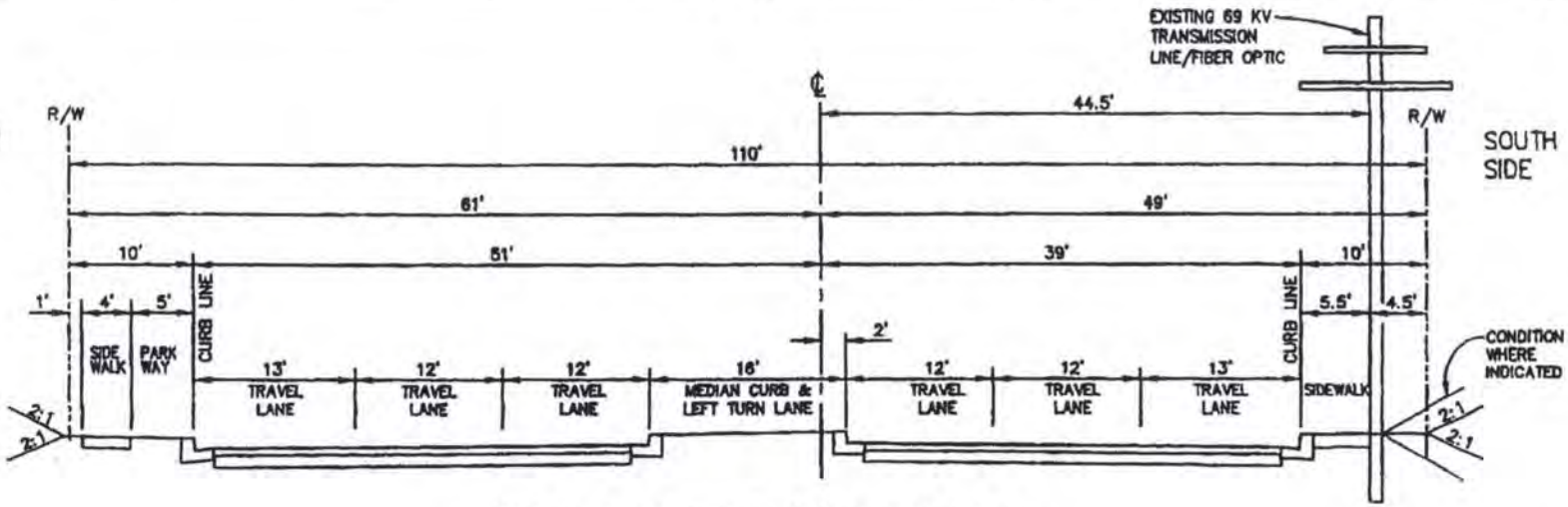
	All Land Use Designations
	▪ All open sales, display and storage areas, including those for trucks, must be enclosed by a view-obscuring fence, wall or building. A hedge or other dense landscaping can satisfy a requirement for a view-obscuring fence and shall be maintained in accordance with landscape provisions of the Water Conservation in Landscaping Ordinance and Design Manual (refer to Landscaping Standards, Table 3.2-2).
	LIGHTING
General	▪ All lighting shall comply with the County Light Pollution Code (County Code § 59.101 et seq.).
Vehicular Areas	▪ In Activity Node parking areas, lighting shall be on 15'-poles and complementary to building architecture. Illumination levels shall meet guidelines for vehicular areas (see County Light Pollution Code - County Code § 59.101 et seq.).
Service and Loading Areas	▪ Lighting shall include directional shields and shall not overflow from the service areas into adjoining parcels. ▪ No floodlights shall be permitted on buildings except for wall packs with cut-off luminaries.
Buildings	▪ Building illumination and architectural lighting shall be indirect in character (no light source visible). ▪ Architectural lighting shall articulate and animate entrances and other prominent architectural elements as well as provide the required functional lighting for safety and clarity of pedestrian movement.
Pedestrian Areas	▪ Lighting for pedestrian walks shall be designed for point-to-point illumination, but no specific illumination levels are required. The main emphasis shall be to clearly identify the pedestrian walkway and direction of travel.
Adjacent to Natural Open Space and/or the OVRP	▪ Lighting shall be directed away from areas designated as Conservation/Limited Use Area or permanent open space area and away from the Otay Valley Regional Park.

Appendix 2

GENERAL PLAN
CIRCULATION ELEMENT ROAD CROSS SECTIONS

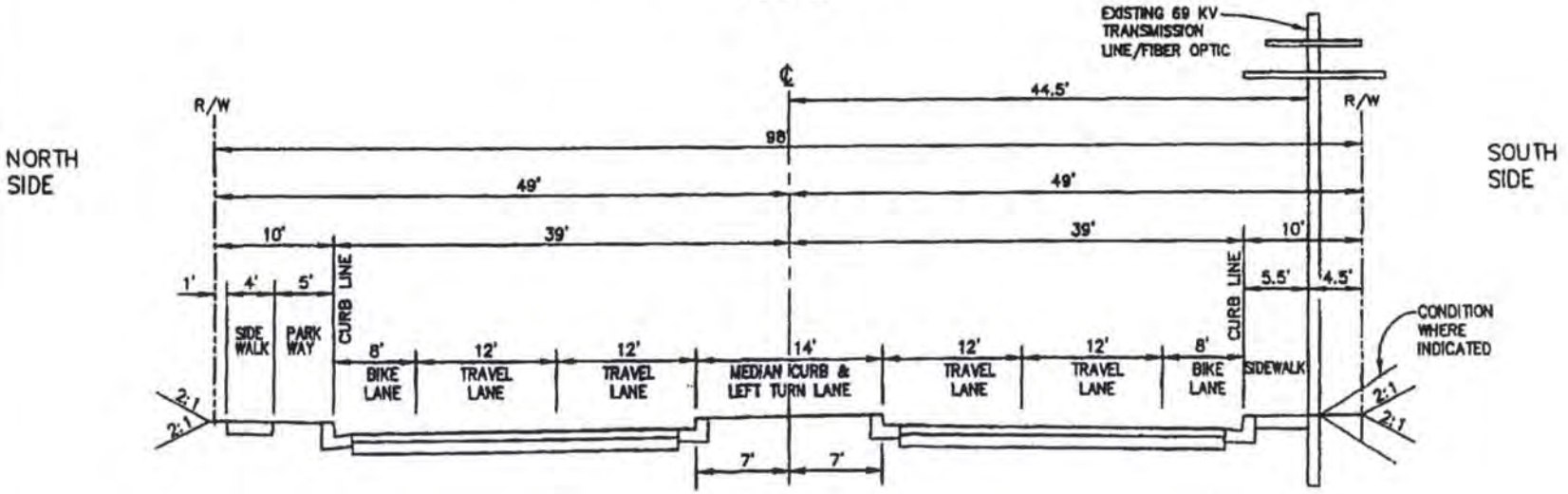
Notes on Road Cross-sections:

- **Parkway Dimensions / Composition**: The road cross-sections do not contain the correct dimensions for parkways (the area outside the curb line) on certain types of Circulation Element and Specific Plan roads. For correct dimensions and requirements for parkway design (and the adjacent landscape easement), see Section 3.2.2 Landscaping Standards and Table 3.2-2 Landscaping Standards.
- **Landscape Easements**: The cross-sections do not include a two-foot landscape easement that is required along all Circulation Element and Specific Plan roads. This easement is located along the property line, adjacent to the public right-of-way.
- **Trails**: The cross-sections do not show a trail (called a Pathway) on Alta Road that is required by the Community Trails Master Plan.



HARVEST ROAD TO ENRICO FERMI DR

NO SCALE



ENRICO FERMI DR TO ALTA RD

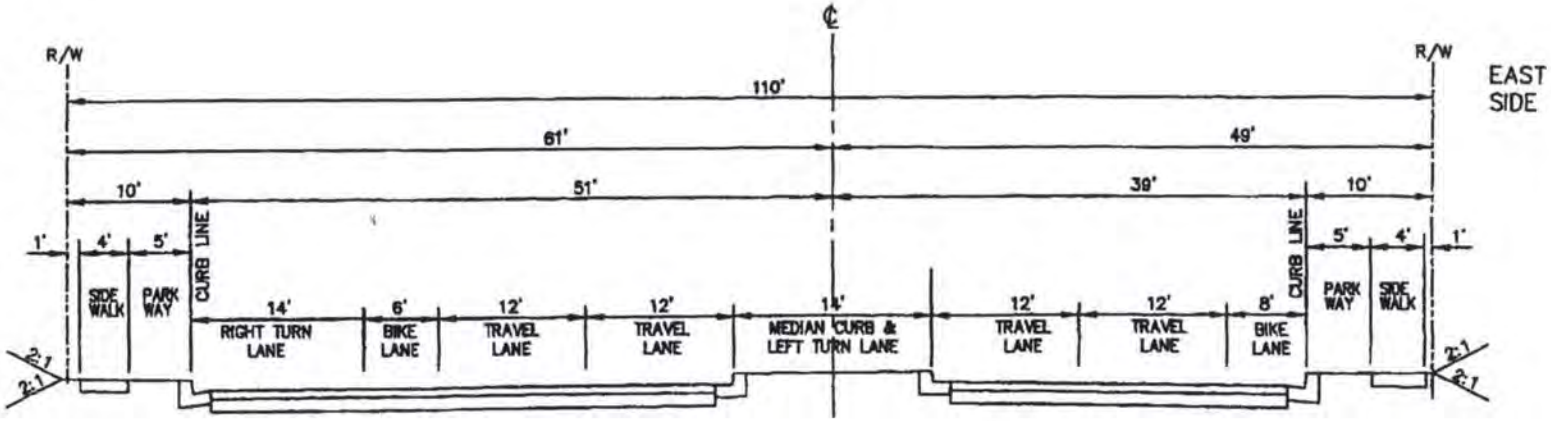
NO SCALE

NOTE: THE CROSS-SECTIONS ARE CONCEPTUAL PLANS AND THE FINAL ROAD DESIGN WILL BE SUBJECT TO APPROVAL OF THE DIRECTOR OF DPW.

GPA 06-013 EXHIBIT B-3

CROSS-SECTION FOR OTAY MESA ROAD

SOURCE: Darnell & ASSOCIATES, INC. 060411CC.dwg 6-18-07 SN



ENRICO FERMI DR

OTAY MESA ROAD TO SR-11

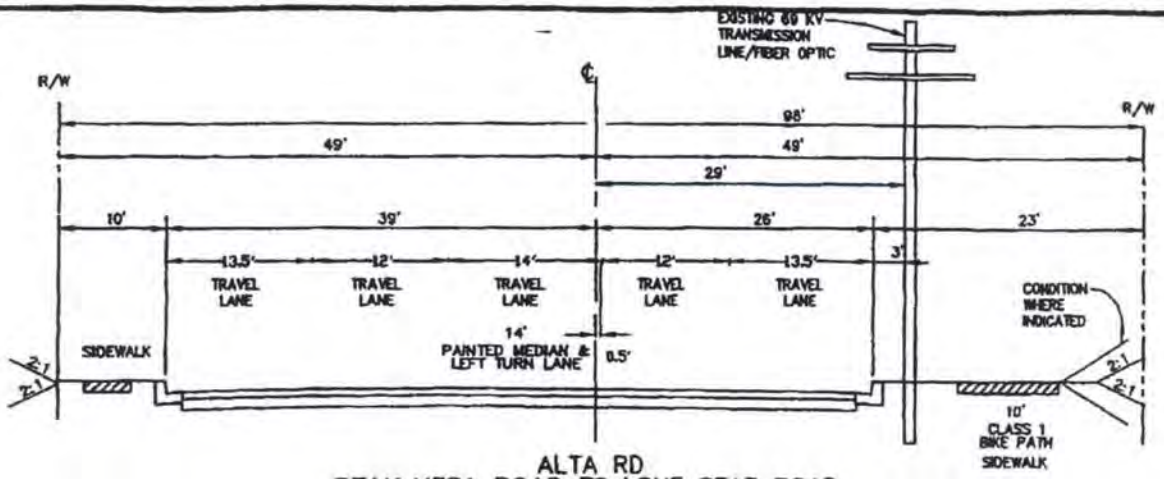
NO SCALE

NOTE: THE CROSS-SECTIONS ARE CONCEPTUAL PLANS AND THE FINAL ROAD DESIGN WILL BE SUBJECT TO APPROVAL OF THE DIRECTOR OF DPW.

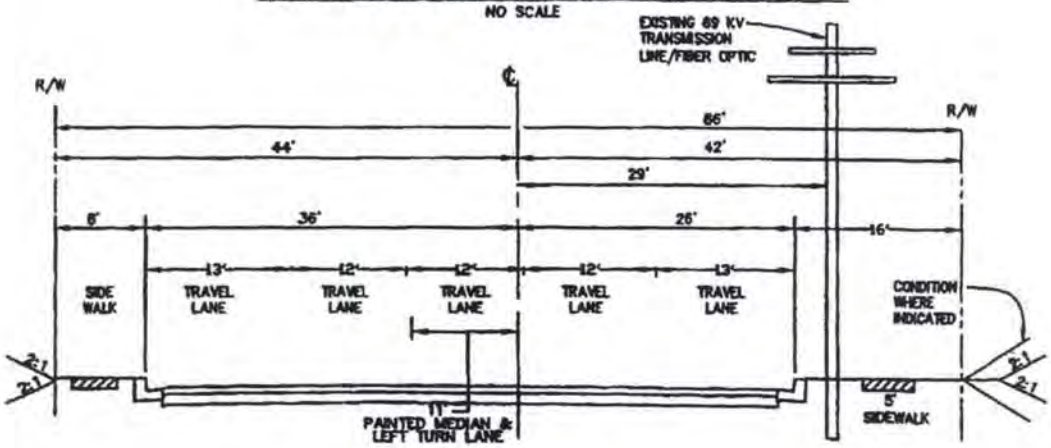
GPA 06-013 Exhibit B-3

CROSS-SECTION FOR ENRICO FERMI DRIVE

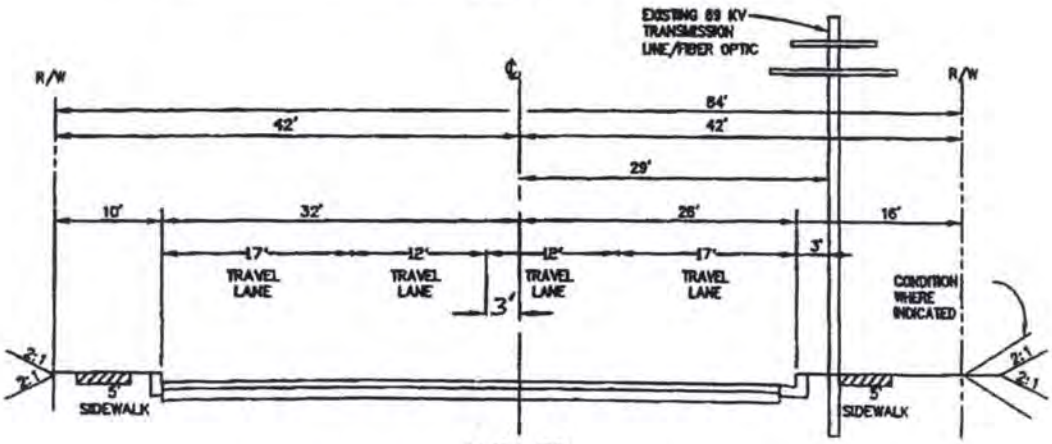
SOURCE: Darnell & ASSOCIATES, INC. 060411CC.dwg 7-12-07 SN



ALTA RD
OTAY MESA ROAD TO LONE STAR ROAD
NO SCALE



ALTA RD
LONE STAR ROAD TO DONOVAN STATE PRISON ROAD
NO SCALE



ALTA RD
N/O DONOVAN STATE PRISON ROAD
NO SCALE

NOTE: THE CROSS-SECTIONS ARE CONCEPTUAL PLANS AND THE FINAL ROAD DESIGN WILL BE SUBJECT TO APPROVAL OF THE DIRECTOR OF DPW.

GPA 06-013 EXHIBIT B-3

CROSS-SECTION FOR ALTA ROAD

SOURCE: Darnell & ASSOCIATES, INC. 060411CC.dwg 6-18-07 SN

Excerpts from 5-year Capital Improvement Program (CIP) 2010/11 – 2014/15

County of San Diego
Department of Public Works

Five Year Capital Improvement Plan

FY 2010-11 thru FY 2014-15

AIRWAY ROAD – OTAY

This project will construct additional lanes on Airway Road between Michael Faraday Drive and Enrico Fermi Drive.

Total Length	1,400 feet
Estimated Completion	TBD
Planning Group	None
Project Manager	Steve Ron
District	1
Estimated Project Cost	TBD
Funding	Transportation Impact Fee and TBD

	FY 10/11	FY 11/12	FY 12/13	FY 13/14	FY 14/15
Preliminary Engineering	$0	$0	$0	$0	$0
Project Development	$0	$0	$0	$120,000	$0
Right-of-Way	$0	$0	$0	$30,000	$0
Construction	$0	$0	$0	$0	TBD
Totals	**$0**	**$0**	**$0**	**$150,000**	**TBD**

Thomas Bros. 1352 B-3

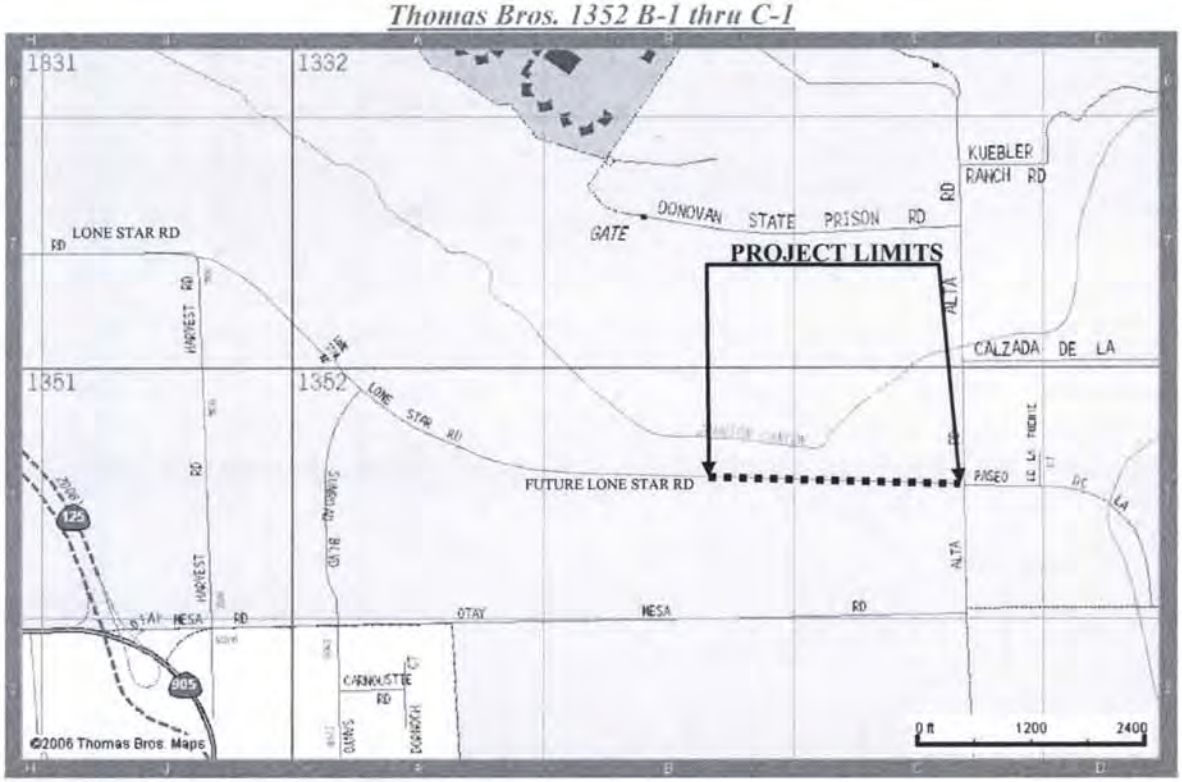
LONESTAR ROAD – OTAY

This project will construct a new road, Lone Star Road, from Alta Road to Enrico Fermi Drive.

Total Length	0.5 mile
Estimated Completion	TBD
Planning Group	None
Project Manager	Steve Ron
District	1
Estimated Project Cost	$6,900,000
Funding	Federal and TBD

	FY 10/11	FY 11/12	FY 12/13	FY 13/14	FY 14/15
Preliminary Engineering	$0	$0	$0	$0	$0
Project Development	$270,000	$0	$0	$0	$0
Right-of-Way	$20,000	TBD	$0	$0	$0
Construction	$0	TBD	$0	$0	$0
Totals	**$290,000**	**TBD**	**TBD**	**TBD**	**TBD**

Thomas Bros. 1352 B-1 thru C-1



OTAY MESA ROAD WIDENING – OTAY

This project will widen Otay Mesa Road from vicinity of Vann Center Blvd. to Enrico Fermi Drive.

Total Length	2,300 feet
Estimated Completion	TBD
Planning Group	None
Project Manager	Steve Ron
District	1
Estimated Project Cost	$12,500,000
Funding	TBD

	FY 10/11	FY 11/12	FY 12/13	FY 13/14	FY 14/15
Preliminary Engineering	$0	$0	$0	$0	$0
Project Development	$235,000	$0	$0	$0	$0
Right-of-Way	$55,000	TBD	$0	$0	$0
Construction	$0	TBD	$0	$0	$0
Totals	**$290,000**	**TBD**	**TBD**	**TBD**	**TBD**

Thomas Bros. 1352 A-2 thru B-1

Caltrans' Fact Sheets for SR905 & SR-11

November 2010

State Route 905
Phase 1A, Six-Lane Freeway
FACT SHEET

GOALS

Provide for efficient transportation of goods;

Improve motorist safety and mobility for local, regional and international traffic;

Create jobs for the San Diego region and California.

SCHEDULE

Start Construction: April 2008

Project Completion: November 2010.

CONTACT

Project Manager
Ismael Salazar at
(619) 688-6766
or e-mail at
Ismael.Salazar@dot.ca.gov

Department of Transportation
4050 Taylor Street
San Diego, CA 92110
Ph: (619) 688-6670
Fax: (619) 688-3695
www.dot.ca.gov/dist11

THE PROJECT

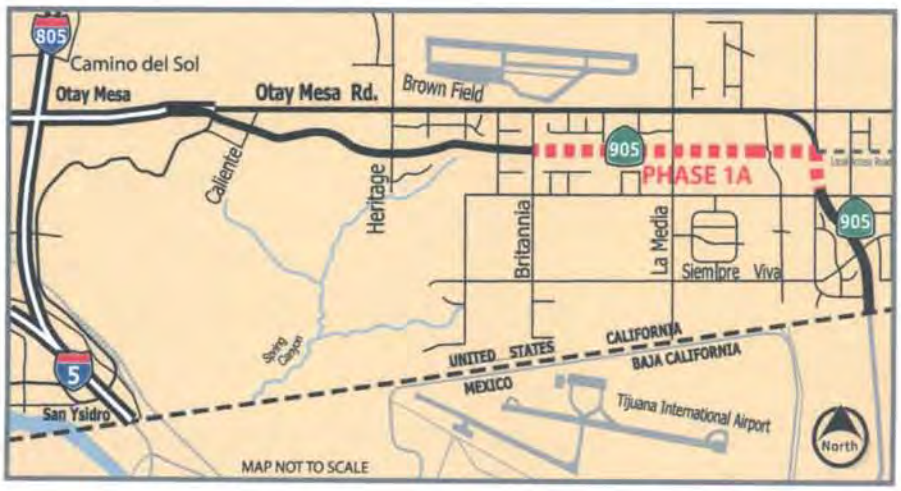
Work began in April 2008 to construct three miles of six-lane freeway from Siempre Viva Road to Britannia Boulevard in the community of Otay Mesa, San Diego. State Route 905 Phase 1A is just one portion of the larger SR-905 Project that runs from the Otay Mesa Port of Entry to I-805. The project's Phase 1B is under construction from Britannia Boulevard to east of Interstate 805.

TRAFFIC

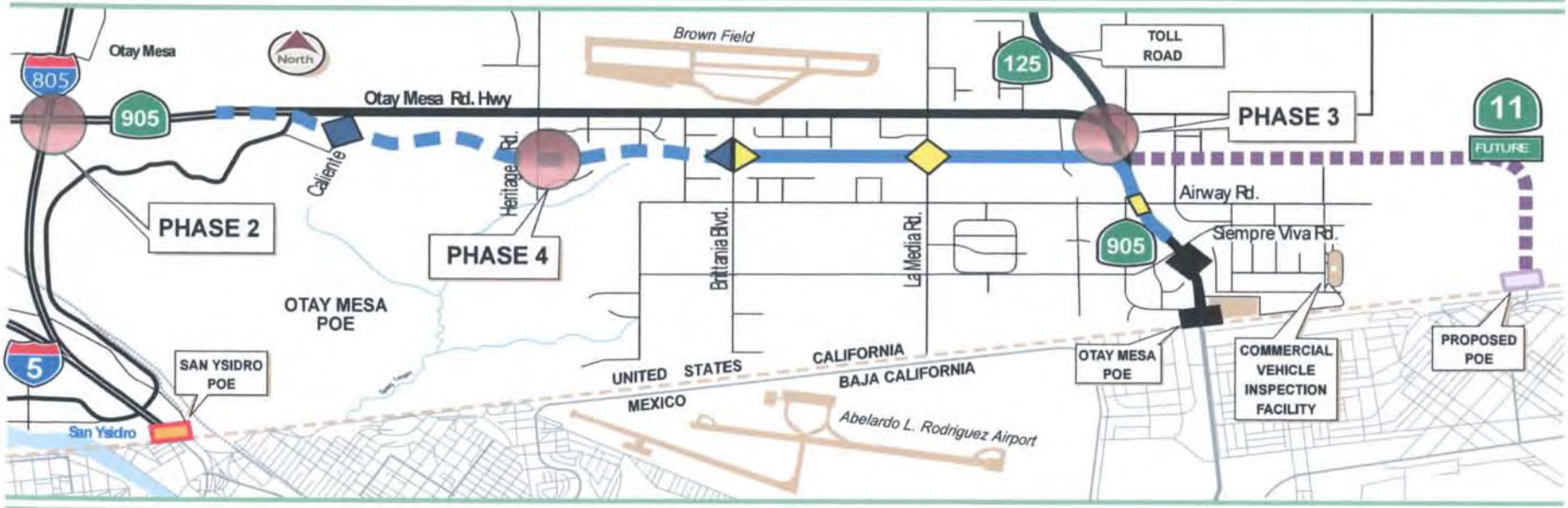
The project is critical to the flow of goods and services between California and Baja California, as well as to the nation. In 1995, total imports and exports between California and Baja California were nearly $15 billion, and in 2005 were nearly $36 billion. Ninety-eight percent of the imports and exports are transported by truck. The California/Baja California POEs processed more than two million trucks in 2005, and this figure is projected to double by 2020. Continued growth in trade through the Otay Mesa POE has brought increased congestion that will be reduced with the completion of this project.

FUNDING

SR-905 Phase 1A has a price tag of $343.6 million. Construction costs are funded by the Proposition 1B transportation bonds voters passed in 2006. The estimated cost for all phases of the SR-905 Project is about $610.7 million.



State Route 905



LEGEND - CONSTRUCTION PHASES

- PHASE 1A - 6 LANE FREEWAY BRITANNIA TO SIEMPRA VIVA
- PHASE 1B - 6 LANE FREEWAY 805 TO BRITANNIA
- PHASE 2 IMPROVEMENTS TO 805/905 INTERCHANGE
- PHASE 3 CONSTRUCT 125/905 INTERCHANGE
- PHASE 4 CONSTRUCT HERITAGE RD INTERCHANGE
- PHASE 1A - FULL INTERCHANGE
- PHASE 1A - BRIDGE STRUCTURES
- PHASE 1A INTERCHANGE WITH WB OFF RAMP AND EB ON RAMP
- PHASE 1B EB OFF RAMP AND WB ON RAMP
- PHASE 1B INTERCHANGE

February 2010

State Route 905

From I-805 to the Otay Mesa Port of Entry

FACT SHEET

GOALS

Provide for efficient transportation of goods

Improve motorist safety and mobility for local, regional and international traffic

Create jobs for the San Diego region and California

SCHEDULE

Construction of Phase 1A began in April 2008. Completion of this portion is expected by late 2010. Phase 1B began construction in July and is expected to be completed by summer 2012.

CONTACT

Project Manager
Ismael Salazar at
(619) 688-6766
or e-mail at
Ismael.Salazar@dot.ca.gov

Department of Transportation
4050 Taylor Street
San Diego, CA 92110
Ph: (619) 688-6670
Fax: (619) 688-3695
www.dot.ca.gov/dist11

THE PROJECT

A six-lane freeway will be built from Interstate 805 to the Otay Mesa Port of Entry (POE) at the U.S.-Mexico Border to serve the POE and businesses in the Otay Mesa area. It connects with other vital state routes such as I-5 and will include grade-separated local access interchanges and a freeway-to-freeway interchange with the South Bay Expressway (State Route 125 South).

TRAFFIC

The project is critical to the flow of goods and services between California and Baja California, as well as to the nation. In 1995, total imports and exports between California and Baja California were nearly $15 billion, and in 2005 were nearly $36 billion. Ninety-eight percent of the imports and exports are transported by truck. The California/Baja California POEs processed more than two million trucks in 2005, and this figure is projected to double by 2020. Continued growth in trade through the Otay Mesa POE has brought increased congestion that will be reduced with the completion of this project.

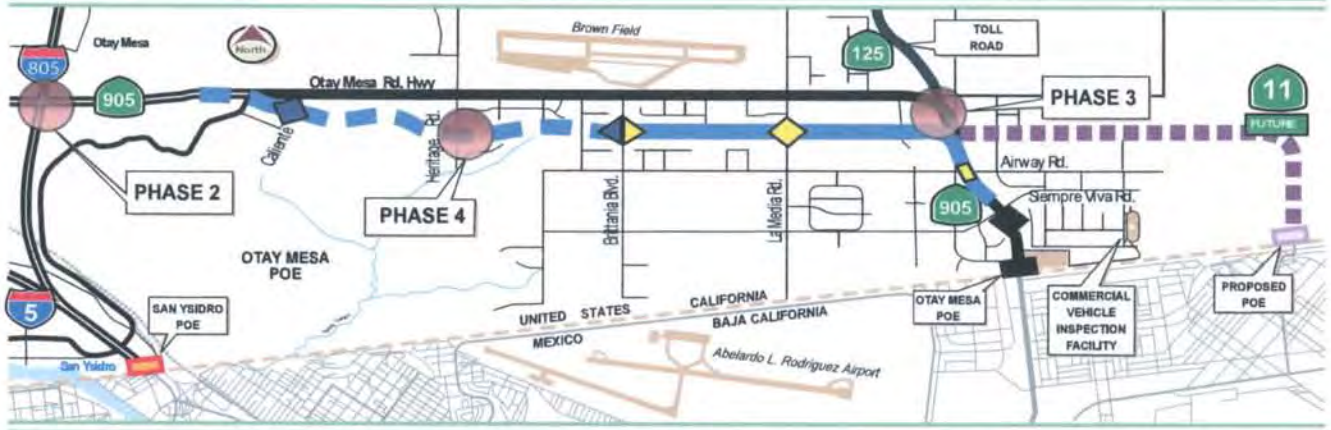
STATUS

Caltrans has purchased most of the right-of-way for Phase 1 from Siempre Viva Road to just east of I-805, and is in the process of acquiring the last parcels. Due to escalated costs, Phase 1 was split into two parts: Phase 1A, the eastern segment from Siempre Viva Road to Britannia Boulevard; and Phase 1B, the western segment from Britannia Boulevard to just east of I-805.

FUNDING

The estimated cost for the project is about $610.5 million. A total of $432.8 million has been programmed for Phases 1A & 1B. Federal funds of $236.8 million include $74 million from the American Recovery and Reinvestment Act. The State is providing $184.5 million. Local contributions of $11.5 million include $8.4 million from the TransNet one-half cent sales tax approved by San Diego County voters. The remaining phases are interchanges and not yet funded or programmed.

State Route 905



LEGEND - CONSTRUCTION PHASES

- PHASE 1A - 6 LANE FREEWAY BRITANNIA TO SIEMPRA VIVA
- PHASE 1B - 6 LANE FREEWAY 805 TO BRITANNIA
- PHASE 2 IMPROVEMENTS TO 805/905 INTERCHANGE
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- PHASE 1A - BRIDGE STRUCTURES
- PHASE 1A INTERCHANGE WITH WB OFF RAMP AND EB ON RAMP
- PHASE 1B EB OFF RAMP AND WB ON RAMP
- PHASE 1B INTERCHANGE

August 2010

State Route 11/Otay Mesa East Port of Entry Project

FACT SHEET

GOALS

It's been 23 years since the last border crossing opened between California and Baja California, Mexico, and during that time both trade partners benefited from strong economic growth.

The new border crossing and connecting freeway will do even more to promote the transportation of vital goods and services across the border, and help the two nations remain competitive in the world market.

CONTACT

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or by e-mail at
Mario.Orso@dot.ca.gov

Department of Transportation
4050 Taylor Street
San Diego, CA 92110
Ph: (619) 688-6670
Fax: (619) 688-3695
www.dot.ca.gov/dist11

THE PROJECT

Details include the proposed construction of State Route 11 (a four-lane freeway) and a new U.S. Customs and Border Protection Port of Entry in the community of East Otay Mesa, San Diego. SR-11 will extend about two miles from SR-905 south to the new Otay Mesa East Port. The new freeway and port will curb traffic congestion and reduce frequent border wait times of more than six hours for commercial trucks at the nearby Otay Mesa Port and up to three hours for cars at Otay Mesa and San Ysidro ports. It will provide a efficient connection south of the border to the Tijuana-Rosarito Corridor, with links to the Tijuana-Tecate and the Tijuana-Ensenada toll roads in Baja California, Mexico.

The passage of Senate Bill 1486 and the subsequent issuing of a federal Presidential Permit in 2008 opened the door for the San Diego Association of Governments (SANDAG) to seek private investment dollars to cover the shortfall in construction and design dollars and provide a premium crossing option for a fee. This premium option may reduce wait times from three hours down to less than a half hour. The Permit is a component of the state's intent to finance the project through tolls or user fees and is required by the financial investment industry for moving forward with public toll financing.

TRAFFIC

The project will reduce traffic congestion at the other three land ports in San Diego County (San Ysidro, Otay Mesa and Tecate). The biggest impact will be felt at the Otay Mesa Port, which serves more than 90 percent of commercial truck traffic entering the county. More than 1.4 million trucks carrying an estimated $28.6 billion in goods crossed at the Otay Mesa Port in 2006. The number of trucks is expected to double by 2025.

CONSTRUCTION COSTS

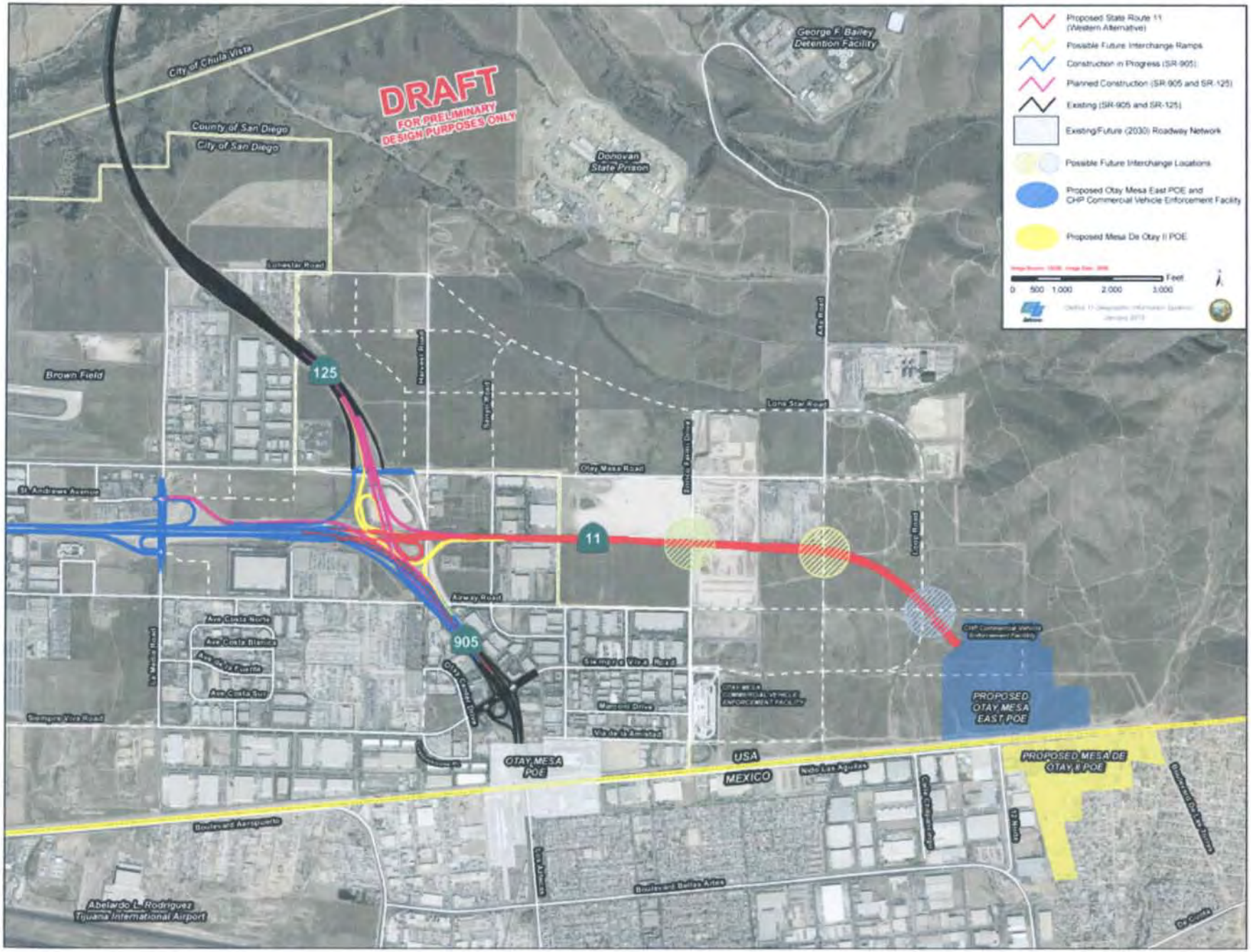
SR-11 ranges from $300 million-$360 million, while the new Otay Mesa East Port has a price tag of between $300 million-$350 million. The Proposition 1B Trade Corridor Improvement Fund is contributing $75 million for the project. The State Transportation Improvement Program has contributed $13 million and $5.7 million has come from the federal government.

Construction would create approximately 8,134 new jobs, generating an estimated $463,850 for the local economy. Operation of the facility, combined with the extension of SR-905, would create an additional 33,900 jobs and generate about $1.2 million.

STATUS

An environmental study for the program has been completed and a second study for the project itself is underway, with completion expected in fall 2011. The schedule calls for the project breaking ground in 2012/2013 and opening in 2014/2015, contingent on full funding.

State Route 11/Otay Mesa East Port of Entry



SANDAG Series 11 Model for Otay Mesa 2020

SANDAG Series 11
2015 Mobility Emphasis
Highway Network
Functional Class Network

Otay Mesa Area

Network Build 2/25/10
2020 Otay Mesa Alt 3 - 2015 Network, 2020 trip generation

Functional Classifications:

- Freeway
- Prime
- Major
- Collector
- Local Collector
- Rural Collector
- Local
- Freeway Connector
- Ramp
- Zone Connector
- Light & Commuter Rail
- Zone Boundary

Intersection Controls:

- Signal
- All-Way Stop
- One-Way Stop
- Ramp Meter
- Rail Crossing

Speeds and Lanes:

- Adjusted Speed
- Modeled Speed
- Lanes
- Lane Imbalance
- Traffic Analysis Zone

Feet 0 1,100 2,200
Meters 132 396 660

SANDAG
San Diego's Regional Planning Agency

March 2, 2010

SANDAG Series 11
2030 Mobility Emphasis
Highway Network
Daily Traffic Volumes

SR-11/Otay Mesa East

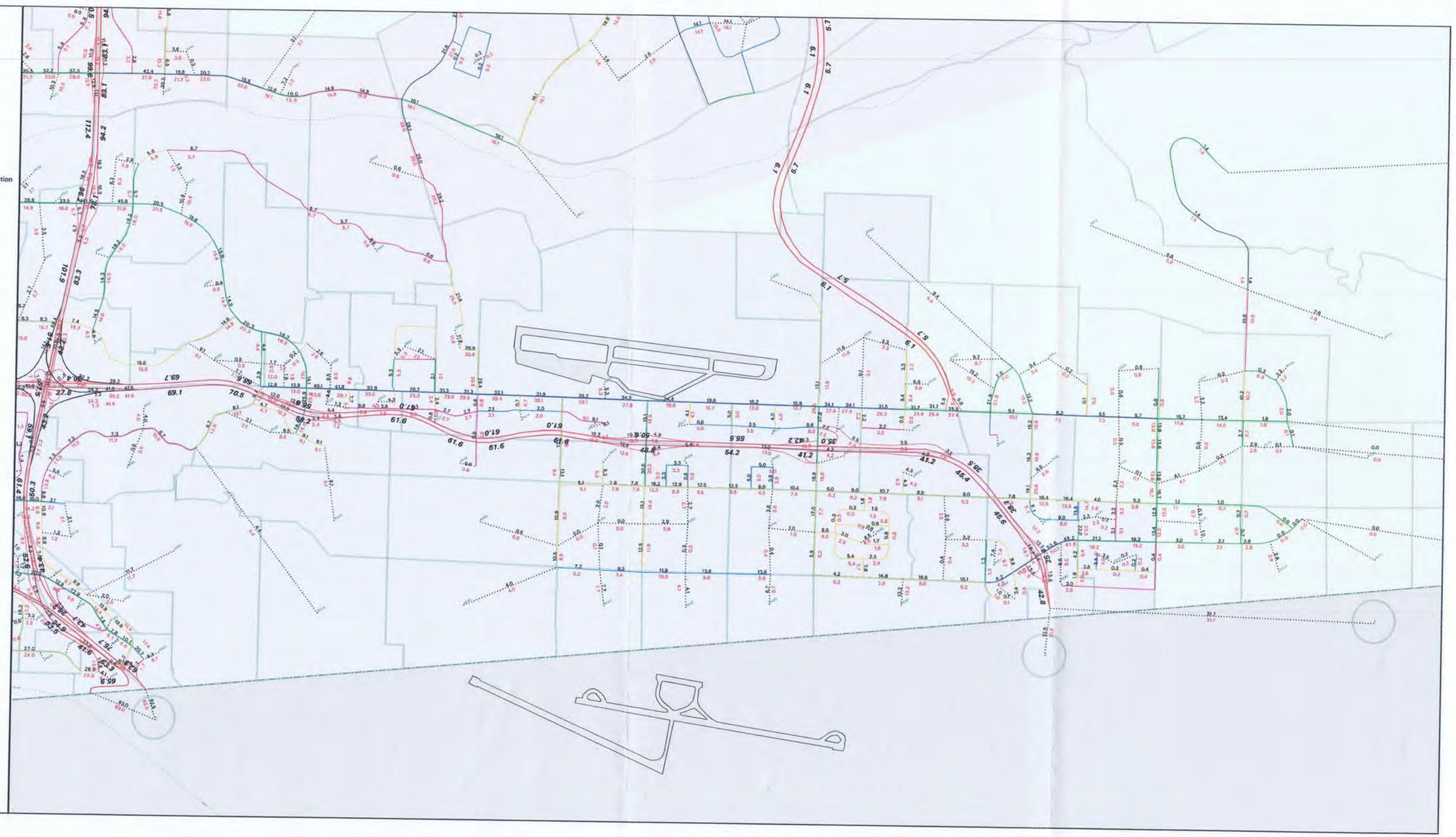
Model Run 03/05/2010
2020 Otay Mesa Alt 3 - 2015 Network, 2020 trip generation

Functional Classifications:

- Freeway
- Prime
- Major
- Collector
- Local Collector
- Rural Collector
- Local
- Freeway Connector
- Ramp
- Zone Connector
- Light & Commuter Rail
- Zone Boundary

Forecasted Volumes:

- Adjusted Volume
- Unadjusted Volume
- Traffic Analysis Zone



Feet 0 1,090 2,180
Meters 131 392 654

SANDAG
San Diego's Regional Planning Agency

March 4, 2010

SANDAG Series 11
2030 Mobility Emphasis
Highway Network
Select Link Assignment

SR-11/Otay Mesa East

Model Run 03/05/10
2020 Otay Mesa Alt 3 - 2015 Network, 2020 trip generation

Forecasted Volumes:

- Unadjusted Forecast Volume
- Select Link Volume
- Select Link Percentage
- Traffic Analysis Zone

Link Distributions:

- 100%
- 50.1% –> 99.9%
- 25.1% –> 50.0%
- 10.1% –> 25.0%
- 5.1% –> 10.0%
- 0.1% –> 5.0%
- 0%

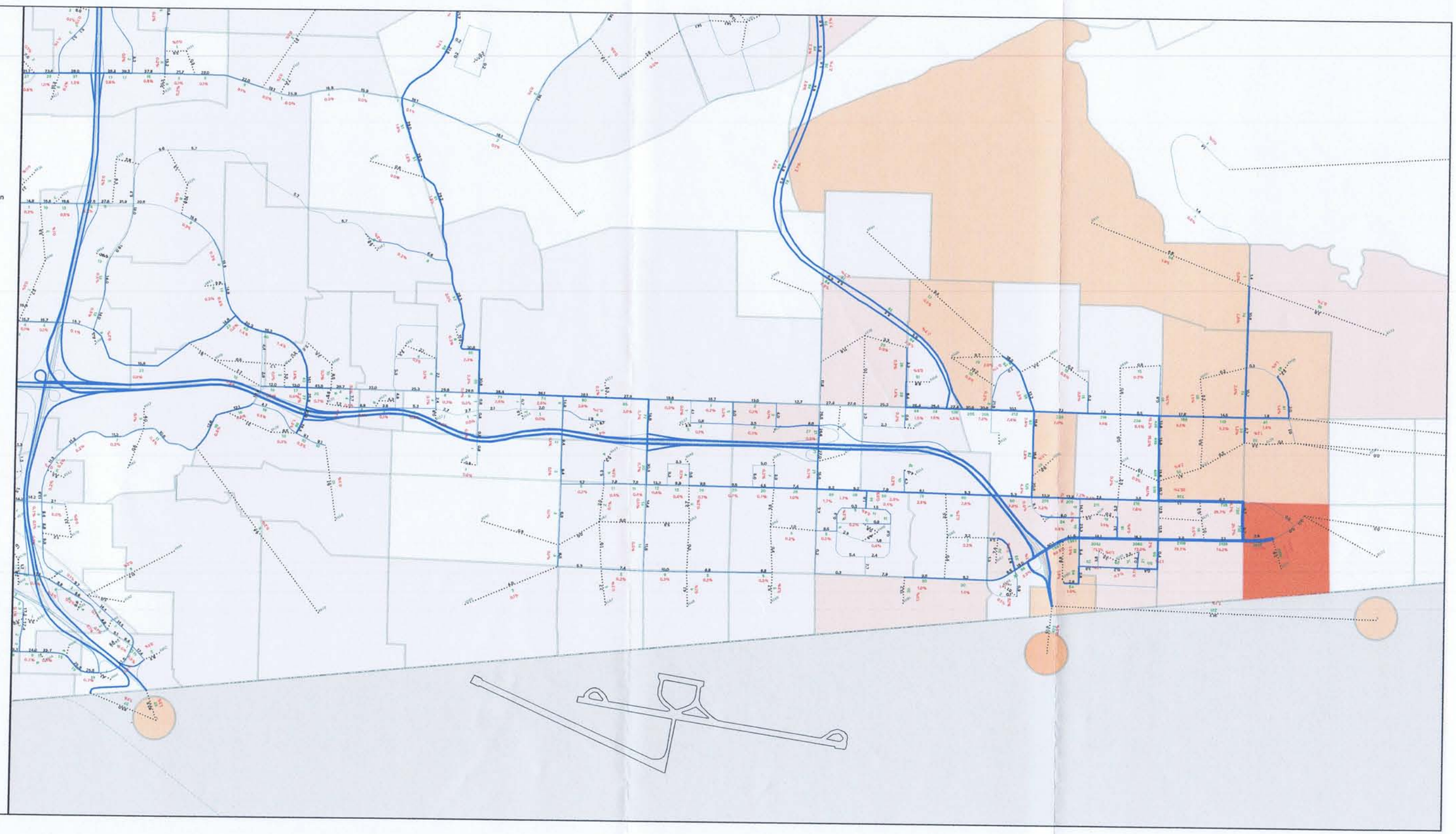
Zonal Distributions:

- 100%
- 25.1% –> 99.9%
- 10.1% –> 25.0%
- 1.1% –> 10.0%
- 0.6% –> 1.0%
- 0.1% –> 0.5%
- Zero Trips (0.0%)

Feet 0 1,090 2,180
Meters 131 392 654

SANDAG
San Diego's Regional Planning Agency

March 15, 2010



B-80

APPENDIX C

- Excerpts from the County of San Diego TIF Program Update (January 2008)
- Correspondences with County Staff (re: Additional TIF Facilities)
- Current TIF Fees

Excerpts from the County of San Diego TIF Program Update (January 2008)

ATTACHMENT B
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AN ORDINANCE TO AMEND THE SAN DIEGO COUNTY CODE RELATED TO THE TRANSPORTATION IMPACT FEE

The Board of Supervisors of the County of San Diego ordains as follows:

Section 1. The Board of Supervisors finds and determines that it is necessary to amend Sections 77.204, 77.207, and 77.208, 77.209, 77.210, 77.211, 77.213, 77.214, 77.215 and 77.217; to add Sections 77.208.1 and 77.208.2 and 77.210.1; and to repeal Section 77.212 of the San Diego County Code pertaining to the Transportation Impact Fee. The amendments made by this ordinance are intended to adjust language in the Transportation Impact Fee Ordinance.

Section 2. Section and 77.204 of the San Diego County Code of Regulatory Ordinances is hereby amended to read as follows:

SEC. 77.204. DEFINITIONS.

Whenever the following words are used in this Division, they shall have the meaning ascribed to them in this section.

(a) AGRICULTURE means farming, crop production, or raising of poultry or livestock. Agricultural uses in this ordinance do not include residential facilities.

(b) APPLICANT means developer or person seeking a development permit.

(c) BUILDING PERMIT means a permit required by and issued pursuant to the Uniform Building Code.(d) CONSTRUCTION means design, performance of estimates, environmental assessments and studies, determination of fees, acquisition of right-of-way, administration of construction contracts and actual construction.

(e) COUNTY means the County of San Diego, State of California.

(f) COUNTY HEARING BODY means the County of San Diego, Board of Supervisors, Planning Commission, or any other official, board, or commission designated by the County for decision-making on discretionary actions.

(g) DEVELOPER means the owner or developer of a development seeking a development permit.

(h) DEVELOPMENT PERMIT means any discretionary permit, entitlement, approval for a development project, or any ministerial permit, including building permit, associated with the generation of traffic issued under any ordinance of the County.

(i) DEVELOPMENT PROJECT or DEVELOPMENT means any activity described in Cal. Gov't Code §66000 of the Mitigation Fee Act.

(j) DPW DIRECTOR means the County Director of the Department of Public Works, or his or her designee.

(k) FEE means the fee as set forth in Section 77.208 of this Division.

(l) FREEWAY RAMP means the interchange freeway ramps identified in the "County of San Diego Transportation Impact Fee Report Update" date January 2008.

(m) FURNITURE STORE means a commercial facility for the sale of moveable articles such as tables, chairs, sofas, desks, or cabinets required for use or ornament in a residence, office, or the like.

(n) GENERAL COMMERCIAL includes but is not limited to shopping centers, strip development and commercial clusters, retail sales facilities including grocery stores and department stores, convenience stores, auto sales and repair facilities, hardware and lumber stores, gardening and nursery stores, eating and drinking establishments including fast food restaurants, and any other retail uses other than furniture stores that are not specifically included in other TIF category definitions.

(o) GENERAL INDUSTRIAL means facilities for manufacturing, processing, assembling, distribution services, laboratories for research and development, construction equipment sales and repair, and any industrial use other than warehouse and storage that are not specifically included in other TIF category definitions.

(p) WAREHOUSING AND STORAGE means all types of warehouses or facilities with the primary purpose being to provide storage space.

(q) NON-RESIDENTIAL means development that does not include residential uses.

(r) OFFICE means facilities for administrative or professional services and includes but is not limited to hospitals, medical clinics, insurance sales, banks, savings and loans, and real estate services.

(s) RESIDENTIAL means development composed of single-family dwellings, multi-family attached homes, condominiums and apartments, lodging including hotel rooms and time-share units, mobile homes, facilities for housing agricultural workers, retirement communities, and congregate care facilities for persons unable to care for themselves.

(t) SCHOOLS mean institutions for instruction in a particular skill or field.(u) TIF means Transportation Impact Fee.

(v) TIF AREA means the area lying within the boundaries designated on the TIF Area Map.

(w) TIF AREA MAP means a map showing the boundaries of each TIF Area. The TIF Area Map may be changed or periodically updated by action of the Board of Supervisors. The TIF Area Map is included as Figure 1 of the TIF Reports.

(x) TIF FACILITIES means the transportation facilities, or portions thereof, including intersections and traffic signals, identified in the TIF Reports, or future County approved alternatives that substantially fulfill the transportation needs identified and represented by a listed facility.

(y) TIF REGION means the area lying within the boundaries designated on the TIF Region Map.

(z) TIF REGION MAP means a map showing the boundaries of each TIF Region. The TIF Region Map may be changed or periodically updated by action of the Board of Supervisors. The TIF Region Map is included as Figure 2 of the TIF Reports.

(aa) TIF REPORTS means the "Fallbrook and Ramona Transportation Impact Fee Report" and the "County of San Diego Transportation Impact Fee Report" both dated January 2005 and adopted by the Board of Supervisors on April 13, 2005. Additionally, TIF REPORTS include the "County of San Diego Transportation Impact Fee TIF Program Update" dated January 2008. These reports shall be changed or periodically updated by action of the Board of Supervisors pursuant to Section 77.213 of this Division. The current adopted reports are on file with the Clerk of the Board.

(ab) WINERY means an establishment for producing wine and may include wine tasting rooms.

Section 3. Section 77.207 and 77.208 of the San Diego County Code of Regulatory Ordinances are hereby amended to read as follows:

SEC. 77.207. ESTIMATED COSTS.

The Board of Supervisors also finds that the total estimated costs effective through September 2004 and updated annually each January starting in January 2006, for all TIF Facilities within each said TIF Area are as set forth in the TIF Reports.

SEC. 77.208. FEE ESTABLISHED.

Pursuant to Cal. Gov't Code §§ 66000 et seq. of the Mitigation Fee Act, the fee set forth in said TIF Reports and Alternative Fee Schedules adopted by action of the Board of Supervisors shall be paid by development within the TIF Areas established herein. Instructions for estimating a project's TIF can be found on a link at: http://www.sdcounty.ca.gov/dpw/land/tif.html.

Section 4. Section 77.208.1 and 77.208.2 of the San Diego County Code of Regulatory Ordinances is hereby added to read as follows:

SEC. 77.208.1. RESIDENTIAL TIF FEES

The following are the Residential TIF Fees:

TIF AREA	COST PER SINGLE FAMILY DETACHED (SFD) RESIDENTIAL UNIT			
	Freeway Ramp	Local	Regional	Total per Unit
Alpine	$150	$1,812	$3,294	$5,256
Bonsall	$41	$6,312	$5,942	$12,295
Central Mountain	$3	$0	$2,195	$2,198
County Islands	$150	$0	$3,294	$3,444
Crest-Dehesa	$150	$1,008	$3,294	$4,452
Desert	$3	$312	$2,196	$2,511
Fallbrook	$41	$6,084	$5,942	$12,067
Jamul-Dulzura	$150	$2,184	$3,294	$5,628
Julian	$3	$0	$2,195	$2,198
Lakeside (includes Pepper Dr- Bostonia)	$150	$4,032	$3,294	$7,476
Mountain Empire	$3	$0	$2,195	$2,198
North County Metro	$41	$1,716	$5,942	$7,699
North Mountain	$3	$0	$2,195	$2,198
Otay	$150	$660	$3,294	$4,104
Pala-Pauma	$41	$1,176	$5,942	$7,159
Pendleton-De Luz	$41	$8	$5,942	$5,991
Rainbow	$41	$4,464	$5,942	$10,447
Ramona	$3	$5,940	$2,196	$8,139
San Dieguito	$41	$3,240	$5,942	$9,223
Spring Valley	$150	$660	$3,294	$4,104
Sweetwater	$150	$1,308	$3,294	$4,752
Valle De Oro	$150	$4,608	$3,294	$8,052
Valley Center	$41	$2,568	$5,942	$8,551

To determine the TIF for other residential land uses other than single-family detached (SFD) residential units, the following formula shall be used:

(1) Multi-family attached home, condominium, apartment, lodging including hotel rooms and time-share units, and accessory apartment (granny flat): 67% of SFD fee per unit

(2) Mobile home, agricultural labor residential (non-primary residence), and retirement community: 33% of SFD fee per unit

(3) Congregate Care Facility for persons unable to care for themselves: 20% of SFD fee per unit

Mixed-use development incorporating non-residential and residential uses shall have the non-residential TIF computed as shown in Section 77.208.2, and the total TIF amount shall be the non-residential TIF amount plus the applicable unit costs for any residential units. Adjustment of fees may be made pursuant to Section 77.213 of this Division.

Credits and reductions for residential development:

After calculation of a development's total residential TIF, applicants can subtract amounts including but not limited to the following credits and reductions:

Direct Impact Mitigation:

For residential developments, applicants may receive credit up to their total TIF obligation for direct impact mitigation improvements to a TIF facility. For direct impact improvement costs greater than the total TIF obligation, a reimbursement agreement for cash or credit will be allowed prior to construction of the improvements pursuant to Section 77.210, Section 77.210.5, and Section 77.211. Allowable costs for TIF facility improvements include Design, Civil Engineering, Soils Engineering, Landscape Architecture, Surveying, Bonds, Construction Management and Inspection, Permits, Off-Site Environmental Mitigation and associated costs for monitoring, Acquisition of Off-Site Right-of-Way, Utility Engineering/ Coordination, Environmental Consulting, and other project costs as allowed by the DPW Director in addition to construction costs. On-Site Right-of-Way and On-Site Environmental Mitigation are not eligible for TIF credit. Direct impact mitigation eligible for TIF credit shall include improvements which result in capacity improvements to a TIF facility including but not limited to new road construction, widening of an existing road, construction or improvement of intersections, through lanes and turn lanes, and construction or modification of signalization at intersections.

Alternative TIF Facilities:

For residential developments, applicants that can demonstrate in a traffic study approved by the County that their direct improvements constructed on a non-TIF facility will reduce trips and increase capacity of TIF facilities may receive credit toward their project's TIF obligation. An example of an alternative TIF facility could be a non-TIF road that runs parallel to a TIF facility. If improvements on the parallel non-TIF road can be shown to remove trips from or otherwise enhance operation of the parallel TIF facility, then the non-TIF improvements may be eligible for TIF credit. These improvements on alternative TIF facilities that increase capacity of TIF facilities may be considered for credit in the same way as Direct Impact Mitigation on TIF facilities.

Previously Mitigated Residential Project:

Residential development projects which have mitigated cumulative impacts prior to implementation of the TIF may receive credit toward the TIF. Project applicants requesting adjustment of the adopted fee must have completed a cumulative traffic study and already fully mitigated cumulative impacts. Applicants claiming exemption from the fee must demonstrate to the County that all cumulative impacts were clearly identified, through a cumulative traffic study, and fully mitigated through physical improvements or contribution to future road network improvements in an amount equal to the fee. Projects that analyzed cumulative impacts through a cumulative traffic study and mitigated for cumulative impacts may submit previous traffic studies to the County for consideration of a TIF credit. Amount of credit granted will be proportional to past mitigation compared to mitigation required by TIF. If the project has changed from the time of original approval so that the proposed use is now more impactive to traffic, applicants must pay a portion of the TIF equal to the cumulative impact increase. If the project mitigated to the full extent of the TIF required mitigation, then full credit up to the project's TIF obligation will be granted.

For approved projects with identified cumulative mitigation measures that have not yet been implemented, the County may, at its option and, upon further environmental review if necessary, require either completion of the originally identified mitigation or payment of the TIF.

Opt out:

In lieu of paying the TIF, a developer may choose to prepare cumulative traffic studies in accordance with the new CEQA guidelines then in effect, which no longer recognize de minimus findings, and construct appropriate mitigation. The cumulative traffic analysis must be approved by the DPW Director of or his designee prior to construction of such mitigation.

SEC. 77.208.2. NON-RESIDENTIAL TIF FEES

The following are Non-Residential General Commercial TIF Fees:

General Commercial TIF fee = Cost per 1,000 Square Foot multiplied by the Facility Floor Square Footage divided by 1,000

TIF AREA	COST PER 1,000 SQUARE FOOT FOR GENERAL COMMERCIAL			
	Freeway Ramp	Local	Regional	Total
Alpine	$467	$5,426	$3,342	$9,235
Bonsall	$108	$18,901	$2,946	$21,955
Central Mountain	$9	$0	$5,066	$5,075
County Islands	$467	$0	$5,534	$6,001
Crest-Dehesa	$467	$3,018	$4,312	$7,797
Desert	$9	$934	$5,067	$6,010
Fallbrook	$108	$18,217	$3,234	$21,559
Jamul-Dulzura	$467	$6,539	$2,874	$9,880
Julian	$9	$0	$5,066	$5,075
Lakeside (includes Pepper Dr- Bostonia)	$467	$12,073	$647	$13,187
Mountain Empire	$9	$0	$5,066	$5,075
North County Metro	$108	$5,138	$8,516	$13,762
North Mountain	$9	$0	$5,066	$5,075
Otay	$467	$1,976	$4,743	$7,186
Pala-Pauma	$108	$3,521	$9,163	$12,792
Pendleton-De Luz	$108	$36	$10,564	$10,708
Rainbow	$108	$13,367	$5,174	$18,649
Ramona	$9	$16,026	$0	$16,035
San Dieguito	$108	$9,702	$6,647	$16,457
Spring Valley	$467	$1,976	$4,743	$7,186
Sweetwater	$467	$3,916	$3,916	$8,299

Valle De Oro	$467	$13,762	$0	$14,229
Valley Center	$108	$7,689	$7,474	$15,271

To determine the TIF for other non-residential commercial and industrial land uses other than general commercial, the following formula shall be used:

(1) Furniture Stores: 14% of general commercial fee

(2) General Industrial: 37% of general commercial fee

(3) Storage, Warehousing, Wineries, Non-residential Agricultural: 14% of general commercial fee

(4) Offices: 56% of general commercial fee

(5) Schools and Government/Institutional: 32% of general commercial fee

The non-residential TIF fee shall be computed based on the applicable TIF rate for the primary use of a building or the primary use of each individual storefront for mixed use buildings. Ancillary or support spaces such as management offices in a retail store, storage space in an office building, or offices in an industrial facility will not be separated for computing the TIF. Mixed use buildings with distinct and separate storefronts for multiple businesses will have their TIF computed based on the applicable TIF rate of each distinct and separate storefront. For example, a strip mall with retail stores and office uses such as a bank and a medical office would be charged the general commercial rate for the retail stores and the offices TIF rate for the bank and medical office. Mixed-use development incorporating non-residential and residential uses shall have the residential TIF computed as shown in Section 77.208.1, and the total TIF amount shall be the non-residential TIF amount plus the applicable unit costs for any residential units. Adjustment of fees may be made pursuant to Section 77.213 of this Division.

Credits and reductions for non-residential development.

Direct Improvement Credits for non-residential developments have already been included in the County's overall program for non-residential TIF rates, so direct improvement costs shall not be used as a TIF credit or reduction for non-residential development.

Previously Mitigated Non-Residential Project:

Non-residential development projects which have mitigated cumulative impacts prior to implementation of the TIF may receive credit toward the TIF. Project applicants requesting adjustment of the adopted fee must have completed a cumulative traffic study

and already fully mitigated cumulative impacts. Applicants claiming exemption from the fee must demonstrate to the County that all cumulative impacts were clearly identified, through a cumulative traffic study, and fully mitigated through physical improvements or contribution to future road network improvements in an amount equal to the fee. Projects that analyzed cumulative impacts through a cumulative traffic study and mitigated for cumulative impacts may submit previous traffic studies to the County for consideration of a TIF credit. Amount of credit granted will be proportional to past mitigation compared to mitigation required by TIF. If the project has changed from the time of original approval so that the proposed use is now more impactive to traffic, applicants must pay a portion of the TIF equal to the cumulative impact increase. If the project mitigated to the full extent of the TIF required mitigation, then full credit up to the project's TIF obligation will be granted.

For approved projects with identified cumulative mitigation measures that have not yet been implemented, the County may, at its option and, upon further environmental review if necessary, require either completion of the originally identified mitigation or payment of the TIF.

Opt out:

In lieu of paying the TIF, a developer may choose to prepare cumulative traffic studies in accordance with the new CEQA guidelines in effect, which no longer recognize de minimus findings, and construct appropriate mitigation. The cumulative traffic analysis must be approved by the DPW Director or his designee prior to construction of such mitigation.

Section 5. Section 77.209 and 77.210 of the San Diego County Code of Regulatory Ordinances are hereby amended to read as follows:

SEC. 77.209. PAYMENT OF FEES.

The fees required pursuant to this Division are intended to mitigate cumulative traffic impacts and shall be paid to the County as a condition of approval of a development permit, including a building permit. For development projects that require both discretionary and building permits, the fees shall be paid no later than time of building permit issuance. If the fee is paid prior to the time of building permit issuance and the amount of the fee increases, then the additional fee amount must be paid before the building permit is issued. If the fee is paid prior to time of building permit issuance and the amount of the fee is reduced, then at the time the building permit is issued, a TIF refund will be provided to the applicant. Once a building permit is issued, the amount of the fee is set and will not be adjusted by subsequent increases or decreases to the TIF rates. In the case of discretionary permits that will not involve a building permit but which will generate additional traffic, payment of the fee shall be recommended as a condition of permitting to the decision-making body that would approve such permit.

SEC. 77.210. DEVELOPER CONSTRUCTION OF TRANSPORTATION FACILITIES.

For direct impact mitigation improvement costs on a TIF facility for residential projects, a developer is entitled to compensation and may request a credit for its TIF obligation and a reimbursement for allowable costs greater than the project's TIF obligation. Whenever a developer of a residential or non-residential development project would be required by application of County ordinance or policy, as a condition of approval of a development permit to construct or finance the construction of a portion of a TIF Facility in addition to their direct impact mitigation, the County may impose an additional requirement that the developer install the improvements with supplemental size, length or capacity in order to ensure efficient and timely construction of the transportation facilities network. Similarly, when residential or non-residential development project impacts create an accelerated need for transportation improvements in addition to the project's direct improvements, the County may require accelerated construction of TIF Facilities to assure project conformance with California Environmental Quality Act (CEQA). If such a requirement for supplemental or accelerated facilities is imposed, the developer will be entitled to compensation for eligible construction costs that exceed the total TIF fee required for the developer's project. The developer may request cash reimbursement, or a credit against current or future TIF fees, for work to be done or paid for by the developer, and said request shall be submitted in writing to the DPW Director prior to construction of the improvements. The County will enter into either a cash reimbursement agreement as shown in Section 77.210.5 or a credit reimbursement agreement as shown in Section 77.211 with the developer prior to construction of the improvements.

(a) The reimbursement request shall contain a description of the project with a detailed cost estimate that itemizes those allowable costs of the construction attributable to construction of TIF Facilities and excludes any work attributable to non-TIF facilities. Estimated cost of the facility will be based on the County's current-year Department of Public Works Unit Price List. The estimate is preliminary and the amount of reimbursement or credit against fees is subject to final determination by County's designee. Additional information shall be provided to the County by the developer upon request of the County.

(b) The developer is also required to:

i. Prepare plans and specifications for approval by the County;

ii. Secure and dedicate any right-of-way required for the transportation facility project;

iii. Secure all required permits and environmental clearances necessary for the transportation facility project;

iv. Provide performance bonds for 100 percent of the value of the transportation facility project;

v. Pay all fees and costs for construction of the transportation facility project.

(c) The County will not be responsible for any of the up-front costs of constructing the transportation facility project. The developer shall advance all necessary funds to construct the transportation facility project. Allowable reimbursable costs include cost of Design, Civil Engineering, Soils Engineering, Landscape Architecture, Surveying, Bonds, Construction Management and Inspection, Permits, Off-Site Environmental Mitigation and associated costs for monitoring, Acquisition of Off-Site Right-of-Way, Utility Engineering/ Coordination, Environmental Consulting, and other project costs as allowed by the DPW Director in addition to construction costs. On-Site Right-of-Way and On-Site Environmental Mitigation will not be reimbursed.

(d) The developer shall make all reasonable efforts to secure at least three qualified and responsible bids for work to be done and shall award the construction contract to the lowest qualified bidder. In the event three or more qualified and responsible bids cannot be obtained, then the developer may still award the construction contract if the DPW Director determines the lowest qualified bid is reasonable. Should the construction contract be awarded to a qualified bidder who did not submit the lowest bid for the transportation facility project portion of the contract, the developer will only receive Transportation Impact Fee reimbursement or credit based on the lowest responsible bid for the transportation facility portion of the contract. The developer is allowed to combine the supplemental work with other work being completed for the project in order to obtain the most competitive bids, but costs of the TIF improvement must be segregated within such bids.

(e) All bids must be reviewed by the County prior to contract award. If the lowest bid received exceeds the total estimated cost of the facility, the County may require the developer to obtain a revised bid or, if necessary, submit a redesign of the facility to bring the cost into the estimated range. If the total actual cost of construction is less than the total estimated cost of the facility, then the developer shall be reimbursed for his actual allowable costs.

(f) When all TIF facility improvement work has been completed to the satisfaction of the County, the developer shall submit verification of payments made for the construction of the transportation facility project to the County. The County's designee shall make the final determination relative to expenditures that may be eligible for credit or cash reimbursement.

(g) If the amount of the applicable credit is less than the deferred fee obligation and the TIF Fee is otherwise due and payable, then the developer shall have 30 days to pay the deferred fee. If the deferred fees are not paid within the 30-day period, the County may make a demand against the security and apply the proceeds to the fee obligation.

(h) Prevailing Wage is Applicable. Current applicable prevailing wage is required to be paid for all construction work under either a Cash Reimbursement Agreement or a

Credit Reimbursement Agreement, and bid documents for construction of the Improvements shall include a requirement that such prevailing wages be paid.

Section 6. Section 77.210.1 of the San Diego County Code of Regulatory Ordinances is hereby added to read as follows:

SEC.77.210.1 DEVELOPER REIMBURSEMENT AGREEMENT CASH PAYMENTS

For Developer Reimbursement Agreements for cash reimbursement as described in Sec 77.210, the maximum term of any reimbursement agreement shall be twenty- five (25) years or until reimbursements or credits have been issued in full, whichever occurs first. After twenty-five years, the agreement will expire regardless of whether or not necessary TIF revenues have been collected to reimburse all costs. Cash reimbursements for Developer Reimbursement Agreements will be made from available TIF funds as follows:

(a) Payments shall be made quarterly within 21 days after the end of each calendar quarter from available freeway ramp, local or regional TIF revenue in the applicable TIF Account.

(b) Definitions for Cash Reimbursement Payments.

i. Available TIF Revenue means TIF Fees paid into the applicable local or regional TIF Account during a calendar quarter plus any accumulated TIF Revenue remaining from prior to the quarter.

ii. Developers TIF Reimbursement means payment from the applicable local or regional TIF Account due and payable to Developers pursuant to Reimbursement Agreements for which Reimbursement Amounts have been determined prior to or during the calendar quarter.

iii. County TIF Reimbursement means TIF-eligible project costs during a calendar quarter for TIF Facility projects being accomplished by the County.

iv. Quarterly TIF Payments means Developer TIF Reimbursements and County TIF Reimbursements that become due for a calendar quarter (January 1 to March 31, etc).

(c) Proportionality of Cash Reimbursements to Developers and to the County.

i. If eligible Developers or County TIF Reimbursements are both less than 50% of the Available TIF Revenue, then Developers and County shall each be fully reimbursed.

ii. If both Developers and County have eligible TIF reimbursements that exceed 50% of a quarter's Available TIF Revenue, then 50% of the revenue shall be allocated to Developers and 50% to County.

iii. If either Developers or County have eligible TIF Reimbursements that are less than 50% of the Available TIF Revenue and the other has eligible TIF Reimbursements that exceed 50% of the Quarter's Available TIF Revenue, then the one having less than 50% shall receive full reimbursement and the other shall receive up to the amount due from all remaining Available TIF Revenue regardless of whether it exceeds 50%.

(d) Proportionality of Quarterly Reimbursements of available TIF Revenue among multiple Developers

i. For determining payments, 50% of TIF Revenue available for reimbursements to Developers shall be allocated based on the Initial Amount Owed to each Developer and 50% shall be allocated based on Initial Ratio of Actual Cost of Improvements to TIF Obligation.

ii. Initial Amount Owed. Allocation to each Developer for whom payment are due each quarter shall be abased on the ratio for the Developer's initial Reimbursement Amount to the total of all Developers' initial Reimbursement Amounts for whom payments are due for the quarter. As an example, if there are three developers eligible for TIF Reimbursements from a TIF Account for a particular quarter, and the initial Reimbursement Amounts for Developers A, B, and C are $5,000,000, $15,000,000, and $30,000,000 respectively, then 50% of available TIF revenue to be allocated to Developers shall be proportioned as follows:

Developer A receives $5 million/$50 million = 10%

Developer B receives $15 million/$50 million = 30%

Developer C receives $30 million/$50 million = 60%

iii. Initial Ratio of Actual Cost to Improvements to TIF Obligation . Allocation to each Developer for whom payments are due each quarter shall be based on the ratio of the Developer's Actual Cost of Improvements to that Developer's TIF Obligation. For example, if there are three developers eligible for TIF Reimbursements from a TIF Account for a particular quarter, and the initial ratio of Actual Cost of Improvements to TIF Obligation are as follows:

Developer A	Initial Actual Cost of Improvements = $5 million
	TIF Obligation = $2.5 million
	Ratio = $5 million/$2.5 million = 2
Developer B	Initial Actual Cost of Improvements = $55 million
	TIF Obligation = $1 million

Ratio = $15 million/$1 million = 15

Developer C Initial Actual Cost of Improvements = $30 million

TIF Obligation = $10 million

Ratio = $30 million/$10 million = 3

Then the remaining 50% of available TIF revenue to be allocated to developers shall be proportioned as follows:

Developer A = 2 / (2 + 15 + 3) =10%

Developer B = 15 / (2 + 15 + 3) = 75%

Developer C = 3 / (2 + 15 + 3) = 15%

(e) Adjustments to Unpaid Reimbursement Balance. Upon each anniversary of the date that the first reimbursement payment became due under a Reimbursement Agreement, the unpaid balance shall be adjusted to reflect the lesser of an annual interest rate of 2% or increases, if any, in the Los Angeles Construction cost Index (CCI), referenced in Section 77.213, but annual interest shall be no less than 1%. The balance adjustment shall commence on the date the Reimbursement Amount became due and end on the date on which the final Incremental Reimbursement Payment is received by the Developer. All reimbursement payments will be provided to the Developer at the address provided in the Reimbursement Agreement, and the address may be changed in writing by the Developer.

(f) Prevailing Wage is Applicable. Current applicable prevailing wage is required to be paid for all construction work under the Agreement, and bid documents for construction of the Improvements shall include a requirement that such prevailing wages be paid.

Section 7. Section 77.211 of the San Diego County Code of Regulatory Ordinances is hereby amended to read as follows:

SEC. 77.211. DEVELOPER TIF CONSTRUCTION CREDITS.

When a transportation facility, or portion thereof, as described in the TIF Reports, or when an alternative TIF Facility as described in Section 77.208.1 is constructed by the developer through a written agreement with the County as described in Section 77.210, the County shall grant either cash reimbursements as shown in Section 77.210.5 or construction credits. Construction credits will be limited to the total actual allowable costs. When a developer chooses to receive construction credits, the developer must request credit reimbursement from the County to initiate this process, and the terms of construction credit issuance will be described in a written credit reimbursement

agreement between the developer and the County. The County will incrementally apply credit which the developer has accrued against the developer's TIF obligations in lieu of collecting the required Transportation Impact Fees as each building permit is issued based upon the fee schedule in effect at the time of the building permit issuance. Construction credits are transferable, at the holder's sole and absolute discretion, but may only be applied within the same TIF Region in which the facilities were constructed. TIF Facility credit will not be given for non-TIF facilities, unless such facilities are approved by County as an alternative to a listed TIF facility.

Section 8. Section 77.212 of the San Diego County Code of Regulatory Ordinances is hereby repealed:

Section 9. Section 77.213, 77.714, and 77.215 of the San Diego County Code of Regulatory Ordinances are hereby amended to read as follows:

SEC. 77.213. ADJUSTMENT OF FEES.

The fees established by Section 77.208.1 and Section 77.208.2 hereof have been established based in part on estimated costs to construct TIF Facilities as of September 2004 and updated annually starting in January 2006. The amount of the fee shall be adjusted annually on January 1st of each year. Said adjustment shall be based on the following criteria:

(a) The one-year change (from September to September) in the Los Angeles Construction Cost Index as determined by *Engineering News Record* published by McGraw Hill Publishing Company, or any successor thereof, or an increase of 2.0%, whichever is more. The Board of Supervisors shall review the fee annually as required by Government Code Section 66006 and the adjustments shall not exceed the percentage increase set forth in the Los Angeles Construction Cost Index or an increase of 2.0%, whichever is more. Adjustments to the fees based upon the Construction Cost Index shall be automatic and shall not require further action of the Board of Supervisors.

(b) Changes in the type, size, location or cost of the transportation facilities (if any) to be financed by the fee, changes in land use designations in the County's general plan, and upon other sound engineering, financing and planning information. Adjustments to the fees resulting from the above reviews may be made by resolution amending the fee schedules contained in the TIF Reports and subject to the notice and public meeting requirements of Government Code Section 66016.

The Board of Supervisors may reduce the fee by up to 50% for a specific project if it determines there are public financial benefits that warrant such a reduction, and funding to replace the excused fee amounts is committed as part of such action. The Board of Supervisors may create a zone of "reduced impact fees" to encourage growth within that area by supplementing public funds to replace fees in the same amount that would have been collected as such growth occurred.

SEC. 77.214. USE OF FEES.

Fees collected hereunder in satisfaction of the local portion of the total TIF rate, as set forth in Section 77.208.1 and Section 77.208.2 of this Division, shall be segregated into a TIF Facilities fund with an interest-bearing account established for each TIF Area, and the funds therein and interest accruing thereto shall be expended solely for the construction or reimbursement for construction of TIF Facilities within the TIF Area from which the fees comprising the fund were collected. Fees collected hereunder in satisfaction of the regional portion of the total TIF rate, as set forth in Section 77.208.1 and Section 77.208.2 of this Division, shall be segregated into a TIF Facilities fund with an account established for each TIF Region, and the funds therein and interest accruing thereto shall be expended solely for the construction or reimbursement for construction of TIF Facilities within the TIF Region from which the fees comprising the fund were collected. These fees may also be used to reimburse the County for TIF Facilities constructed by the County with funds from other sources. Fees collected hereunder in satisfaction of the freeway/interchange ramps portion of the total TIF rate, as set forth in Section 77.208.1 and Section 77.208.2 of this Division, shall be segregated into a TIF Facilities fund with an account established for each TIF Freeway/Interchange Ramp Region, and the funds therein and interest accruing thereto shall be expended solely for the construction or reimbursement for construction of TIF Interchange Ramp Facilities within the TIF Region from which the fees comprising the fund were collected.

TIF Facilities and funds shall be identified in a Department of Public Works Detailed Work Program, which includes capital improvements and other transportation related expenditures. The TIF facilities within the Detailed Work Program (DWP-TIF) will be presented for Board approval as part of the annual budget approval process. TIF Facilities funds within the DWP-TIF will not be co-mingled with other project funds to ensure that revenues and expenditures are solely and exclusively used for TIF Facility construction. However, these funds may be augmented by other sources, if available, in order to complete TIF Facility projects.

Expenditure for interim improvements that provide incremental progress and measurable benefits, such as increased capacity or traffic flow, will be allowed. These interim improvements will be consistent with the long-term objectives of full TIF facility construction as determined by the DPW Director. When recommended by the DPW Director, interim improvements will be identified in the DWP- TIF and expenditures from the TIF Facilities funds will be authorized commensurate with DWP-TIF approval. In selecting which specific road improvements shall be recommended, priority shall be given to those roads that serve projects that have paid impact fees.

SEC. 77.215. APPLICABILITY.

This Division shall apply to all development permits, including building permits, associated with the generation of traffic through new construction or expansion of an existing facility that add square footage space to a facility, as determined by the County.

However, examples of building permits to which this Division shall not apply, include but are not limited to:

(a) Alterations, improvements, or additions to an existing single family dwelling, or rebuilding of a destroyed single family dwelling that does not change its classification of occupancy.

(b) Apartment to condominium conversions.

(c) Interim or Temporary Use Permits of three years or less complying with requirements of Section 77.217.

(d) Permitted Home businesses such as child day care in a residential unit and other business uses allowed within a residence.

(e) Tenant Improvements to existing non-residential facilities including changes of occupancy or changes in use for an existing facility.

(f) Minor expansions to existing non-residential facilities. Minor expansions for purposes of this ordinance refer to expansions that increase the total floor space of a facility by no more than 1,000 square feet. Expansions of greater than 1,000 square feet would require payment of TIF for all additional floor space beyond the initial 1,000 square foot expansion. For example, an existing facility that expands from 10,000 square feet to 20,000 square feet would have a TIF obligation based on 9,000 square feet. To prohibit incremental expansions to avoid payment of the TIF, any prior expansions over the preceding five years will be considered part of the current expansion.

(g) Rebuilding of a destroyed non-residential facility that does not increase floor space greater than 1,000 square feet. Expansions of greater than 1,000 square feet would require payment of TIF for all additional floor space beyond the initial 1,000 square foot expansion.

(h) Uncovered outdoor areas for tables or seating for a café or restaurant that do not require a building permit.

(i) Accessory buildings such as non-commercial garages, barns, sea containers, workshops at residences, and non-residential agricultural buildings (agricultural labor dwellings are not exempt).

(j) Signs, water tanks, propane tanks, other liquid tanks, fuel pumps including gasoline station pumps, wells, or similar structures.

The Director of Public Works is authorized to prepare and maintain a list of all permits types to which the fee will apply.

This Division shall not exempt any new development except as required by state or federal law. In cases where a development is specifically exempt by law from this Division, but said development has transportation impacts required to be mitigated by CEQA, the County can accept TIF payment for mitigation purposes.

The requirement of this chapter shall not apply to projects for which fees for an unexpired building plan check were paid on or before March 29, 2005 regardless of whether they obtain their building permit prior to the effective date of this ordinance.

Section 10. Section 77.217 of the San Diego County Code of Regulatory Ordinances is hereby amended to read as follows:

SEC. 77.217. WAIVER.

A development which is designed and intended as a temporary use (3 years or less) and which is conducted in facilities which are, by their nature, short- term interim facilities such as a portable or modular building (including mobile homes, trailers, etc.) may apply to the DPW Director for a TIF fee waiver. The DPW Director shall have the authority to grant such waivers.

Section 11. Effective Date. This Ordinance shall take effect and be in force sixty (60) days after the date of its passage, and before the expiration of fifteen (15) days after its passage, a summary shall be published once with the names of the members voting for and against the same in _____, a newspaper of general circulation published in the County of San Diego.

COUNTY OF SAN DIEGO

LAND USE AGENDA ITEM

BOARD OF SUPERVISORS

GREG COX
First District

DIANNE JACOB
Second District

PAM SLATER-PRICE
Third District

RON ROBERTS
Fourth District

BILL HORN
Fifth District

DATE: January 30, 2008

TO: Board of Supervisors

SUBJECT: AMEND ORDINANCE RELATED TO THE TRANSPORTATION IMPACT FEE AND ADOPT A RESOLUTION FUNDING REGIONAL TRANSPORTATION CONGESTION IMPROVEMENT PROGRAM (Districts: All)

SUMMARY:

Overview

The California Environmental Quality Act (CEQA) was changed in 2002 as a result of a court case which eliminated the "de minimus" exception to the requirement that development projects consider cumulative impacts. In response to this change in State law, on April 20, 2005 (10), your Board adopted an interim Transportation Impact Fee (TIF) to provide developers a mechanism for complying with requirements of CEQA related to identification and mitigation of cumulative traffic impacts. The program allows developers to contribute a fair share to fund infrastructure improvements needed to serve their projects. TIF funds, when combined with public funds to correct existing capacity deficiencies, help to ensure the public has a transportation system that operates at an acceptable level of service throughout the unincorporated County.

On November 7, 2007 (1), your Board directed the Chief Administrative Officer to address a series of questions about the TIF, incorporate these findings into the County's TIF review, and bring back TIF program recommendations to encourage commercial and industrial development in the unincorporated areas of San Diego County.

This item is a request to adopt an ordinance amending the Transportation Impact Fee Ordinance. Amendments will allow for 1) reduced TIF rates and simplified process for determining the fee for commercial and industrial projects, 2) reduced or marginally increased TIF rates for residential projects, 3) inclusion of freeway interchange ramps, and 4) clarified language related to road network elements and reimbursement agreements.

As a result of a TIF study performed for this proposed action, the amount of funding required for County TIF facilities has been reduced from $1,054 million to $826 million which is a reduction of $228 million to the revenue necessary to fully fund the TIF

program. The net result of these proposed actions is an average 40% reduction in TIF rates for non-residential development projects and a significantly simplified procedure for determining a project's fee. For residential projects, proposed rate changes range from a reduction of 28% to an increase of 3.5% or less. Adjustments similar to those used for non-residential uses were applied where possible. To simplify and expedite determination of a non-residential project fee, the following changes are proposed:

- The fee will be calculated in one step by multiplying the proposed project's gross floor area by a cost per square foot.
- The number of non-residential land uses for which trip generation rates are proposed will be reduced from over 100 to six to reduce the subjectivity associated with determining the applicable trip generation factor.
- Non-residential rates will be reduced across the board rather than requiring a project-by-project offset calculation based on engineering estimates of eligible direct mitigation improvements.

This item also includes a resolution providing for Regional Transportation Congestion Improvement Program funding to confirm compliance with the TransNet Extension Ordinance approved on November 2, 2004. Starting on July 1, 2008, the County must exact $2,000 from new developments for each newly constructed residential unit in the unincorporated areas to fund the Regional Transportation Congestion Improvement Program. Collection of TIF as proposed will satisfy the County's obligations under this Program, so no new fee or fee increase associated with the requirement is necessary. Once approved, this resolution will be submitted to SANDAG's Independent Taxpayer Oversight Committee for review by April 1, 2008.

Recommendation(s)
CHIEF ADMINISTRATIVE OFFICER

1. Find that proposed action is exempt from requirements of the California Environmental Quality Act (CEQA), as specified in Section 15273(a)(4) of CEQA Guidelines, as fees collected from this action will be used for transportation infrastructure necessary to maintain service within existing service areas and collection of these fees will not result in a direct or reasonably foreseeable indirect physical change to the environment. Before the location and extent of transportation improvement projects are finalized by future County actions, alternatives, environmental impacts and mitigation will be addressed.

2. Approve introduction (first reading), read the title and waive further reading of an ordinance entitled:

   AN ORDINANCE TO AMEND THE SAN DIEGO COUNTY CODE RELATED TO THE TRANSPORTATION IMPACT FEE

Submit the Ordinance for further Board consideration and adoption (second reading) on February 27, 2008.

3. Adopt a resolution entitled Resolution of The County of San Diego Board of Supervisors Adopting a Funding Program for Regional Transportation Congestion Improvement Program.

4. Direct the Chief Administrative Officer to return to the Board with recommended TIF amendments, upon adoption of the General Plan Update or any other significant modification to the General Plan, to assure TIF is aligned with any changes to the Circulation Element.

Fiscal Impact
The requested actions, to adopt Transportation Impact Fees ordinance changes and to adopt a Funding Program for Regional Transportation Congestion Improvement Program, will have no current year fiscal impact and will require no additional staff years. Both programs will provide revenue to help the County mitigate the impacts of new development on the County's roads.

Business Impact Statement
Approval of these fees will provide developers a mechanism for complying with requirements of CEQA related to identification and mitigation of cumulative traffic impacts. The program will allow developers to contribute a fair share to fund infrastructure improvements needed to serve their projects. The proposed actions will result in an average 40% reduction in TIF rates for non-residential development projects and a significantly simplified procedure for determining a project's fee. These actions should encourage commercial and industrial development in the unincorporated areas of San Diego County. For residential projects, to keep the TIF program viable for CEQA cumulative impact mitigation purposes, while adding freeway cumulative impacts and, where possible, applying some of the same adjustments described above for non-residential rates, the proposed rate changes range from a reduction of 28% to an increase of 3.5% or less.

Advisory Board Statement
Draft work products were reviewed with stakeholders and interested parties, and input received during this process was considered in the program reports.

BACKGROUND:
On April 20, 2005 (10), the Board adopted the Transportation Impact Fee (TIF) for all communities in the unincorporated county to provide construction funding for transportation facilities needed to support traffic generated by new development. Since then, there have been two amendments to the Ordinance: On October 19, 2005 (8), to add a segment of State Route 76 to the North Region, and on December 7, 2005 (3), to clarify language. On November 7, 2007

(1), your Board directed the Chief Administrative Officer to address each question provided in the Board letter; incorporate these findings into the County's TIF review; and bring back to the Board of Supervisors recommendations that will change the TIF program to encourage commercial and industrial development in the unincorporated areas of San Diego County.

TIF Update Methodology
The County of San Diego Transportation Impact Fee Report Update is based on the methodology and land use assumptions outlined in the original TIF Reports. The TIF program was evaluated to determine potential TIF road network cost savings, to consider other revenue sources, and to review other program changes needed to simplify the overall TIF process. To address the need for projects to mitigate cumulative impacts to freeway interchanges, this update adds freeway ramp improvements to the TIF program. To resolve questions regarding definition of some TIF facility segments, additional detail is provided to clarify roadway segments included in the TIF program. As a result of a TIF study performed for this proposed action, the amount of funding required for County TIF facilities has been reduced from $1,054 million to $826 million which is a reduction of $228 million to the revenue necessary to fully fund the TIF program.

The fee will be calculated in one step by multiplying the proposed project's gross floor area by a cost per square foot. To reduce subjectivity associated with determining which trip generation factor is applicable to a project, the number of non-residential land uses for which rates are proposed will be reduced from over 100 to six. Non-residential rates will be reduced across the board rather than requiring a project-by-project offset calculation based on engineering estimates of direct mitigation improvements. Non-residential rate reductions are achieved through cost reductions from planned adjustments to public road standards, removing direct impact construction costs, aligning TIF facilities with the most recent General Plan Update road network, and applying approximately $5.5 million of annual future development capacity expected to result from capital projects constructed primarily to address existing deficiencies.

For non-residential (commercial and industrial) projects, this proposed update replaces the current multiple step fee determination procedure, which consists of calculating the number of vehicle trips (as determined by applying a trip generation factor or traffic study), multiplying the number of trips by the TIF program cost per trip, and then reducing the calculated result by the value of eligible direct impact mitigation costs based on engineering cost estimates of improvements required to mitigate the project's direct impacts.

For residential projects, changes were made to ensure the TIF program continues to meet CEQA cumulative impact mitigation requirements. Amendments also add freeway cumulative impacts and where possible apply some of the same adjustments used for non-residential rates. Proposed rate changes range from a reduction of 28% to an increase of 3.5% or less.

Coordination with General Plan Update
The proposed TIF Update and associated fees and facilities do not conflict with current General Plan update efforts. Upon adoption of the General Plan Update or any other significant

modification to the General Plan, the TIF program will be reviewed to determine if the development forecast, traffic modeling, and funding requirements to address future roadway demands are in need of modifications.

Regional Transportation Congestion Improvement Program
On November 2, 2004, voters of San Diego County approved a 40-year extension to the TransNet funding program. Pursuant to Section 9 of the TransNet Extension Ordinance, the County shall exact, starting on July 1, 2008, $2,000 from new developments for each newly constructed residential unit in the unincorporated areas of the county to fund the Regional Transportation Congestion Improvement Program (RTCIP). This funding contribution shall be adjusted annually, starting July 1, 2009.

Collection of TIF as proposed will satisfy the County's obligations to collect $2,000 per new residential unit required under the RTCIP, so no new fee or fee increase associated with the RTCIP requirement is necessary. To satisfy the RTCIP requirement, the applicable portion of TIF revenues will be expended on improvements to Regional Arterial System (RAS) projects in a manner consistent with most recently adopted Regional Transportation Plan (RTP). SANDAG approved the latest RTP in November 2007, and it includes 65 County RAS road segments eligible to receive RCTIP funds.

This item includes a recommendation to adopt a resolution providing for Regional Transportation Congestion Improvement Program funding to comply with the TransNet Extension Ordinance. Once approved, this resolution will be submitted to SANDAG's Independent Taxpayer Oversight Committee for review by April 1, 2008.

Environment Statement
Actions requested are exempt from CEQA requirements, as specified in Section 15273(a)(4) of CEQA Guidelines, as the fees collected from this action will be used for transportation infrastructure necessary to maintain service within existing service areas. Collection of these fees will not result in a direct or reasonably foreseeable indirect physical change to the environment. This item involves approval of a financing mechanism for future transportation improvements. Before the location and extent of transportation improvement projects are delineated and finalized by future County actions, environmental impacts and mitigations will be addressed.

Linkage to the County of San Diego's Strategic Plan
The County's Five Year Strategic Plan includes an Environment Initiative with an objective to reduce environmental risk through education, outreach, regulation, intergovernmental collaboration and leveraging public and private resources. Actions requested today will help fulfill this initiative by enacting a program that will help developers to comply with CEQA.

SUBJECT: AMEND ORDINANCE RELATED TO THE TRANSPORTATION IMPACT FEE AND ADOPT A RESOLUTION FUNDING REGIONAL TRANSPORTATION CONGESTION IMPROVEMENT PROGRAM (Districts: All)

Respectfully submitted,

Chandra Wallar

CHANDRA L. WALLAR
Deputy Chief Administrative Officer

ATTACHMENTS

Attachment A – Questions and Responses from the November 7, 2007 Board Direction

Attachment B – Informational and Clean Copies of Ordinance related to Transportation Impact Fee

Attachment C – Transportation Impact Fee Report

Attachment D – Resolution of The County of San Diego Board of Supervisors Adopting Funding Program for Regional Transportation Congestion

SUBJECT: AMEND ORDINANCE RELATED TO THE TRANSPORTATION IMPACT FEE AND ADOPT A RESOLUTION FUNDING REGIONAL TRANSPORTATION CONGESTION IMPROVEMENT PROGRAM (Districts: All)

AGENDA ITEM INFORMATION SHEET

CONCURRENCE(S)

COUNTY COUNSEL REVIEW	[X] Yes	
Written disclosure per County Charter §1000.1 required?	[] Yes	[X] No
GROUP/AGENCY FINANCE DIRECTOR	[X] Yes	[] N/A
CHIEF FINANCIAL OFFICER	[X] Yes	[] N/A
Requires Four Votes	[] Yes	[X] No
GROUP/AGENCY INFORMATION TECHNOLOGY DIRECTOR	[] Yes	[X] N/A
COUNTY TECHNOLOGY OFFICE	[] Yes	[X] N/A
DEPARTMENT OF HUMAN RESOURCES	[] Yes	[X] N/A

Other Concurrence(s):

ORIGINATING DEPARTMENT: Public Works

CONTACT PERSON(S):

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AUTHORIZED REPRESENTATIVE: _____
JOHN L. SNYDER, Director

SUBJECT: AMEND ORDINANCE RELATED TO THE TRANSPORTATION IMPACT FEE AND ADOPT A RESOLUTION FUNDING REGIONAL TRANSPORTATION CONGESTION IMPROVEMENT PROGRAM (Districts: All)

AGENDA ITEM INFORMATION SHEET
(continued)

PREVIOUS RELEVANT BOARD ACTIONS:
November 7, 2007 (1), Directed the Chief Administrative Officer to address a series of questions about the TIF, incorporate these findings into the County's TIF review, and bring back TIF program recommendations to encourage commercial and industrial development in the unincorporated areas of San Diego County.
December 14, 2005 (14), Adopted an Ordinance amending the County Code related To Transportation Impact Fees to reference the SANDAG Guide of Vehicular Traffic Generation Rates for the San Diego Region; and 2) simplify and clarify language related to calculation of credits and reductions.
October 19, 2005 (8), Added State Route 76 between I-15 and Couser Canyon Road, and ramps east of I-15 to the list of TIF Facilities and adopted a policy to Adoption of a policy to reduce TIF fees for commercial development. Referred to the Fiscal Year 2006-07 budget process.
April 20, 2005 (10), Adopted TIF Ordinance
April 13, 2005 (1), 1st reading of the TIF Ordinance and directed CAO to create a program to reduce fees on commercial projects.
January 12, 2005 (1), Continued consideration of TIF adoption for 90 days.
May 5, 2004 (5), Authorized development of TIF for Fallbrook and Ramona.
February 25, 2004 (3), Details on pilot TIF program for Ramona continued for 60 days
September 17, 2003 (10), Received feasibility report of TIF for Ramona and Directed CAO to develop program details.
June 12, 2002 (17), Approved consultant contract for TIF assessment engineering services.
April 17, 2002 (17), Approved Final Map for Tract 4844-1 and directed CAO to investigate feasibility of TIF for Ramona.

BOARD POLICIES APPLICABLE:
N/A

BOARD POLICY STATEMENTS:
N/A

CONTRACT AND/OR REQUISITION NUMBER(S):

COUNTY OF SAN DIEGO

TRANSPORTATION IMPACT FEE

TIF PROGRAM UPDATE

JANUARY 2008

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EXECUTIVE SUMMARY

BACKGROUND

Working with stakeholder groups, the County of San Diego (County) identified the need to develop a County transportation impact fee (TIF) program to mitigate the cumulative traffic impacts of development throughout the unincorporated areas of the County. The TIF program, approved by the Board of Supervisors in 2005 pursuant to the provisions of Government Code §§ 66000 et seq. (Mitigation Fee Act or the "Act"), funds the improvement and/or construction of identified transportation facilities and allocates the associated costs equitably among future developing properties. The TIF program does not collect funding to address existing roadway deficiencies.

The 2008 TIF Update utilizes the same core methodology and land use assumptions as the 2005 TIF program as outlined in prior reports titled "County of San Diego Transportation Impact Fee Report" dated January 2005, "Fallbrook and Ramona Transportation Impact Fee Report" dated January 2005 and the addendums to the reports dated March 2005 and September 2005 (collectively referred to as "Prior Reports").

PURPOSE

The purpose of this report is to document recommendations for updating the 2005 TIF program pursuant to the provisions of the Act. The current update focused on the following:

- Evaluating the non-residential rates
- Evaluating potential cost savings and/or other revenue sources
- Adding freeway interchanges/ramps and at-grade highway intersections to the TIF program
- Identifying program changes to facilitate easier administration
- Providing additional detail regarding TIF roadway segment limits

The overall objectives of the update included 1) preserving the integrity of the TIF program, and 2) maintaining CEQA compliance regarding cumulative impacts.

RECOMMENDED TIF RATES

The TIF program differentiates between "local" transportation facilities (collectors and minor streets) that benefit primarily the community in which they are located, and "regional" facilities (state routes, prime arterials, major roads, and other regionally significant roadways) that benefit both the community and surrounding area – in this case identified as the North, South or East regions. A different TIF rate is applied to each community based upon growth and related transportation needs. The rates are comprised of a local component and a regional component. The interchange/ramp and highway intersection improvements are identified as "regional" facilities within each of the three regions.

Based on recommended program adjustments, cost reductions and additional revenues, $826 million of revenue will need to be generated by the TIF program. The recommended update and resulting changes result in residential rates increasing by no more than three and one-half percent (3.5%) measured by cost per single family dwelling unit with the non-residential rates (measured by cost per trip) decreasing by 40% or more.

The update resulted in the following facility costs and recommended TIF rates:

- Local facilities totaling $370 million were identified, including streets of collector classification and below. This resulted in local TIF rates varying by community plan area (CPA) from $0 to $5,940 per single family dwelling unit.

- Regional facilities totaling $645 million were identified, including state routes, prime arterials, and major roads. This resulted in regional TIF rates per single family home of $5,942 for the North region, $3,294 for the South region, and $2,195 for the East region.

- Regional freeway interchange/ramp facilities costing a total of $303 million of which $105 million are related to growth were identified. Ten percent, typical of a local match, (or $10.5 million) in costs were identified to be included in the TIF program. This resulted in an additional component to the regional TIF rate of $41 for the North region, $150 for the South region, and $3 for the East region per single family home.

- Combining the local and regional components, total TIF rates vary from $2,199 to $12,295 per single family home.

As stated in the 2005 Report, further studies, including required environmental review, may result in the identification of different project alternatives with different costs. An update to the TIF program will likely be needed upon completion of the General Plan Update currently in progress. In addition, the TIF rates are indexed to adjust annually each January to keep up with future changes in the costs of construction.

INTRODUCTION

OVERVIEW

The County of San Diego (County) identified the need for additional transportation improvements to address the projected cumulative traffic impacts of future development within the unincorporated area (see **Figure 1**). In 2005, the Board of Supervisors approved a transportation impact fee (TIF) program. The purpose of the TIF program is to fund construction of identified transportation facilities, and allocate the costs equitably among future developing properties.

TRANSPORTATION IMPACT FEES

An impact fee is a commonly used and well-accepted means of mitigating the impacts to public facilities and infrastructure created by future growth. As part of the TIF program process, the transportation infrastructure needs were characterized as either existing deficiencies, direct impacts of future development, or indirect (cumulative) impacts of future development. Existing roadway deficiencies are the responsibility of existing developed land uses and government agencies and can not be financed with impact fees. The proposed TIF program is not intended to mitigate direct impacts which will continue to be the responsibility of individual development projects. The TIF program therefore is designed to address the cumulative impacts associated with new growth.

The rationale supporting development of the County TIF program is future development in the unincorporated area being required by law to mitigate cumulative traffic impacts on the County's road network. Without a TIF, future development would cause a continued decrease in roadway level-of-service with overall network capacity falling behind the needs of future growth. A TIF program is a suitable mechanism for identifying needed transportation facilities to mitigate these cumulative traffic impacts and allocating the associated costs in an equitable manner.

This report is an update to the Prior Reports. The County TIF program assesses the fee on all new development that results in new/added traffic. The primary purpose of the TIF is twofold: (1) to fund the construction of identified facilities needed to reduce, or mitigate, projected cumulative traffic impacts resulting from future development within the County; and (2) to allocate the costs of these facilities proportionally among future developing properties based upon traffic contribution.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

The California Environmental Quality Act (CEQA) requires state and local agencies to identify the significant environmental impacts of their actions and to avoid or mitigate those impacts. To that end, local agencies generally require that a project's potential direct and cumulative impacts and corresponding mitigation measures, be identified as part of the required environmental review process.

CUMULATIVE IMPACTS

Cumulative impacts are those impacts caused collectively by all development within the community. Cumulative impacts can result from individually minor, but collectively significant projects taking place over a period of time (CEQA Guidelines §15355). The CEQA Guidelines recognize that mitigation for cumulative impacts may involve the adoption of ordinances or regulations (CEQA Guidelines §15130).

Recognizing that an individual development project is not wholly responsible for cumulative traffic impacts, each development project is required to contribute to mitigation in proportion to the project's estimated traffic generation. This report proposes the continued use of the TIF to fund improvements to identified transportation facilities in response to the total projected cumulative traffic impacts associated with future development within the County. Transportation facilities and other infrastructure necessary to either address existing deficiencies or mitigate the direct impacts of a given development project are not within the scope of the TIF.

ENVIRONMENTAL STUDIES & REVIEW

The facilities identified in this report are intended to provide increased road capacity to mitigate the cumulative traffic impacts of future development. No facilities will actually be constructed until all necessary environmental reviews have been conducted. Further studies, including environmental review, may show superior alternative projects that also satisfy the increased capacity need.

EXEMPTION FROM CEQA REQUIREMENTS

The fees collected through the TIF will be used for capital projects for transportation infrastructure projects necessary to maintain service within the unincorporated County. The County has determined that the act of adopting the proposed County TIF program and establishing the proposed TIF rates is statutorily exempt from the requirements of CEQA under §15273(a)(4) of the CEQA Guidelines.

STATUTORY FRAMEWORK

Development and implementation of impact fees must conform to the statutory requirements of California Government Code §§66000 et seq. (commonly referred to as the "Mitigation Fee Act"). Prior to establishing, increasing or imposing an impact fee, the Mitigation Fee Act requires the local agency to make the following findings:

- Identify the purpose of the fee (§66001(a) (1)).
- Identify the use for the fee and the facilities to be built (§66001(a) (2)).
- Determine a reasonable relationship between the fee's use and the type of development project on which the fee is imposed (§66001(a) (3)).
- Determine a reasonable relationship between the need for the public facility and the type of development project (§66001(a) (4)).
- Determine a reasonable relationship between the amount of the fee and the cost of the facility attributable to development (§66001(b)).

For purposes of the County TIF program, a statement of requisite findings is presented in the "Program Implementation" section of this report.

FEE DEVELOPMENT PROCESS

The remainder of this report summarizes the basis for the TIF program and the recommended changes resulting in updated fee rates:

- Development Forecast
- Facilities and Costs
- Fee Methodology
- Funding Requirements
- Proposed Fee Schedule
- Program Implementation

TIF ANALYSIS

This report documents recommendation for updating to the 2005 TIF program. Unless otherwise outlined in the report, growth and facility needs are the same as identified in the Prior Reports. This section reiterates the trip growth forecast and required roadway facilities to suitably address cumulative traffic impacts. The 2008 TIF Update report also describes the changes to the program including:

- Identified program cost reductions due to changing roadway standards.
- Costed Direct Project mitigations by non-residential projects.
- Identified additional revenue available to the County to offset the costs to non-residential projects.
- Clarified TIF roadway segment limits.
- Revised TIF rate tables.

GROWTH FORECAST

Analysis of land use changes between 2004 and build-out, as outlined in the Prior Reports, provided the basis for determining both the amount of expected future development and the types of transportation improvements needed to address cumulative traffic impacts consistent with the SANDAG Transportation Model. For fee calculation purposes, uniform trip generation rates per land use category were applied to the various land uses to estimate growth related trips and equitably allocate the fee between the various land uses. Based on typical trip generation rates, shown in **Table 1**, and the identified forecast growth, both identified in the Prior Reports, the trips attributable to future development are shown in **Table 2**.

TABLE 1
TRIP GENERATION RATES

LAND USE	Trip Rate (1)
Single Family Residential	12 trips/unit
Multi-Family Residential	5 – 8 trips/unit
Commercial/Services	360 trips/acre
Industrial	150 trips/acre
Office	300 trips/acre
Parks	5 trips/acre
Roads & Freeways	0 trips/acre
Schools	50 trips/acre

(1) Based on adopted County TIF program.

TABLE 2
FORECAST TRIPS ATTRIBUTABLE TO FUTURE DEVELOPMENT

Community Planning Area	Forecast Trips by TIF Region (1)		
	North	South	East
Alpine		76,176	
Bonsall	33,852		
Central Mountain			7,992
County Islands		4,884	
Crest-Dehesa		6,468	
Desert			322,860
Fallbrook (2)(3)	166,140		
Jamul-Dulzura		74,676	
Julian			11,220
Lakeside		153,492	
Mountain Empire			112,092
North County Metro	184,992		
North Mountain			18,480
Otay		232,752	
Pala-Pauma	48,504		
Pendleton-De Luz	5,100		
Rainbow	27,912		
Ramona(2)			138,144
San Dieguito	117120		
Spring Valley		50,892	
Sweetwater		15,072	
Valle De Oro		21,348	
Valley Center	130,344		
TOTAL FUTURE TRIPS	**713,964**	**635,760**	**610,788**

(1) Forecast trips based on build-out projections per the 2005 TIF program.

(2) Fallbrook local rate based on 160,992 trips for 2004 to 2030 and Ramona local rate based on 118,824 trips for 2004 to 2030.

(3) An additional 5,076 trips is reflected for North Region (Fallbrook) based on the September 2005 Addendum (423 EDUs x 12 trips/EDU).

Trip generation rates are commonly used to apportion the benefits associated with transportation infrastructure improvements. Note that the Prior Reports made reference to Equivalent Dwelling Units (1 equivalent dwelling unit equaling 12 trips), but for simplicity this report references trips instead.

FACILITIES AND COSTS

The SANDAG Regional Transportation Model was utilized to analyze base year (Year 2000) and projected build-out development conditions on the roadway network throughout the unincorporated area of the County. The TIF modeling assumptions for the road network and projected land uses are summarized in the Prior Reports.

A list of County TIF program facilities (deficient Base Year road segments) is contained in **Appendix A**. The facilities identified in this report are intended to address future deficiencies in road capacity caused by the cumulative traffic impacts of future development. Further studies, including required environmental reviews, may result in the identification of other alternatives for dealing with cumulative traffic impacts. The County TIF program may be periodically reviewed and/or amended to permit funding the construction of these alternatives. The Appendix identifies the roadway segments and provides additional detail as to TIF roadway segment limits.

FREEWAY INTERCHANGES/RAMPS & AT-GRADE HIGHWAY INTERSECTIONS

As part of this update, the County identified specific Freeway ramp interchanges and at-grade highway intersections to be funded in part by the TIF program. These facilities were not included in the Prior Reports. Based on currently available traffic data, a number of freeway ramp interchanges and at-grade highway intersections were identified as necessary to accommodate growth. **Table 3** identifies the facility location, the percent of total 2030 traffic related to growth, and the resulting amount to be funded via the TIF program. Addition of these improvements will enable projects to meet its obligations regarding cumulative impacts via the TIF program. It should be noted that the overall cost is estimated on a per Region basis, recognizing that some of the costs will likely exceed the estimate while others may be lower than shown in the table.

Only 10% of future growth's costs for freeway interchanges/ramps are recommended to be included in the program. This percentage is representative of the typical local match required when competing for funds for these State highway improvements. Addition of these improvements will enable projects to meet their obligations regarding cumulative impacts via the TIF program. It should be noted that the overall cost is estimated on a per Region basis, recognizing that some of the costs will likely exceed the estimate while others may be lower than shown in the table.

TABLE 3
INTERCHANGES AND COSTS

Location	County Growth (%)	Proportional Cost	Region
I-8 EB/Lake Jennings Park Rd	45%	$516,000	South
I-8 WB/Lake Jenning Park Rd	49%	561,000	South
I-8 EB/Dunbar Ln	54%	618,000	South
I-8 WB/Dunbar Ln	57%	654,000	South
I-8 EB/Tavern Rd	40%	459,000	South
I-8 WB/Tavern Rd	58%	667,000	South
I-8 EB/W. Willows Rd	60%	686,000	South

Location	County Growth (%)	Proportional Cost	Region
I-8 WB/W. Willows Rd	65%	751,000	South
I-8 EB/Greenfield Dr. (El Cajon)	1%	7,000	South
I-8 WB/Greenfield Dr. (El Cajon)	3%	29,000	South
I-15 NB/E. Mission Rd	36%	418,000	North
I-15 SB/E. Mission Rd	36%	411,000	North
I-15 NB/Gopher Canyon Rd	39%	451,000	North
I-15 SB/Gopher Canyon Rd	6%	65,000	North
I-15 NB/Deer Springs Rd	54%	627,000	North
I-15 SB/Deer Springs Rd	41%	470,000	North
SR-67 NB/Bradley Ave	11%	130,000	South
SR-67 SB/Bradley Ave	14%	164,000	South
SR-67 NB/Winter Gardens Blvd	12%	135,000	South
SR—67 SB Winter Gardens Blvd	25%	291,000	South
SR-67 NB/Riverford Rd	31%	352,000	South
SR-67 SB/Riverford Rd	43%	499,000	South
SR-67 NB/Mapleview St	33%	378,000	South
SR-67 SB/Mapleview St	34%	396,000	South
SR-67/Archie Moore Rd (Ramona) (2)	31%	40,000	East
SR-67/Montecito Rd (Ramona) (2)	39%	51,000	East
SR-67/SR-78 (Ramona) (2)	38%	49,000	East
SR-94 EB/Sweetwater Springs Blvd	26%	299,000	South
SR-94 WB/Sweetwater Springs Blvd	29%	335,000	South
TOTAL COST OF GROWTH		**$10,509,000**	

(1) Cost based on $11,500,000 per interchange intersection except as outlined in note (2) below.

(2) Costs for SR-67 at Archie Moore, Montecito, SR 78 in Ramona based on $130,000 perat-grade highway intersection.

(3) South Region totals $7,927,000, North Region total $2,442,000 and the East Region totals $140,000.

REGIONAL AND LOCAL COSTS

Table 4 outlines the planning level costs associated with the TIF program based on the cost assumptions outlined in the Prior Reports and then increased by ENR-CCI. These planning-level costs were based in part on estimates made in SANDAG's Regional Transportation Plan and include all planning, design, right-of-way, environmental, construction and program administration (2%) costs. Based on available information, these planning level costs are sufficient to include intersections along the facilities and at the endpoints of the TIF facilities, including signalization.

TABLE 4
COST OF FACILITIES ATTRIBUTABLE TO FUTURE DEVELOPMENT

Community Planning Area	Estimated Cost (in millions)				
	Regional (1)			Local	TOTAL
	State Route	Prime Arterial	Major Road(2)	Collector & Below	
Alpine		$0.63	$1.13	$11.50	$13.26
Bonsall	77.61		30.67	17.81	126.10
Central Mountain	0.89				0.89
County Islands					0
Crest-Dehesa			24.82	.54	25.36
Desert				8.31	8.31
Fallbrook	27.82		67.91	81.69	177.42
Jamul-Dulzura	90.10			13.56	103.66
Julian					
Lakeside		.87	1.78	51.51	54.16
Mountain Empire	24.62				24.62
North County Metro	35.64	18.96		26.54	81.14
North Mountain	22.74				22.74
Otay		56.64		12.79	69.43
Pala-Pauma	20.97			4.76	25.73
Pendleton-De Luz		5.95		0	5.95
Rainbow				10.38	10.38
Ramona (3)	30.79		33.65	58.80	123.23
San Dieguito		7.28	.28	31.64	39.20
Spring Valley		.01		2.81	2.82
Sweetwater				1.64	1.64
Valle De Oro	.03			8.20	8.24
Valley Center		29.52	1.07	27.95	58.55
Misc. North Region	32.83				32.83
TOTAL COSTS	**$364.04**	**$119.86**	**$161.32**	**$370.44**	**$1015.65**

(1) Refer to Prior Reports regarding Regional facility costs reduction of 7% to account for future traffic volumes not attributable to development within the unincorporated area.

(2) Major and other regionally significant roadways.

The table reflects a reduction to the costs for the East region based upon review of the SANDAG Transportation Model output and roadway needs resulting in a reduction of the estimated cost of Regional lane-miles to $0.89 million for the Central Mountain CPA.

Of the costs identified in the table, it is estimated that approximately $75.0 million is associated with the direct impacts of non-residential properties within the County. As part of the 2008 TIF update, it is recommended that the $75.0 million be credited to the non-residential properties in lieu of those projects requesting reimbursements for direct impact improvements on TIF roadways. This credit is reflected in the non-residential Regional rates.

Based on the continuing efforts to update the County's General Plan, including the Circulation Element, cost savings related to anticipated roadway design standards that eliminate parking on certain roadways have also been quantified. Note that such a change would not affect the capacity of the roadway. The savings is estimated to be $5.05 million in the Regional costs and is reflected in the rates.

FEE METHODOLOGY

The TIF program apportions the costs of the proposed transportation improvements equitably to future development projects based on typical trip generation rates. The program recognizes certain "local" transportation facilities (collectors and minor streets) benefit primarily the community in which they are located, while "regional" facilities (state routes, prime arterials, major roads and interchanges/ramps) benefit both the community and surrounding areas. Therefore, a portion of the total TIF fee was calculated based on the cost of local facilities and apportioned to development only within the boundary of each community (**Figure 1**), while the remainder of the fee was calculated based on the need for regional facilities and apportioned to development within three TIF Regions covering the unincorporated areas of the County. Those three regions are shown in **Figure 2** and are labeled North, South and East.

LOCAL FACILITIES

Each community's TIF rate includes a Local TIF Rate and a Regional TIF Rate. The purpose of the Local TIF Rate is to apportion eligible costs of local TIF facilities (i.e., collectors and other minor roads) to future growth within the community. Total estimated local facility costs, projected local growth within the community, and calculated Local TIF Rates are summarized in **Table 5**.

TABLE 5
LOCAL FACILITY COSTS & TIF RATES

Community Plan Area	Local Cost (1) ($ millions)	Local Growth (trips)	Local TIF Rate (per trip)(2)(3)
Alpine	$11.50	76,176	$151
Bonsall	17.81	33,852	526
Central Mountain	0	7,992	0
County Islands	0	4,884	0
Crest-Dehesa	0.54	6,468	84
Desert	8.31	322,860	26
Fallbrook	81.69	160,992	507
Jamul-Dulzura	13.56	74,676	182
Julian	0	11,220	0
Lakeside (including Pepper Dr-Bostonia)	51.51	153,492	336

Community Plan Area	Local Cost (1) ($ millions)	Local Growth (trips)	Local TIF Rate (per trip)(2)(3)
Mountain Empire	0	112,092	0
North County Metro	26.54	184,992	143
North Mountain	0	18,480	0
Otay	12.79	232,752	55
Pala-Pauma	4.76	48,504	98
Pendleton-De Luz (4)	0	5,100	1
Rainbow	10.38	27,912	372
Ramona	58.80	118,824	495
San Dieguito	31.64	117,120	270
Spring Valley	2.81	50,892	55
Sweetwater	1.64	15,072	109
Valle De Oro	8.20	21,348	384
Valley Center	27.95	130,344	214

(1) Local facility costs eligible for TIF funding.
(2) TIF rates may vary from calculated table values due to rounding and display of significant digits.
(3) Cost reductions are not reflected.
(4) Pendleton-De Luz local cost equals 427 x $7 per the 2005 TIF report.

REGIONAL FACILITIES

The purpose of the Regional TIF Rate is to apportion eligible costs of regional TIF facilities (i.e., freeway interchanges/ramps, state routes, prime arterials, major roads, and other regionally significant roadways) to future growth within the applicable region. Total estimated regional facility costs, projected regional growth, and calculated Regional TIF Rates are summarized in **Tables 6 and 7**. Table 6 displays the portion of the Regional TIF rate apportioned to state routes, primes, and majors and Table 7 displays the portion of the Regional TIF rate apportioned to Freeway interchanges/ramps.

TABLE 6
REGIONAL FACILITY COSTS & TIF RATES (SRS/PRIME ARTERIALS/MAJOR ROADS)

TIF Region (1)	Regional Cost (2) ($ millions)	Regional Growth (trips)	Regional TIF Rate ($/trip) (3)
North	$356.27	713,964	$499
South	$176.14	635,760	$277
East	$112.40	610,788	$184

*(1) Refer to **Figure 2** for location of TIF Regions.*

(2) Portion of Regional facility costs related to SRs/prime arterials and major roads identified for TIF funding.

(3) Cost reduction for lane-miles in East region is reflected. Other cost reductions are not reflected.

TABLE 7
INTERCHANGE/RAMP COSTS & TIF RATES - REGIONAL

TIF Region (1)	Regional Cost (2)	Regional Growth (trips)	Regional TIF Rate ($/trip)
North	$2,442,000	713,964	$ 3.42
South	$7,927,000	635,760	$12.47
East	$ 140,000	610,788	$ 0.23

*(1) Refer to **Figure 2** for location of TIF Regions.*

(2) Interchange/ramp facility costs identified for TIF funding – Includes 10% Local Match.

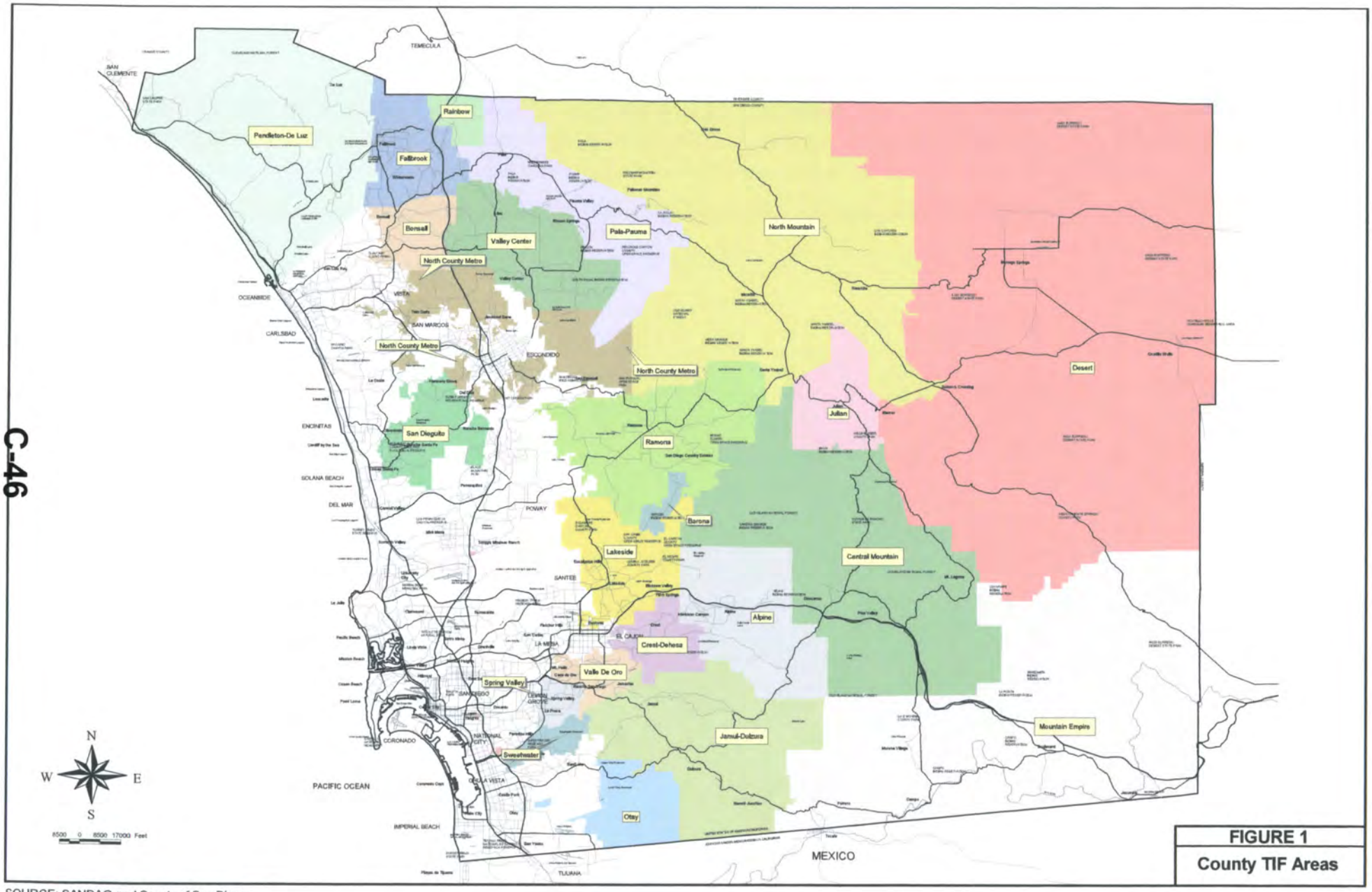

FIGURE 1
County TIF Areas

SOURCE: SANDAG and County of San Diego

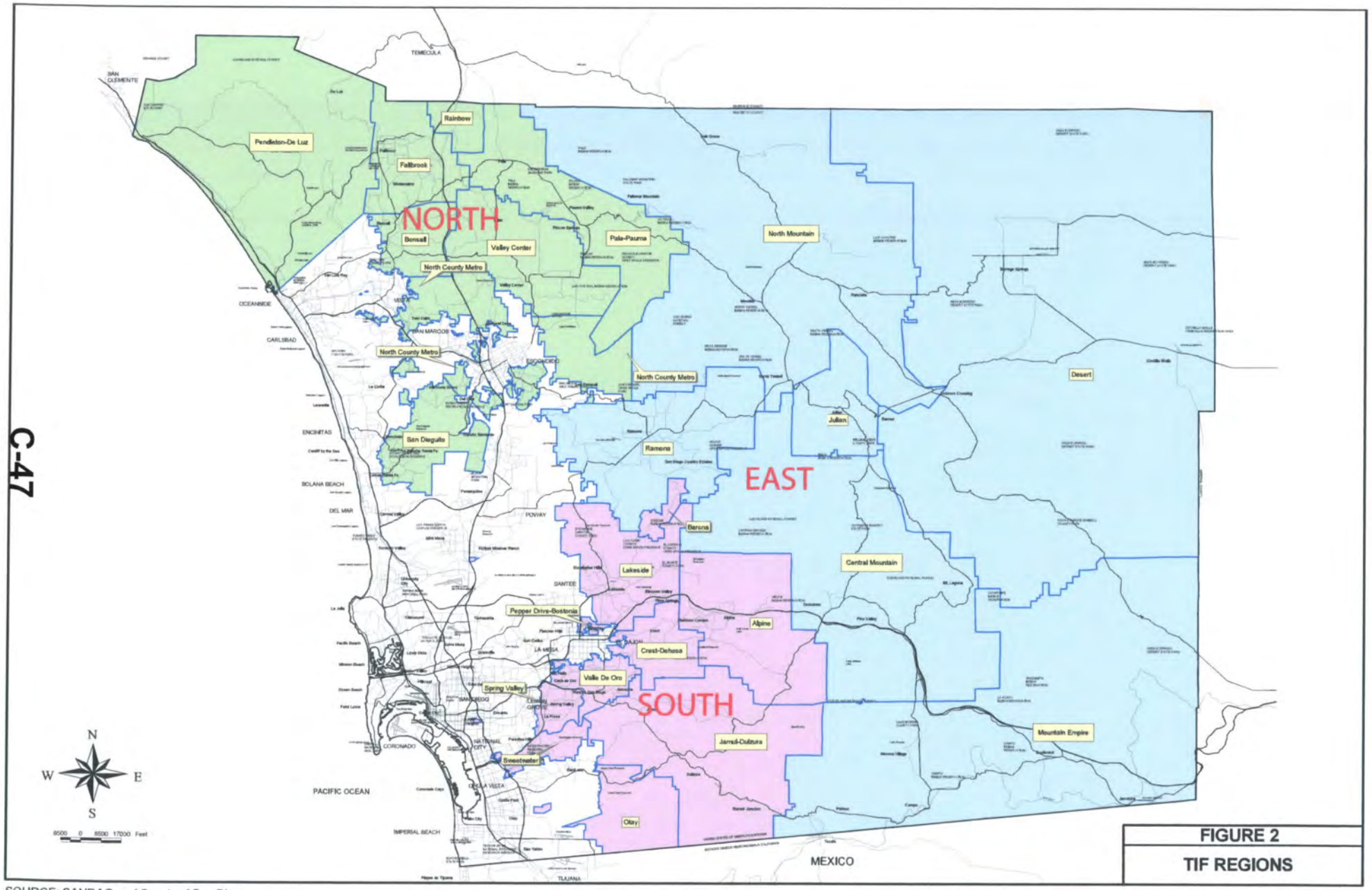

FIGURE 2

TIF REGIONS

SOURCE: SANDAG and County of San Diego

FUNDING REQUIREMENTS

In the typical County CIP road improvement project that is constructed for the purpose of addressing existing capacity deficiencies, excess capacity results due to the impracticality of constructing only partial lanes. It is estimated that the value of this capacity for future development averages $5.5 million annually. This value functions as a revenue to be included in the TIF program and as a policy decision, will be allocated to offset non-residential fee rates.

The overall financial requirements of the updated TIF program are identified in **Table 8.**

TABLE 8
TIF PROGRAM FINANCIAL REQUIREMENTS

Program Description	Cost (in millions)	Applicable Project Type
2008 Program	$1,053	Residential & Non-residential in each Region
Adjusted East Region lane-miles	-38.0	Residential & Non-residential in East Region
Freeway Included interchanges/ramps (10% local match)	10.5	Non-residential in each Region
Excluded non-residential direct impact costs	-74.5	Non-residential in each Region
Included cost savings for modified GP2020 roadway design standards	-5.05	Residential & Non-residential in each Region
Apply available CIP revenues	-121	Non-residential in each Region
TOTAL	**$826**	**TIF Funding Requirements**

Based on allocating the costs for local and regional facilities and reflecting the recommended program reductions, the cost per single family home and the cost per non-residential trip are identified in **Table 9** and **Table 10**, respectively.

TABLE 9
COST OF FACILITIES ATTRIBUTABLE TO FUTURE DEVELOPMENT - RESIDENTIAL

Community Planning Area By Region	Cost Per Single Family Home				Total
	Local	Regional	Interchange	Program Reduction(1)	
South Region					
Alpine	$1,812	$3,322	$150	(27)	$5,257
County Islands	0	3,322	150	(27)	3,445
Crest-Dehesa	1,008	3,322	150	(27)	4,453
Jamul-Dulzura	2,184	3,322	150	(27)	5,629
Lakeside	4,032	3,322	150	(27)	7,477
Otay	660	3,322	150	(27)	4,105
Spring Valley	660	3,322	150	(27)	4,105
Sweetwater	1,308	3,322	150	(27)	4,753

Community Planning Area By Region	Cost Per Single Family Home				Total
	Local	Regional	Interchange	Program Reduction(1)	
Valle de Oro	4,608	3,322	150	(27)	8,053
North Region					
Bonsall	6,312	5,990	41	(48)	12,295
Fallbrook	6,084	5,990	41	(48)	12,067
North County Metro	1,716	5,990	41	(48)	7,699
Pala-Pauma	1,176	5,990	41	(48)	7,159
Pendleton-De Luz	8	5,990	41	(48)	5,991
Rainbow	4,464	5,990	41	(48)	10,447
San Dieguito	3,240	5,990	41	(48)	9,223
Valley Center	2,568	5,990	41	(48)	8,551
East Region					
Central Mountain	0	2,214	3	(18)	2,199
Desert	312	2,214	3	(18)	2,511
Julian	0	2,214	3	(18)	2,199
Mountain Empire	0	2,214	3	(18)	2,199
North Mountain	0	2,214	3	(18)	2,199
Ramona	5,940	2,214	3	(18)	8,139

(1) Reflects program reductions for anticipated changes in roadway design standards..

TABLE 10
COST OF FACILITIES ATTRIBUTABLE TO FUTURE DEVELOPMENT – NON RESIDENTIAL

Community Planning Area By Region	Cost Per Trip				Total
	Local	Regional	Interchange	Program Reduction	
South Region					
Alpine	151	277	12	(184)	256
County Islands	0	277	12	(122)	167
Crest-Dehesa	84	277	12	(157)	216
Jamul-Dulzura	182	277	12	(196)	275
Lakeside	336	277	12	(259)	366
Otay	55	277	12	(145)	199
Spring Valley	55	277	12	(145)	199
Sweetwater	109	277	12	(167)	231
Valle de Oro	384	277	12	(278)	395

Community Planning Area By Region	Cost Per Trip				Total
	Local	Regional	Interchange	Program Reduction	
North Region					
Bonsall	526	499	3	(418)	610
Fallbrook	507	499	3	(410)	599
North County Metro	143	499	3	(263)	382
Pala-Pauma	98	499	3	(245)	355
Pendleton-De Luz	.66	499	3	(205)	298
Rainbow	372	499	3	(356)	518
San Dieguito	270	499	3	(314)	458
Valley Center	214	499	3	(291)	425
East Region					
Central Mountain	0	184	.23	(43)	141
Desert	26	184	.23	(44)	166
Julian	0	184	.23	(43)	141
Mountain Empire	0	184	.23	(43)	141
North Mountain	0	184	.23	(43)	141
Ramona	495	184	.23	(234)	445

(1) Reflects program reductions for anticipated changes in roadway design standards, cost reductions for Direct Impacts and County CIIP revenues of $121 million.

As already mentioned, the TIF program differentiates between local and regional facilities. The following facility costs and residential TIF rates were determined:

- Local facilities costing a total of $370 million were identified, including streets of collector classification and below. This resulted in local TIF rates varying by community from $0 to $5,940 per single family home (see Table 11).

- Regional facilities costing a total of $645 million were identified, including state routes, prime arterials, and major roads. This resulted in a component of the regional residential TIF rates of $5,942 for the North region, $3,294 for the South region, and $2,195 for the East region (see Table 11) per single family home.

- Regional facilities costing a total of $10.5 million were identified, including interchange intersections and ramps. This resulted in a component of the regional residential TIF rates of $41 for the North region, $150 for the South region, and $3 for the East region (see Table 11) per single family home

- Combining the local and regional components, total residential TIF rates vary from $2,198 to $12,295 in Bonsall (see Table 8).

PROPOSED FEE SCHEDULE

The TIF applicable to a given project will be based on estimated vehicular trip generation rates generally pursuant to Table 1. For residential projects, the fee is based on number and type of dwelling units. For non-residential projects, the fee is reflected as a cost per square foot. The current TIF program bases the project's TIF obligation on an average cost per trip multiplied by the number of trips. This update proposes to modify that approach by assigning a single trip generation rate per land use category (with several exceptions) and converting that to a cost per square foot basis for non-residential projects. There are two advantages to making this change. First, the approach more closely reflects the trip generation assumption in the 2005 TIF program and the SANDAG Transportation Model, and secondly, it should significantly simplify fee calculations for project applicants.

Table 11 summarizes the proposed total TIF rates for each community within the County based on the local and regional TIF rates identified in Tables 5, 6 and 7. The rates reflect the aforementioned program reductions and county funding.

TABLE 11
PROPOSED TOTAL TIF RATES PER SINGLE FAMILY DWELLING (SFD)

Community Plan Area	Local TIF Rate	Regional TIF Rate	Regional Interchange /Ramp TIF Rate	Total TIF Rate (1)
Alpine	$1,812	$3,294	$150	$5,256
Bonsall	6,312	5,942	41	12,295
Central Mountain	0	2,195	3	2,198
County Islands	0	3,294	150	3,444
Crest-Dehesa	1,008	3,294	150	4,452
Desert	312	2,196	3	2,511
Fallbrook	6,084	5,942	41	12,067
Jamul-Dulzura	2,184	3,294	150	5,628
Julian	0	2,195	3	2,198
Lakeside	4,032	3,294	150	7,476
Mountain Empire	0	2,195	3	2,198
North County Metro	1,716	5,942	41	7,699
North Mountain	0	2,195	3	2,198
Otay	660	3,294	150	4,104
Pala-Pauma	1,176	5,,942	41	7,159
Pendleton-De Luz	8	5,942	41	5,991
Rainbow	4,464	5,942	41	10,447
Ramona	5,940	2,196	3	8,139
San Dieguito	3,240	5,942	41	9,223
Spring Valley	660	3,294	150	4,104

Community Plan Area	Local TIF Rate	Regional TIF Rate	Regional Interchange /Ramp TIF Rate	Total TIF Rate (1)
Sweetwater	1,308	3,294	150	4,752
Valle De Oro	4,608	3,294	150	8,052
Valley Center	2,568	5,942	41	8,551

(1) The rate for a multi-family home is 67% of the single-family rate, senior housing is 33% of the single-family rate and congregate care is 20% of the single-family rate based on relative trip generation rates.

The General Commercial rates are summarized in **Table 12** for each community within the County based on the local and regional TIF rates identified in Tables 5, 6 and 7. The rates reflect the aforementioned program reductions and County funding.

TABLE 12
PROPOSED TOTAL GENERAL COMMERCIAL TIF RATE PER 1,000 SF

Community Plan Area	Local TIF Rate	Regional TIF Rate	Regional Interchange /Ramp TIF Rate	Total TIF Rate (1)
Alpine	5,426	3,342	467	9,235
Bonsall	18,901	2,946	108	21,955
Central Mountain	0	5,066	9	5,075
County Islands	0	5,534	467	6,001
Crest-Dehesa	3,018	4,312	467	7,797
Desert	934	5,067	9	6,010
Fallbrook	18,217	3,234	108	21,559
Jamul-Dulzura	6,539	2,874	467	9,880
Julian	0	5,066	9	5,075
Lakeside	12,073	647	467	13,187
Mountain Empire	0	5,066	9	5,075
North County Metro	5,138	8,516	108	13,762
North Mountain	0	5,066	9	5,075
Otay	1,976	4,743	467	7,186
Pala-Pauma	3,521	9,163	108	12,792
Pendleton-De Luz	36	10,564	108	10,708
Rainbow	13,367	5,174	108	18,649
Ramona	16,026	0	9	16,035
San Dieguito	9,702	6,647	108	16,457
Spring Valley	1,976	4,743	467	7,186
Sweetwater	3,916	3,916	467	8,299

Community Plan Area	Local TIF Rate	Regional TIF Rate	Regional Interchange /Ramp TIF Rate	Total TIF Rate (1)
Valle De Oro	13,762	0	467	14,229
Valley Center	7,689	7,474	108	15,271

(1) The rate for Furniture is .143 multiplied by General Commercial Rate, General Industrial is .369 multiplied by General Commercial Rate, Warehouse/Storage is .137 multiplied by the General Commercial Rate, Office is .564 multiplied by the General Commercial Rate, and School is .319 multiplied by the General Commercial Rate.

The TIF is assessed on all new development associated with the generation of traffic. For purposes of assigning the fee, the following land use category explanations are provided:

Furniture Store means a commercial facility for the sale of moveable articles such as tables, chairs, sofas, desks, or cabinets required for use or ornament in a residence, office, or the like.

General Commercial includes but is not limited to shopping centers, strip development and commercial clusters, retail sales facilities including grocery stores and department stores, convenience stores, auto sales and repair facilities, hardware and lumber stores, gardening and nursery stores, eating and drinking establishments, and any other retail uses other than furniture stores that are not specifically included in other TIF category definitions.

General Industrial means facilities for manufacturing, processing, assembling, distribution services, and for construction equipment sales and repair and any industrial use other than warehouse and storage that are not specifically included in other Transportation Impact Fee categories.

Office means facilities for administrative or professional services and includes but is not limited to hospitals, medical clinics, insurance sales, banks, savings and loans, and real estate services.

Schools mean institutions for instruction in a particular skill or field.

Warehousing and Storage means all types of warehouses or facilities with the primary purpose being to provide storage space.

Winery means an establishment for producing wine and may include wine tasting rooms.

OTHER FUNDING SOURCES

The TIF is intended to fund identified transportation facilities, or portions thereof, needed to mitigate the cumulative traffic impacts of future development. Other revenue sources will be required to fund existing network deficiencies or portions of capacity not attributable to new growth. Sources of additional revenue may include funding of ramp and interchange improvements by the state. With the passage and extension of TransNet, additional Gas Tax revenues will be freed up from maintenance activities that can be applied to the County's CIP program.

The TIF funds will be used for the specific improvements identified in this report to accommodate future growth, and non-TIF funds will be used to address existing deficiencies. Gas Tax and TranNet revenues will be the most reliable source of non-TIF funds. However, having TIF funds available can help the County leverage other funding sources, including state and federal grants. Grant programs often require a high level of difficult-to-find matching funds. Having a TIF

program demonstrates a committed plan of action for road network improvements and TIF revenue can provide a ready source of matching funds. Both of these factors can provide a competitive edge when vying for grants.

PROGRAM IMPLEMENTATION

STATEMENT OF FINDINGS

The following information is provided to assist the County with satisfaction of the requisite statutory findings contained in §66001 of the Mitigation Fee Act:

Purpose of the Fee. The purpose of the TIF is to fund program implementation and construction of identified transportation facilities in response to the anticipated cumulative traffic impacts associated with future development within the unincorporated area.

Use of the Fee. The TIF will be used to fund program implementation and construction of certain local transportation facilities within each community in the County. The TIF will also be used to fund program implementation and construction of certain regional facilities within the applicable TIF region.

Reasonable Use (Benefit). Future development will have a significant, not easily mitigated, cumulative traffic impact on each community's local and regional road network. The TIF will be used to fund additional transportation infrastructure to accommodate future development and facilitate better traffic circulation within the individual communities in the County, and the applicable region, and thus mitigate this cumulative impact.

Reasonable Need (Burden). Future development will have a significant, and not easily mitigated, cumulative traffic impact on each community's road network. The TIF will be used to fund additional transportation infrastructure alleviating some of the impacts associated with future development within the unincorporated area.

Reasonable Apportionment. The TIF facilities, or portions thereof, were identified based on an analysis of existing and future deficiencies and roadway requirements. The costs of TIF facilities will be apportioned to future development based on relative vehicular trip generation rates assigned to land use category and converted to a rate per dwelling unit or rate per square foot as identified in this report.

GENERAL PLAN UPDATE

It should be noted that the County is currently in the process of performing a General Plan update. The County has reviewed the TIF facilities identified in this report and concluded that they do not conflict with current GP update efforts. Upon adoption of the updated General Plan (or any other significant modification to the existing General Plan), it is recommended that the development forecast, traffic modeling, and funding requirements to address future roadway demands for the TIF program be reviewed and updated accordingly.

CAPITAL IMPROVEMENT PROGRAM

The following facility information is provided to assist the County with satisfaction of the Capital Improvement Program (CIP) requirements set forth in §66002 of the Mitigation Fee Act:

Approximate location. The approximate location of each identified transportation facility is conceptually depicted and described in the Prior Reports and are incorporated herein by reference. The **Appendix** provides additional detail regarding the limits of the TIF roadway segments.

Size. The size and/or characteristics of each identified transportation facility are provided in the Prior Reports and are incorporated herein by reference.

Time of Availability. The identified transportation facilities will be constructed based on availability of funding, and when necessary to address the cumulative traffic impacts of future development in the County.

Estimated Cost. Additional detail for the estimated cost of the identified transportation facilities (in September 2004 dollars) is provided in the Prior Reports.

INTER-AGENCY COORDINATION

Collection of TIF funds and construction of identified TIF facilities may involve varying degrees of inter-agency coordination. For example, Caltrans has jurisdiction over state routes, portions of which may be improved as part of the County TIF program. The financial aspects and timing of construction activities for such projects will certainly require considerable attention and coordination.

The TransNet sales tax extension (Proposition A), approved by voters in 2004, requires local jurisdictions to collect a fee for each new residential dwelling unit to fund the Regional Arterial System (as defined in SANDAG's most recent and adopted Regional Transportation Plan). Since State Routes and other facilities in the Regional Transportation Plan are included in the improvements for which the County TIF is collected, the County has determined that the obligation to collect the SANDAG fee is already met. In other words, there will be no additional fees collected beyond the County TIF amount in order to satisfy the TransNet requirement.

APPENDIX A – BASE YEAR DEFICIENCIES OF STATE AND COUNTY

Appendix A
Base Year Deficiencies
State Facilities

CPA	Name	FROM	TO	Lanes	Additional Lane Miles Required
Bonsall	MISSION	OLIVE HILL	CPA BOUNDARY	2	6.77
Bonsall	PALA	.045 EAST OF MISSION / PALA	.61 EAST OF MISSION / PALA	2	0.56
Fallbrook	PALA	OLD 395	I15 - NB RAMP	2	0.30
Jamul-Dulzura	CAMPO	CPA BOUNDARY / COUGAR CANYON ROAD	STONEY OAK ROAD	2	4.39
Jamul-Dulzura	SR-94	STONEY OAK ROAD	HONEY SPRING	2	0.83
Lakeside	SR-67	.46 MILES SOUTH OF SCRIPPS POWAY PARKWAY	VIGILANTE ROAD	2	7.35
Lakeside	SR-67	SCRIPPS POWAY PARKWAY	.46 MILES SOUTH OF SCRIPPS POWAY PARKWAY	3	0.46
Ramona	MAIN	10 TH	8TH	4	0.22
Ramona	SR-67	MUSSEY GRADE ROAD	MONTECITO	2	5.40
Ramona	JULIAN	CPA BOUNDARY	ARCHIE MOORE ROAD	2	0.89
Spring Valley	SR-54 EB	SOUTH BAY PARKWAY (BEGINNING OF RAMP)	SR-54 EB (END OF RAMP)	4	0.31
Sweetwater	SOUTH BAY PARKWAY	END OF SR-54 / BEGINNING OF SOUTH BAY PARKWAY	SOUTH BAY PARKWAY (BEGINNING OF RAMP)	2	1.70
Valle De Oro	CAMPO	JAMACHA ROAD	CPA BOUNDARY	2	2.75
Valle De Oro	CAMPO	END OF SR-94 / BEGINNING OF CAMPO	VIA MERCADO	4	0.06

Appendix A
Base Year Deficiencies
County Facilities

CPA	Name	From Cross Street	To Cross Street	Existing Classification	Required Classification	Additional Lane Miles Required
Alpine	ALPINE	TAVERN	BOULDERS	Light Collector	Town Collector	0.17
Alpine	ALPINE	WEST VICTORIA	ELTINGE / MARSHALL	Light Collector	Collector	0.11
Alpine	ALPINE	ELTINGE / MARSHALL	WHEELER ST.	Light Collector	Collector	0.56
Alpine	ALPINE	WHEELER ST.	BAY MDOWS/MARINO	Light Collector	Town Collector	0.11
Alpine	ALPINE	BAY MDOWS/MARINO	.04 AFTER ROCK	Light Collector	Town Collector	0.31
Alpine	TAVERN	RAMP I-8 WB	RAMP I-8 EB	Light Collector	Collector	0.33
Alpine	WILLOWS	WILLOWS	RAMP I-8 EB	Light Collector	Collector	0.22
Alpine	WILLOWS	WILLOWSIDE	VIEJAS GRADE	Light Collector	Collector	0.44
Alpine	WILLOWS	HILLCREST	WILLOWSIDE	Light Collector	Town Collector	0.12
Alpine	WILLOWS	VIA LA MANCHA	HILLCREST	Light Collector	Town Collector	0.45
Barona	WILDCAT CANYON	BARONA CASINO	PATA RANCH	Light Collector	Collector	5.75
Bonsall	EAST VISTA	OSBORNE	CPA BOUNDARY	Light Collector	Collector	0.28
Bonsall	EAST VISTA	OLD RIVER	EVERGREEN	Town Collector	Collector	0.50
Bonsall	EAST VISTA	EVERGREEN	HUTCHISON	Town Collector	Collector	0.67
Bonsall	EAST VISTA	HUTCHISON	ORMSBY/GOPHER CA	Town Collector	Collector	0.59
Bonsall	EAST VISTA	ORMSBY/GOPHER CA	OSBORNE	Town Collector	Collector	1.32
Bonsall	MISSION	CPA BOUNDARY	PALA	Light Collector	Collector	0.50
Bonsall	CAMINO DEL REY	WEST LILAC	OLD RIVER	Light Collector	Town Collector	0.06
Bonsall	SANTA FE	BIRDFARM	OSBORNE	Light Collector	Collector	0.51
County Islands	POMERADO	WILLOW CREEK	RAMP I-15 NB	Light Collector	Major	0.13
Crest-Dehesa	DEHESA	HARBISON CANYON	SYCUAN	Light Collector	Town Collector	0.73
Crest-Dehesa	DEHESA	CALLE ENCANTO	VISTA GRANDE	Light Collector	Town Collector	0.32
Crest-Dehesa	DEHESA	WILLOW GLEN	SINGING HILLS GC	Light Collector	Town Collector	0.42
Crest-Dehesa	GREENFIELD	CANDLE	SYCAMORE	Light Collector	Collector	0.15
Crest-Dehesa	GREENFIELD	SYCAMORE	LA CRESTA	Light Collector	Collector	0.30
Crest-Dehesa	SYCUAN ROAD	DEHESA	CASINO WAY	Light Collector	Town Collector	0.35
Fallbrook	AVIATION	WISCONSIN	MISSION	Light Collector	Town Collector	0.09
Fallbrook	FALLBROOK	MAIN	OLD STAGE	Light Collector	Town Collector	0.12
Fallbrook	FALLBROOK	OLD STAGE	MANDARIN	Light Collector	Collector	0.25
Fallbrook	FALLBROOK	MANDARIN	GOLDEN	Light Collector	Town Collector	0.27
Fallbrook	MAIN	MISSION	IVY	Light Collector	Town Collector	0.09
Fallbrook	MAIN	IVY	ALVARADO	Light Collector	Collector	0.18
Fallbrook	MAIN	ALVARADO	FIG	Light Collector	Town Collector	0.06
Fallbrook	MAIN	FIG	COLLEGE	Light Collector	Collector	0.28

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Base Year Deficiencies
County Facilities

CPA	Name	From Cross Street	To Cross Street	Existing Classification	Required Classification	Additional Lane Miles Required
Fallbrook	MAIN	COLLEGE	ASH	Light Collector	Collector	0.18
Fallbrook	MAIN	ASH	FALLBROOK	Light Collector	Collector	0.16
Fallbrook	MAIN	FALLBROOK	AVIATION	Light Collector	Collector	0.38
Fallbrook	MAIN	AVIATION	AMMUNITION	Light Collector	Collector	0.38
Fallbrook	MAIN	AMMUNITION	CLEMMENS	Light Collector	Collector	0.25
Fallbrook	MISSION	EL PAISANO	WILLOW GLEN	Light Collector	Collector	0.69
Fallbrook	MISSION	EL PAISANO	HAMILTON	Light Collector	Collector	1.13
Fallbrook	MISSION	WILLOW GLEN	LIVE OAK PARK	Light Collector	Collector	1.77
Fallbrook	MISSION	LIVE OAK PARK	OLD 395	Light Collector	Collector	1.42
Fallbrook	MISSION	OLD 395	RAMP I-15 SB	Light Collector	Collector	0.11
Fallbrook	MISSION	RAMP I-15 SB	RAMP I-15 NB	Light Collector	Town Collector	0.15
Fallbrook	MISSION	HAMILTON	DAVIS	Light Collector	Town Collector	0.70
Fallbrook	MISSION	DAVIS	STAGE COACH	Light Collector	Town Collector	0.18
Fallbrook	MISSION	STAGE COACH	GUM TREE	Light Collector	Town Collector	0.13
Fallbrook	MISSION	INDUSTRIAL	SANTA MARGARITA	Light Collector	Collector	0.36
Fallbrook	MISSION	GUM TREE	INDUSTRIAL	Light Collector	Collector	0.91
Fallbrook	MISSION	SANTA MARGARITA	BRANDON	Light Collector	Collector	0.51
Fallbrook	MISSION	BRANDON	IOWA	Light Collector	Collector	0.56
Fallbrook	MISSION	STAGE COACH	OLIVE HILL	Light Collector	Collector	0.17
Fallbrook	MISSION	OLIVE HILL	WINTER HAVEN	Light Collector	Collector	0.29
Fallbrook	MISSION	WINTER HAVEN	OVERLAND	Light Collector	Collector	0.59
Fallbrook	MISSION	OVERLAND	BIG OAK RANCH	Light Collector	Collector	0.52
Fallbrook	MISSION	BIG OAK RANCH	GREEN CANYON	Light Collector	Collector	0.89
Fallbrook	MISSION	GREEN CANYON	VIA ENCINOS	Light Collector	Collector	0.62
Fallbrook	MISSION	VIA ENCINOS	HELLERS BEND	Light Collector	Collector	0.71
Fallbrook	MISSION	HELLERS BEND	VIA MONSERATE	Light Collector	Collector	1.48
Fallbrook	MISSION	VIA MONSERATE	BAJA MISSION	Light Collector	Collector	0.22
Fallbrook	MISSION	BAJA MISSION	LA CANADA	Light Collector	Collector	0.63
Fallbrook	MISSION	LA CANADA	CPA BOUNDARY	Light Collector	Collector	1.60
Fallbrook	MISSION	ORANGE	MAIN	Town Collector	Collector	0.09
Fallbrook	MISSION	IOWA	ORANGE	Town Collector	Collector	0.10
Fallbrook	OLD STAGE	PALOMINO	MISSION	Light Collector	Town Collector	0.13
Fallbrook	RECHE	STAGE COACH	RECHE WAY	Light Collector	Town Collector	0.20
Fallbrook	RECHE	RECHE WAY	FALLBROOK	Light Collector	Town Collector	0.31

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Base Year Deficiencies
County Facilities

CPA	Name	From Cross Street	To Cross Street	Existing Classification	Required Classification	Additional Lane Miles Required
Fallbrook	RECHE	FALLBROOK	LOS AMIGOS	Light Collector	Town Collector	0.08
Fallbrook	STAGE COACH	FALLBROOK	MARITA	Light Collector	Collector	0.51
Fallbrook	STAGE COACH	MARITA	RECHE	Light Collector	Collector	0.50
Lakeside	CHANNEL	LAKESIDE	MAPLEVIEW	Light Collector	Town Collector	0.13
Lakeside	I-8 BUSINESS / MAIN	.31 MILES SOUTH OF KAY JAY / MOBILE HOME PARK ENTRANCE	LOS COCHES	Light Collector	Town Collector	0.41
Lakeside	I-8 BUSINESS / MAIN	.45 MILES SOUTH OF LOS COCHES	LAVALA	Light Collector	Town Collector	0.50
Lakeside	LAKE JENNINGS PA	EL MONTE	PINKARD	Light Collector	Town Collector	1.37
Lakeside	LAKE JENNINGS PA	PINKARD	HARRITT	Light Collector	Town Collector	0.10
Lakeside	LAKE JENNINGS PA	HARRITT	HWY 8/BLOSSOM VA	Light Collector	Collector	0.23
Lakeside	LAKE JENNINGS PA	HWY 8/BLOSSOM VA	RAMP I-8 WB	Light Collector	Collector	0.10
Lakeside	LAKE JENNINGS PA	RAMP I-8 WB	RAMP I-8 WB	Light Collector	Town Collector	0.03
Lakeside	LAKE JENNINGS PA	RAMP I-8 WB	I8-EB OFF RAMP	Light Collector	Collector	0.14
Lakeside	LOS COCHES	BOWER	LAKEVIEW	Town Collector	Collector	0.40
Lakeside	LOS COCHES	LAKEVIEW	I-8 BUSINESS / MAIN	Town Collector	Collector	0.58
Lakeside	MAPLEVIEW	SR-67	MAINE	Light Collector	Collector	0.07
Lakeside	MAPLEVIEW	SR-67 SB	SR-67 NB	Light Collector	Town Collector	0.02
Lakeside	OLDE 80	SIERRA ALTA	PECAN PARK	Light Collector	Town Collector	0.03
Lakeside	RIVERFORD	WOODSIDE(N)	RAMP SR-67 SB	Light Collector	Town Collector	0.04
Lakeside	WILDCAT CANYON	PATA RANCH	WILLOW	Light Collector	Collector	5.56
Lakeside	WOODSIDE	RIVERVIEW	857 FT WEST OF WINTER GARDEN	Light Collector	Town Collector	0.18
Lakeside	WOODSIDE	MARILLA	RIVERVIEW	Light Collector	Town Collector	0.21
Lakeside	WOODSIDE	RAMP SR-67 NB - ON RAMP	MARILLA	Light Collector	Collector	0.59
Lakeside	WOODSIDE	RIVERFORD	RAMP SR-67 NB - ON RAMP	Light Collector	Collector	0.12
Lakeside	WOODSIDE	RAMP SR-67 NB - OFF RAMP	RIVERFORD	Light Collector	Town Collector	0.06
North County Metro	BEAR VALLEY	BIRCH	IDAHO	Light Collector	Collector	0.31
North County Metro	BEAR VALLEY	IDAHO	LANDAVO / CAIN	Light Collector	Collector	0.22

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Base Year Deficiencies
County Facilities

CPA	Name	From Cross Street	To Cross Street	Existing Classification	Required Classification	Additional Lane Miles Required
North County Metro	BEAR VALLEY	LANDAVO / CAIN	SUBURBAN HILLS	Light Collector	Collector	0.28
North County Metro	BEAR VALLEY	ELDORADO	ENCINO	Light Collector	Collector	1.15
North County Metro	BEAR VALLEY	SAN PASQUAL VALL	ELDORADO	Town Collector	Collector	0.42
North County Metro	BUENA CREEK	MONTE VISTA	SUGARBUSH	Light Collector	Town Collector	0.61
North County Metro	BUENA CREEK	HARTWRIGHT	HIDDEN OAK	Light Collector	Town Collector	0.70
North County Metro	BUENA CREEK	SYCAMORE	HARTWRIGHT	Light Collector	Town Collector	0.03
North County Metro	BUENA CREEK	SOUTH SANTA FE	SYCAMORE	Light Collector	Town Collector	0.02
North County Metro	DEER SPRINGS	MESA ROCK	MOUNTAIN MEADOW	Light Collector	Collector	0.11
North County Metro	DEER SPRINGS	SARVER	MESA ROCK	Light Collector	Collector	2.89
North County Metro	DEER SPRINGS	MARILYN	SARVER	Light Collector	Collector	0.74
North County Metro	DEL DIOS	VIA RANCHO PKWY	DATE	Light Collector	Collector	0.20
North County Metro	DEL DIOS	DATE	ELM	Light Collector	Collector	0.74
North County Metro	OLIVE	GRAPEVINE	GRANADA	Light Collector	Collector	0.39
North County Metro	RANCHO SANTA FE	LAKE SAN MARCOS	CAMINO DEL ARROYO	Major	Prime Arterial	0.83
North County Metro	ROBELINI	SOUTH SANTA FE	EL VALLE OPULENT	Light Collector	Collector	0.15
North County Metro	ROBELINI	EL VALLE OPULENT	SYCAMORE	Light Collector	Collector	0.32
North County Metro	SAN PASQUAL	ZERMATT	VIA RANCHO	Light Collector	Collector	0.99
North County Metro	SOUTH SANTA FE	MONTGOMERY	YORK	Light Collector	Collector	1.00
North County Metro	SOUTH SANTA FE	YORK	WOODLAND	Light Collector	Collector	0.12
North County Metro	SOUTH SANTA FE	WOODLAND	TIBER	Light Collector	Prime Arterial	0.37
North County Metro	SOUTH SANTA FE	TIBER	ROBELINI	Light Collector	Major	0.37
North County Metro	SOUTH SANTA FE	ROBELINI	SYCAMORE	Light Collector	Collector	0.16
North County Metro	SOUTH SANTA FE	SYCAMORE	ABELIA	Light Collector	Collector	0.14
North County Metro	SOUTH SANTA FE	ABELIA	PALMYRA	Light Collector	Collector	0.22
North County Metro	SOUTH SANTA FE	PALMYRA	AZALEA	Light Collector	Collector	0.40
North County Metro	SOUTH SANTA FE	AZALEA	POINSETTIA	Light Collector	Collector	0.28
North County Metro	SOUTH SANTA FE	POINSETTIA	SMILAX	Light Collector	Collector	0.61
North County Metro	SOUTH SANTA FE	SMILAX	BOSSTICK	Light Collector	Collector	0.38
North County Metro	SYCAMORE	SHADOW RIDGE	WATSON / HIBISCUS	Major	Prime Arterial	0.29
North County Metro	VALLEY CENTER	ESCONDIDO CPA BOUNDARY	VALLEY CENTER CPA BOUNDARY	Light Collector	Collector	0.38
North County Metro	VIA RANCHO	VALLEY	LAKE	Light Collector	Town Collector	0.06
North County Metro	VIA RANCHO	LAKE	HIGHLANDS WEST	Light Collector	Town Collector	0.20
North County Metro	VIA RANCHO	FELICITA	MONTESANO	Light Collector	Collector	0.26

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Base Year Deficiencies
County Facilities

CPA	Name	From Cross Street	To Cross Street	Existing Classification	Required Classification	Additional Lane Miles Required
North County Metro	VIA RANCHO	VIA LOMA VISTA	FELICITA	Light Collector	Town Collector	0.74
North County Metro	VIA RANCHO	HIGHLANDS WEST	EUCALYPTUS	Light Collector	Town Collector	0.50
North County Metro	SAN PASQUAL ROAD	VIENTO VALLE	SAN PASQUAL VALLEY	Light Collector	Town Collector	1.08
Pendleton-De Luz	HARBOR	SAN DIEGO / I5 RAMP	SAN LUIS REY	Light Collector	Town Collector	0.05
Pendleton-De Luz	HARBOR	SAN LUIS REY	SANTA FE	Light Collector	Town Collector	0.12
Pendleton-De Luz	SAN DIEGO / HARBOR	I5 - NB OFF TO HARBOR WEST	I5 - NB OFF TO HARBOR EAST	Light Collector	Collector	0.07
Pendleton-De Luz	SAN DIEGO / HARBOR	RAMP I-5 NB	COAST	Light Collector	Collector	0.33
Pendleton-De Luz	SAN DIEGO / HARBOR	VANDEGRIFT	I5 - NB OFF TO HARBOR WEST	Major	Prime Arterial	0.18
Pepper Drive-Bosto	BRADLEY	MAGNOLIA	RAMP SR-67 SB	Light Collector	Collector	0.12
Pepper Drive-Bosto	BRADLEY	RAMP SR-67 SB	RAMP SR-67 NB	Light Collector	Collector	0.16
Pepper Drive-Bosto	BRADLEY	RAMP SR-67 NB	GRAVES	Light Collector	Collector	0.11
Pepper Drive-Bosto	BRADLEY	GRAVES	STONE EDGE CIR	Light Collector	Town Collector	0.11
Pepper Drive-Bosto	BRADLEY	STONE EDGE CIR	150 FT AFTER STONE EDGE EAST	Light Collector	Town Collector	0.09
Pepper Drive-Bosto	GRAVES	GRAVES CT	BRADLEY	Light Collector	Town Collector	0.29
Pepper Drive-Bosto	GREENFIELD	BRADLEY ACCESS / GREENFIELD ACCESS	BALLANTYNE	Light Collector	Town Collector	0.07
Pepper Drive-Bosto	GREENFIELD	DIAMOND	01ST	Light Collector	Town Collector	0.13
Pepper Drive-Bosto	MAGNOLIA	AIRPORT	DENNY	Light Collector	Collector	0.24
Pepper Drive-Bosto	MAGNOLIA	DENNY	BRADLEY	Light Collector	Collector	0.20
Pepper Drive-Bosto	MAGNOLIA	BRADLEY	CYPRESS	Light Collector	Town Collector	0.15
Pepper Drive-Bosto	MAGNOLIA	CYPRESS	VERNON	Light Collector	Town Collector	0.31
Pepper Drive-Bosto	PEPPER	VULCAN	ROXANNE	Light Collector	Town Collector	0.07
Pepper Drive-Bosto	PEPPER	ROXANNE	MARLINDA	Light Collector	Town Collector	0.20
Ramona	SAN VICENTE	WARNOCK	KEYES	Light Collector	Collector	0.67
Ramona	SAN VICENTE	KEYES	DYE	Light Collector	Town Collector	0.07
Ramona	SAN VICENTE	DYE	BUNNIE KING	Light Collector	Town Collector	0.29
Ramona	SAN VICENTE	BUNNIE KING	CHUCKWAGON	Light Collector	Town Collector	1.29
Ramona	SAN VICENTE	CHUCKWAGON	WILDCAT CANYON	Light Collector	Town Collector	0.21
Ramona	SAN VICENTE	WILDCAT CANYON	VICENTE MEADOW	Light Collector	Collector	0.64
San Dieguito	DEL DIOS	ELM	MT ISRAEL	Light Collector	Collector	2.59
San Dieguito	DEL DIOS	MT ISRAEL	RANCHO	Light Collector	Collector	0.11

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Base Year Deficiencies
County Facilities

CPA	Name	From Cross Street	To Cross Street	Existing Classification	Required Classification	Additional Lane Miles Required
San Dieguito	DEL DIOS	RANCHO	CALLE AMBIENTE	Light Collector	Collector	7.48
San Dieguito	DEL DIOS	CALLE AMBIENTE	VIA CUATRO CAMIN	Light Collector	Collector	1.32
San Dieguito	DEL DIOS	LUNA DE MIEL	EL CAMINO DEL NORTE	Light Collector	Collector	1.34
San Dieguito	LA BAJADA	EL MIRLO	LA NORIA	Light Collector	Town Collector	0.29
San Dieguito	PASEO DELICIAS	EL CAMINO DEL NO	EL MONTEVIDEO	Light Collector	Collector	1.13
San Dieguito	PASEO DELICIAS	EL MONTEVIDEO	LAVALLE PLATEADA	Light Collector	Collector	1.09
San Dieguito	PASEO DELICIAS	LAVALLE PLATEADA	LA FREMONTIA	Light Collector	Collector	0.18
San Dieguito	PASEO DELICIAS	LA FREMONTIA	VIA DE LA VALLE	Light Collector	Collector	0.10
San Dieguito	PASEO DELICIAS	VIA DE LA VALLE	LA GRANADA	Light Collector	Town Collector	0.29
San Dieguito	VIA DE LA VALLE	PASEO DELICIAS	LAS COLINAS	Light Collector	Town Collector	0.02
San Dieguito	VIA DE LA VALLE	LAS COLINAS	VIA DE SANTA FE	Light Collector	Town Collector	0.56
San Dieguito	VIA DE LA VALLE	VIA DE SANTA FE	VIA DE SANTA FE	Light Collector	Collector	0.06
San Dieguito	VIA DE LA VALLE	CALZADA DEL BOSQ	LAS PALOMAS	Light Collector	Town Collector	0.87
San Dieguito	VIA DE LA VALLE	LAS PALOMAS	CANCHA DE GOLF	Light Collector	Town Collector	0.16
San Dieguito	VIA DE LA VALLE	CANCHA DE GOLF	LAS PLANIDERAS	Light Collector	Collector	1.22
San Dieguito	VIA DE LA VALLE	LAS PLANIDERAS	CPA BOUNDARY	Light Collector	Collector	0.32
San Dieguito	VIA DE LA VALLE	ARROYO ROSITA	790 FT SOUTH OF CAMINITO PORTA DELGADA	Light Collector	Collector	0.36
Spring Valley	BANCROFT	CPA BOUNDARY	RAMP SR-94 EB	Light Collector	Collector	0.05
Spring Valley	BANCROFT	RAMP SR-94 EB	HELIX	Light Collector	Collector	0.08
Spring Valley	BANCROFT	HELIX	KOONCE	Light Collector	Collector	0.33
Spring Valley	BANCROFT	KOONCE	KENWOOD	Light Collector	Collector	0.37
Spring Valley	BANCROFT	KENWOOD	SWITZER	Light Collector	Collector	0.19
Spring Valley	BANCROFT	SWITZER	OLIVE	Light Collector	Collector	0.12
Spring Valley	BANCROFT	OLIVE	LAMAR	Light Collector	Collector	0.50
Spring Valley	BANCROFT	LAMAR	TROY	Light Collector	Collector	0.35
Spring Valley	CAMPO	RAMP SR-125 NB	KENWOOD	Light Collector	Collector	0.16
Spring Valley	CAMPO	KENWOOD	SR-94 WB	Light Collector	Collector	0.27
Spring Valley	JAMACHA BOULEVAR	SWEETWATER SPRIN	POINTE PARKWAY	Light Collector	Collector	0.98
Spring Valley	JAMACHA BOULEVAR	WHITE STONE	SPRING GLEN	Light Collector	Collector	0.64
Spring Valley	JAMACHA BOULEVAR	JAMACHA ROAD	WHITE STONE	Light Collector	Collector	0.59
Spring Valley	KENWOOD	RAMP SR-94 EB	RAMP SR-94 WB	Light Collector	Collector	0.19
Spring Valley	SWEETWATER	BLOSSOM	HARNESS	Major	Prime Arterial	0.54

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Base Year Deficiencies
County Facilities

CPA	Name	From Cross Street	To Cross Street	Existing Classification	Required Classification	Additional Lane Miles Required
Spring Valley	SWEETWATER	HARNESS	SPRING VISTA	Major	Prime Arterial	0.51
Spring Valley	SWEETWATER	SPRING VISTA	JAMACHA ROAD	Major	Prime Arterial	0.38
Spring Valley	SWEETWATER SPRIN	DEL RIO	DON PICO	Major	Prime Arterial	0.12
Spring Valley	SWEETWATER SPRIN	DON PICO	CRISTOBAL	Major	Prime Arterial	0.16
Spring Valley	WORTHINGTON	PARADISE VALLEY	VERDE RIDGE	Light Collector	Town Collector	0.11
Spring Valley	WORTHINGTON	VERDE RIDGE	SWEETWATER / SOUTHBAY PKWY	Light Collector	Town Collector	0.33
Sweetwater	BONITA	SWEETWATER	SAN MIGUEL	Light Collector	Collector	0.24
Sweetwater	BONITA	SAN MIGUEL	FRISBIE	Light Collector	Collector	1.15
Sweetwater	BONITA	CORDELE / VILLA BONITA	ANDORRA	Major	Prime Arterial	0.79
Sweetwater	BONITA	ANDORRA	PLZA BONITA/LYNNWOOD	Major	Prime Arterial	0.83
Sweetwater	BRIARWOOD	SOUTH BAY PARKWA	RAMP SR-54 EB	Light Collector	Collector	0.03
Sweetwater	BRIARWOOD	RAMP SR-54 EB	ROBINWOOD	Light Collector	Town Collector	0.05
Sweetwater	CENTRAL	AUDUBON	CORRAL CANYON	Light Collector	Town Collector	0.24
Sweetwater	CENTRAL	HAZELHURST	AUDUBON	Light Collector	Town Collector	0.08
Sweetwater	CENTRAL	FRISBIE	HAZELHURST	Light Collector	Town Collector	0.13
Sweetwater	SWEETWATER	WORTHINGTON / SB PARKWAY	QUARRY	Light Collector	Collector	0.66
Sweetwater	SWEETWATER	QUARRY	DEGEN	Light Collector	Collector	1.04
Sweetwater	SWEETWATER	DEGEN	BONITA	Light Collector	Collector	0.32
Sweetwater	SWEETWATER	BRIARWOOD	BONITA WOODS	Light Collector	Town Collector	0.40
Sweetwater	WILLOW	SWEETWATER	BONITA	Light Collector	Collector	0.45
Valle De Oro	BANCROFT	CAMPO	RAMP SR-94 WB	Light Collector	Collector	0.09
Valle De Oro	BANCROFT	RAMP SR-94 WB	CPA BOUNDARY	Light Collector	Collector	0.07
Valle De Oro	CALLE VERDE	538 FT EAST OF AVOCADO	VIA MERCADO	Light Collector	Town Collector	0.13
Valle De Oro	CAMPO	SR-94 WB	MERRITT BLVD	Light Collector	Collector	0.10
Valle De Oro	CAMPO	MERRITT BLVD	BANCROFT	Light Collector	Collector	0.41
Valle De Oro	CAMPO	BANCROFT	HELIX	Light Collector	Collector	0.38
Valle De Oro	CAMPO	HELIX	ROGERS	Light Collector	Town Collector	0.23
Valle De Oro	CAMPO	ROGERS	KENWOOD	Light Collector	Town Collector	0.14
Valle De Oro	CHASE	GROVE	BERNITA	Light Collector	Collector	0.22

Appendix A
Base Year Deficiencies
County Facilities

CPA	Name	From Cross Street	To Cross Street	Existing Classification	Required Classification	Additional Lane Miles Required
Valle De Oro	CHASE	BERNITA	MONUMENT HILL	Light Collector	Collector	1.19
Valle De Oro	CHASE	MONUMENT HILL	FUERTE	Light Collector	Collector	0.14
Valle De Oro	CHASE	FUERTE	BRAYTON	Light Collector	Collector	0.16
Valle De Oro	CHASE	BRAYTON	SR 54	Light Collector	Collector	0.14
Valle De Oro	CHASE	SR 54	JAMACHA ROAD	Light Collector	Collector	0.23
Valle De Oro	FUERTE	GROSSMONT	SIERRA VISTA	Light Collector	Collector	0.40
Valle De Oro	FUERTE	SIERRA VISTA	SUMMIT	Light Collector	Collector	0.62
Valle De Oro	FUERTE	SUMMIT	PANDORA	Light Collector	Collector	0.63
Valle De Oro	FUERTE	PANDORA	LEMON	Light Collector	Collector	0.21
Valle De Oro	FUERTE	LEMON	HELIX	Light Collector	Collector	0.72
Valle De Oro	FUERTE	HELIX	GRANDVIEW	Light Collector	Collector	0.82
Valle De Oro	FUERTE	GRANDVIEW	CRESTLAND	Light Collector	Town Collector	0.20
Valle De Oro	FUERTE	CRESTLAND	ALZEDA	Light Collector	Town Collector	0.13
Valle De Oro	FUERTE	ALZEDA	CALAVO	Light Collector	Town Collector	0.13
Valle De Oro	FUERTE	CALAVO	AVOCADO	Light Collector	Town Collector	0.23
Valle De Oro	HILLSDALE	JAMACHA ROAD	LA VALHALLA	Light Collector	Town Collector	0.29
Valle De Oro	KENWOOD	RAMP SR-94 WB	CAMPO	Light Collector	Collector	0.20
Valle De Oro	NORTH BARCELONA	CAMPO	DOLORES	Light Collector	Town Collector	0.06
Valle De Oro	VIA MERCADO	CALLE VERDE	CAMPO	Light Collector	Collector	0.31
Valley Center	CHAMPAGNE	GOPHER CANYON	OLD CASTLE	Light Collector	Collector	0.32
Valley Center	OLD 395	CIRCLE R	GOPHER CANYON	Light Collector	Town Collector	0.15
Valley Center	VALLEY CENTER	COLE GRADE	MILLER	Light Collector	Collector	1.04
Valley Center	VALLEY CENTER	MILLER	CHAPARREL	Light Collector	Collector	0.94
Valley Center	VALLEY CENTER	CHAPARREL	LILAC	Light Collector	Collector	0.59
Valley Center	VALLEY CENTER	LILAC	CALLE DE VISTA	Light Collector	Collector	0.55
Valley Center	VALLEY CENTER	CALLE DE VISTA	SUNDAY	Light Collector	Collector	0.32
Valley Center	VALLEY CENTER	SUNDAY	MIRAR DE VALLE	Light Collector	Collector	0.94
Valley Center	VALLEY CENTER	MIRAR DE VALLE	WOODS VALLEY	Light Collector	Collector	0.56
Valley Center	VALLEY CENTER	WOODS VALLEY	BANBURY	Light Collector	Collector	0.29
Valley Center	VALLEY CENTER	BANBURY	CPA BOUNDARY	Light Collector	Collector	5.02

Appendix A
Base Year Deficiencies
County Facilities

CPA	Name	From Cross Street	To Cross Street	Existing Classification	Required Classification	Additional Lane Miles Required

APPENDIX B – BUILDOUT DEFICIENCIES

Appendix B
Buildout Deficiencies
County Facilities

CPA	Name	From Cross Street	To Cross Street	Existing Classification	Required Classification	Additional Lane Miles Required
Alpine	ALPINE	DUNBAR	RAMP I8 EB	Light Collector	Town Collector	0.07
Alpine	ALPINE	TAVERN	WEST VICTORIA	Light Collector	Collector	1.40
Alpine	ALPINE	WEST VICTORIA	Eltinge / MARSHALL	Light Collector	Collector	0.11
Alpine	ALPINE	Eltinge / MARSHALL	BAY MDOWS/MARINO	Light Collector	Collector	0.78
Alpine	ALPINE	BAY MDOWS/MARINO	SO GRADE/E VICTO	Light Collector	Collector	0.91
Alpine	SOUTH GRADE	ELTINGE	OLIVE VIEW	Light Collector	Town Collector	0.08
Alpine	TAVERN	MONTEREY PL	VICTORIA PARK	Light Collector	Collector	1.20
Alpine	TAVERN	VICTORIA PARK	RAMP I-8 WB	Light Collector	Major	0.07
Alpine	TAVERN	RAMP I-8 HOV EB	ALPINE	Major	Prime Arterial	0.20
Alpine	TAVERN	ARNOLD	TAVERN CT	Light Collector	Collector	0.29
Alpine	VICTORIA PARK	TAVERN	GENTIAN	Light Collector	Town Collector	0.40
Alpine	WILLOWS	RAMP I-8 EB	ALPINE	Light Collector	Town Collector	0.02
Alpine	WILLOWS	WILLOWS	RAMP I-8 EB	Light Collector	Collector	0.22
Alpine	WILLOWS	WILLOWS	WILLOWSIDE	Light Collector	Collector	1.15
Alpine	WILLOWS	WILLOWSIDE	VIEJAS GRADE	Light Collector	Collector	0.44
Barona	WILDCAT CANYON	PAINTED ROCK / SAN VINCENTE OAK	FEATHERSTONE CANYON	Light Collector	Town Collector	2.09
Barona	WILDCAT CANYON	FEATHERSTONE CANYON	BARONA ROAD	Light Collector	Town Collector	1.87
Barona	WILDCAT CANYON	BARONA ROAD	PATA RANCH	Light Collector	Collector	5.75
Bonsall	CHAMPAGNE	LAWRENCE WELK	OLD CASTLE	Light Collector	Collector	1.80
Bonsall	EAST VISTA	MISSION	OLD RIVER	Town Collector	Collector	0.13
Bonsall	EAST VISTA	OLD RIVER	EVERGREEN	Town Collector	Collector	0.50
Bonsall	EAST VISTA	EVERGREEN	HUTCHISON	Town Collector	Collector	0.67
Bonsall	EAST VISTA	HUTCHISON	ORMSBY/GOPHER CA	Town Collector	Collector	0.59
Bonsall	EAST VISTA	ORMSBY/GOPHER CA	STRAWBERRY HILL	Town Collector	Collector	0.43
Bonsall	EAST VISTA	STRAWBERRY HILL	OSBORNE	Light Collector	Collector	0.89
Bonsall	GOPHER CANYON	ORMSBY	VISTA VALLEY	Light Collector	Collector	1.98
Bonsall	GOPHER CANYON	VISTA VALLEY	TWIN OAKS VALLEY	Light Collector	Collector	1.57
Bonsall	GOPHER CANYON	TWIN OAKS VALLEY	AVOHILL	Light Collector	Collector	1.65
Bonsall	GOPHER CANYON	AVOHILL	RAMP I-15 SB	Light Collector	Collector	1.63
Bonsall	GOPHER CANYON	RAMP I-15 SB	RAMP I-15 NB	Light Collector	Collector	0.19
Bonsall	GOPHER CANYON	RAMP I-15 NB	OLD 395	Light Collector	Collector	0.14
Bonsall	MISSION	PALA	CPA BOUNDARY	Light Collector	Collector	0.35

Appendix B
Buildout Deficiencies
County Facilities

CPA	Name	From Cross Street	To Cross Street	Existing Classification	Required Classification	Additional Lane Miles Required
Bonsall	NORTH RIVER	KARI LANE	VIA PUERTA DEL S	Light Collector	Collector	0.10
Bonsall	NORTH RIVER	VIA PUERTA DEL S	MISSION	Light Collector	Collector	0.85
Bonsall	OLD 395	WEST LILAC	RAMP I-15 SB	Light Collector	Town Collector	0.85
Bonsall	OLD RIVER	CAMINO DEL REY	GOLF CLUB	Light Collector	Town Collector	0.33
Bonsall	OLD RIVER	GOLF CLUB	DENTRO	Light Collector	Town Collector	0.44
Bonsall	OLD RIVER	DENTRO	GOPHER CANYON	Light Collector	Town Collector	1.04
Bonsall	OLD RIVER	GOPHER CANYON	new OLD RIVER	Light Collector	Town Collector	0.53
Bonsall	OLIVEHILL / CAMINO DEL REY	MISSION	OLD RIVER	Light Collector	Town Collector	0.25
Bonsall	VIA PUERTA DEL S	OLIVE HILL	VALLE DEL SOL	Light Collector	Town Collector	0.60
Bonsall	VIA PUERTA DEL S	VALLE DEL SOL	NORTH RIVER	Light Collector	Town Collector	1.52
Bonsall	CAMINO DEL REY	OLD RIVER	WEST LILAC	Light Collector	Collector	0.59
County Islands	POMERADO	WILLOW CREEK	RAMP I-15 NB	Light Collector	Major	0.13
Crest-Dehesa	DEHESA	CALLE ENCANTO	VISTA GRANDE	Light Collector	Collector	0.64
Crest-Dehesa	DEHESA	VISTA GRANDE	SINGING TRAILS	Light Collector	Collector	0.89
Crest-Dehesa	DEHESA	SINGING TRAILS	WILLOW GLEN	Light Collector	Town Collector	0.81
Crest-Dehesa	DEHESA	WILLOW GLEN	HARBISON CANYON	Light Collector	Collector	6.44
Crest-Dehesa	DEHESA	HARBISON CANYON	VISTA DE LA MONTANA	Light Collector	Collector	0.50
Crest-Dehesa	DEHESA	VISTA DE LA MONTANA	SYCUAN	Light Collector	Collector	0.97
Crest-Dehesa	GREENFIELD	SYCAMORE	LA CRESTA	Light Collector	Collector	0.30
Crest-Dehesa	SYCUAN ROAD	DEHESA	SYCUAN CASINO	Light Collector	Collector	0.70
Desert	BORREGO SPRINGS	CHRISTMAS S	STIRRUP	Light Collector	Collector	0.42
Desert	CHRISTMAS N	BORREGO SPRINGS	PALM CANYON	Light Collector	Collector	0.13
Desert	CHRISTMAS S	CHRISTMAS N	BORREGO SPRINGS	Light Collector	Collector	0.14
Desert	PALM CANYON	SUN AND SHADOWS	OCOTILLO	Light Collector	Town Collector	0.22
Desert	PALM CANYON	OCOTILLO	CHRISTMAS N	Light Collector	Collector	0.95
Desert	PALM CANYON	CHRISTMAS N	STIRRUP	Light Collector	Collector	0.49
Desert	PALM CANYON	STIRRUP	DI GIORGIO	Light Collector	Town Collector	0.23
Desert	PALM CANYON	DI GIORGIO	FAIRWAY	Light Collector	Town Collector	0.48
Fallbrook	AVIATION	WISCONSIN	MISSION	Light Collector	Town Collector	0.09
Fallbrook	FALLBROOK	MAIN	OLD STAGE	Light Collector	Collector	0.25
Fallbrook	FALLBROOK	OLD STAGE	MANDARIN	Light Collector	Collector	0.25
Fallbrook	FALLBROOK	MANDARIN	GOLDEN	Light Collector	Collector	0.54
Fallbrook	FALLBROOK	GOLDEN	MC DONALD	Light Collector	Town Collector	0.35

Appendix B
Buildout Deficiencies
County Facilities

CPA	Name	From Cross Street	To Cross Street	Existing Classification	Required Classification	Additional Lane Miles Required
Fallbrook	FALLBROOK	MC DONALD	DEBBY	Light Collector	Town Collector	0.28
Fallbrook	FALLBROOK	DEBBY	STAGE COACH	Light Collector	Town Collector	0.22
Fallbrook	MAIN	MISSION	IVY	Light Collector	Town Collector	0.09
Fallbrook	MAIN	IVY	ALVARADO	Light Collector	Collector	0.18
Fallbrook	MAIN	ALVARADO	FIG	Light Collector	Town Collector	0.06
Fallbrook	MAIN	FIG	COLLEGE	Light Collector	Collector	0.28
Fallbrook	MAIN	COLLEGE	ASH	Light Collector	Collector	0.18
Fallbrook	MAIN	ASH	FALLBROOK	Light Collector	Collector	0.16
Fallbrook	MAIN	FALLBROOK	AVIATION	Light Collector	Collector	0.38
Fallbrook	MAIN	AVIATION	AMMUNITION	Light Collector	Collector	0.38
Fallbrook	MAIN	AMMUNITION	CLEMMENS	Light Collector	Collector	0.25
Fallbrook	MISSION	RAMP I-15 NB	OLD 395	Light Collector	Collector	0.10
Fallbrook	MISSION	RAMP I-15 SB	RAMP I-15 NB	Light Collector	Collector	0.31
Fallbrook	MISSION	OLD 395	RAMP I-15 SB	Light Collector	Prime Arterial	0.22
Fallbrook	MISSION	LIVE OAK PARK	OLD 395	Light Collector	Collector	1.42
Fallbrook	MISSION	WILLOW GLEN	LIVE OAK PARK	Light Collector	Collector	1.77
Fallbrook	MISSION	EL PAISANO	WILLOW GLEN	Light Collector	Collector	0.69
Fallbrook	MISSION	HAMILTON	EL PAISANO	Light Collector	Collector	1.13
Fallbrook	MISSION	HAMILTON	DAVIS	Light Collector	Collector	1.39
Fallbrook	MISSION	DAVIS	STAGE COACH	Light Collector	Collector	0.35
Fallbrook	MISSION	STAGE COACH	GUM TREE	Light Collector	Collector	0.26
Fallbrook	MISSION	GUM TREE	INDUSTRIAL	Light Collector	Collector	0.91
Fallbrook	MISSION	INDUSTRIAL	SANTA MARGARITA	Light Collector	Collector	0.36
Fallbrook	MISSION	SANTA MARGARITA	BRANDON	Light Collector	Collector	0.51
Fallbrook	MISSION	BRANDON	IOWA	Light Collector	Collector	0.56
Fallbrook	MISSION	IOWA	ORANGE	Town Collector	Collector	0.10
Fallbrook	MISSION	ORANGE	MAIN	Town Collector	Collector	0.09
Fallbrook	MISSION	OLD STAGE	PEPPER TREE	Major	Prime Arterial	0.16
Fallbrook	MISSION	STAGE COACH	OLIVE HILL	Light Collector	Collector	0.17
Fallbrook	MISSION	WINTER HAVEN	OVERLAND	Light Collector	Collector	0.59
Fallbrook	MISSION	OVERLAND	BIG OAK RANCH	Light Collector	Collector	0.52
Fallbrook	MISSION	BIG OAK RANCH	GREEN CANYON	Light Collector	Collector	0.89
Fallbrook	MISSION	GREEN CANYON	VIA ENCINOS	Light Collector	Collector	0.62

Appendix B
Buildout Deficiencies
County Facilities

CPA	Name	From Cross Street	To Cross Street	Existing Classification	Required Classification	Additional Lane Miles Required
Fallbrook	MISSION	VIA ENCINOS	HELLERS BEND	Light Collector	Collector	0.71
Fallbrook	MISSION	HELLERS BEND	VIA MONSERATE	Light Collector	Collector	1.48
Fallbrook	MISSION	VIA MONSERATE	BAJA MISSION	Light Collector	Collector	0.22
Fallbrook	MISSION	BAJA MISSION	LA CANADA	Light Collector	Collector	0.63
Fallbrook	MISSION	LA CANADA	CPA BOUNDARY	Light Collector	Collector	1.60
Fallbrook	OLD 395	MISSION	MISSION	Light Collector	Collector	0.64
Fallbrook	OLD 395	RECHE	CANONITA	Light Collector	Town Collector	0.72
Fallbrook	OLD 395	CANONITA	TECALOTE	Light Collector	Town Collector	0.57
Fallbrook	OLD 395	TECALOTE	PALA MESA	Light Collector	Collector	2.17
Fallbrook	OLD 395	PALA MESA	VIA BELMONTE	Light Collector	Collector	1.03
Fallbrook	OLD 395	VIA BELMONTE	PALA	Light Collector	Collector	0.83
Fallbrook	OLD 395	PALA	DULIN	Light Collector	Town Collector	0.54
Fallbrook	OLD 395	DULIN	WEST LILAC	Light Collector	Collector	3.15
Fallbrook	OLIVE HILL	MISSION	ELM TREE	Light Collector	Collector	0.92
Fallbrook	OLIVE HILL	ELM TREE	LA TARA	Light Collector	Collector	0.73
Fallbrook	OLIVE HILL	LA TARA	WHITE HORSE	Light Collector	Collector	1.10
Fallbrook	OLIVE HILL	WHITE HORSE	LADERA VISTA	Light Collector	Collector	1.00
Fallbrook	OLIVE HILL	LADERA VISTA	BURMA	Light Collector	Collector	0.47
Fallbrook	OLIVE HILL	BURMA	RANCHO BONITO	Light Collector	Town Collector	0.31
Fallbrook	OLIVE HILL	RANCHO BONITO	RANCHO CAM	Light Collector	Town Collector	0.36
Fallbrook	OLIVE HILL	RANCHO CAM	GATEVIEW	Light Collector	Collector	1.68
Fallbrook	OLIVE HILL	GATEVIEW	VIA PUERTA DEL S	Light Collector	Collector	1.41
Fallbrook	PANKEY	END OF ROADWAY	PALA	Light Collector	8L Prime	0.92
Fallbrook	PANKEY	PALA	SHEARER	Light Collector	Collector	0.17
Fallbrook	PEPPER TREE	MISSION	WOODLARK	Light Collector	Collector	0.23
Fallbrook	RECHE	STAGE COACH	RECHE WY	Light Collector	Collector	0.40
Fallbrook	RECHE	RECHE WY	FALLBROOK	Light Collector	Collector	0.62
Fallbrook	RECHE	FALLBROOK	LOS AMIGOS	Light Collector	Collector	0.16
Fallbrook	RECHE	LOS AMIGOS	GREEN CANYON	Light Collector	Collector	0.34
Fallbrook	RECHE	GREEN CANYON	LIVE OAK PARK	Light Collector	Town Collector	0.40
Fallbrook	RECHE	LIVE OAK PARK	GIRD	Light Collector	Town Collector	0.51
Fallbrook	RECHE	GIRD	SCOOTER	Light Collector	Town Collector	0.67
Fallbrook	RECHE	SCOOTER	CALLE TECOLOTIAN	Light Collector	Town Collector	0.58

Appendix B
Buildout Deficiencies
County Facilities

CPA	Name	From Cross Street	To Cross Street	Existing Classification	Required Classification	Additional Lane Miles Required
Fallbrook	RECHE	CALLE TECOLOTIAN	RANGER	Light Collector	Town Collector	0.53
Fallbrook	RECHE	RANGER	OLD 395	Light Collector	Town Collector	0.39
Fallbrook	STAGE COACH	FALLBROOK	MARITA	Light Collector	Collector	0.51
Fallbrook	STAGE COACH	MARITA	RECHE	Light Collector	Collector	0.50
Fallbrook	STAGE COACH	RECHE	RANCHWOOD	Light Collector	Town Collector	0.38
Fallbrook	STAGE COACH	RANCHWOOD	JOY	Light Collector	Collector	0.25
Fallbrook	STAGE COACH	JOY	BROOKE	Light Collector	Collector	0.72
Fallbrook	STAGE COACH	BROOKE	KNOLLWOOD	Light Collector	Town Collector	0.61
Fallbrook	STAGE COACH	KNOLLWOOD	MORRO	Town Collector	Collector	0.48
Fallbrook	STAGE COACH	MORRO	MISSION	Town Collector	Collector	0.48
Jamul-Dulzura	JAMUL	TUK A WILE	YUCCA	Light Collector	Town Collector	1.04
Jamul-Dulzura	JAMUL	YUCCA	LYONS VALLEY	Light Collector	Town Collector	0.08
Jamul-Dulzura	JEFFERSON	OLIVE VISTA	SR-94	Light Collector	Town Collector	0.18
Jamul-Dulzura	LYONS VALLEY	JEFFERSON	RESERVOIR	Light Collector	Collector	0.39
Jamul-Dulzura	LYONS VALLEY	RESERVOIR	JAMUL	Light Collector	Collector	0.36
Jamul-Dulzura	LYONS VALLEY	JAMUL	RIO GRANDE	Light Collector	Collector	0.85
Jamul-Dulzura	LYONS VALLEY	RIO GRANDE	PLEASANT VIEW	Light Collector	Collector	0.70
Jamul-Dulzura	PROCTOR VALLEY	MELODY	CALLE BUENO GANA	Light Collector	Town Collector	0.11
Jamul-Dulzura	PROCTOR VALLEY	CALLE BUENO GANA	SCHLEE CANYON	Light Collector	Town Collector	0.41
Jamul-Dulzura	PROCTOR VALLEY	SCHLEE CANYON	MAXFIELD	Light Collector	Collector	0.52
Jamul-Dulzura	PROCTOR VALLEY	MAXFIELD	JEFFERSON	Light Collector	Collector	0.38
Lakeside	ASHWOOD	WILLOW	MAPLEVIEW	Light Collector	Collector	2.23
Lakeside	EL NOPAL	FUTURE N/S MASS	MARJEAN	Light Collector	Town Collector	0.33
Lakeside	EL NOPAL	MARJEAN	RIVERFORD	Light Collector	Collector	0.22
Lakeside	I-8 BUSINESS / MAIN	JACKSON HILL	LAVALA	Light Collector	Collector	1.01
Lakeside	I-8 BUSINESS / MAIN	LOS COCHES/CM CA	JACKSON HILL	Light Collector	Collector	0.91
Lakeside	I-8 BUSINESS / MAIN	.31 MILES SOUTH OF KAY JAY / MOBILE HOME PARK	LOS COCHES/CM CA	Light Collector	Collector	0.81
Lakeside	I-8 BUSINESS / MAIN	PINKARD	LAKEVIEW / EL DORADO	Light Collector	Town Collector	0.23
Lakeside	JULIAN	CACTUS	LOS COCHES/MAINE	Light Collector	Town Collector	0.18
Lakeside	JULIAN	PINO	LAKEVIEW	Light Collector	Town Collector	0.16

Appendix B
Buildout Deficiencies
County Facilities

CPA	Name	From Cross Street	To Cross Street	Existing Classification	Required Classification	Additional Lane Miles Required
Lakeside	LAKE JENNINGS PA	EL MONTE	BASS	Light Collector	Collector	1.00
Lakeside	LAKE JENNINGS PA	BASS	PINKARD	Light Collector	Collector	1.74
Lakeside	LAKE JENNINGS PA	PINKARD	HARRITT	Light Collector	Collector	0.20
Lakeside	LAKE JENNINGS PA	HARRITT	HWY 8/BLOSSOM VA	Light Collector	Collector	0.23
Lakeside	LAKE JENNINGS PA	HWY 8/BLOSSOM VA	RAMP I-8 WB	Light Collector	Collector	0.10
Lakeside	LAKE JENNINGS PA	RAMP I-8 WB	RAMP I-8 WB	Light Collector	Collector	0.06
Lakeside	LAKE JENNINGS PA	RAMP I-8 WB	OLDE 80	Light Collector	Collector	0.14
Lakeside	LAKESIDE	RIVERSIDE	CHANNEL	Town Collector	Collector	0.42
Lakeside	LOS COCHES	JULIAN	DEL SOL	Town Collector	Collector	0.94
Lakeside	LOS COCHES	DEL SOL	LOS COCHES CT	Town Collector	Collector	1.01
Lakeside	LOS COCHES	LOS COCHES CT	BOWER	Town Collector	Collector	0.76
Lakeside	LOS COCHES	BOWER	LAKEVIEW	Town Collector	Collector	0.40
Lakeside	LOS COCHES	LAKEVIEW	I-8 BUSINESS / MAIN	Town Collector	Collector	0.58
Lakeside	MAPLEVIEW	CHANNEL	SR-67	Light Collector	Collector	0.42
Lakeside	MAPLEVIEW	SR-67	MAINE	Light Collector	Prime Arterial	0.17
Lakeside	MAPLEVIEW	MAINE	VINE	Town Collector	Prime Arterial	0.11
Lakeside	OLDE 80	RIDGE HILL	PECAN PARK	Light Collector	Collector	0.07
Lakeside	OLDE 80	PECAN PARK / SIERRA ALTA	PECAN PARK	Light Collector	Collector	0.61
Lakeside	OLDE 80	PECAN PARK	BOND	Light Collector	Collector	0.30
Lakeside	PEPPER	02ND/WINTER GARD	PEERLESS	Light Collector	Town Collector	0.25
Lakeside	RIVERFORD	EL NOPAL	RIVERSIDE/MAST	Light Collector	Collector	0.16
Lakeside	RIVERFORD	RIVERSIDE/MAST	WOODSIDE(N)	Town Collector	Major	0.63
Lakeside	RIVERFORD	WOODSIDE(N)	RAMP SR-67 SB	Light Collector	Collector	0.08
Lakeside	RIVERFORD	RAMP SR-67 SB	WOODSIDE SOUTH	Light Collector	Collector	0.18
Lakeside	RIVERSIDE	RIVERFORD	PALM ROW	Town Collector	Collector	0.56
Lakeside	RIVERSIDE	PALM ROW	VISTA CAMINO	Town Collector	Collector	0.42
Lakeside	RIVERSIDE	VISTA CAMINO	NEW BEDFORD	Town Collector	Collector	0.21
Lakeside	LAKE JENNING PARK	RAMP I-8 EB	OLDE 80	Light Collector	Collector	0.07
Lakeside	LAKE JENNING PARK	LAKE JENNINGS PARK	RAMP I-8 EB	Light Collector	Collector	0.06
Lakeside	VALLE VISTA	VISTA CAMINO	PAGOSA	Light Collector	Town Collector	0.38
Lakeside	VALLE VISTA	PAGOSA	RIVERSIDE	Light Collector	Town Collector	0.41
Lakeside	WILDCAT CANYON	PATA RANCH	WILLOW	Light Collector	Collector	5.56

Appendix B
Buildout Deficiencies
County Facilities

CPA	Name	From Cross Street	To Cross Street	Existing Classification	Required Classification	Additional Lane Miles Required
Lakeside	WILLOW	SR-67	MORENO	Light Collector	Town Collector	0.25
Lakeside	WILLOW	MORENO	FILLBROOK	Light Collector	Town Collector	0.29
Lakeside	WILLOW	FILLBROOK	WILDCAT CANYON	Light Collector	Town Collector	0.36
Lakeside	WOODSIDE	NB OFF RAMP	RIVERFORD	Light Collector	Collector	0.13
Lakeside	WOODSIDE	RIVERFORD	RAMP SR-67 NB	Light Collector	Collector	0.12
Lakeside	WOODSIDE	RAMP SR-67 NB	MARILLA	Light Collector	Collector	0.59
Lakeside	WOODSIDE	MARILLA	RIVERVIEW	Light Collector	Collector	0.42
Lakeside	WOODSIDE	RIVERVIEW	WINTER GARDENS	Light Collector	Town Collector	0.35
North County Metro	17TH	LENDEE	SAN PASQUAL VALL	Light Collector	Collector	0.44
North County Metro	BEAR VALLEY	BIRCH	IDAHO	Light Collector	Collector	0.31
North County Metro	BEAR VALLEY	IDAHO	LANDAVO / CAIN	Light Collector	Collector	0.22
North County Metro	BEAR VALLEY	LANDAVO	SUBURBAN HILLS	Light Collector	Collector	0.28
North County Metro	BUENA CREEK / SOUTH SANTA FE	SOUTH SANTA FE	SYCAMORE / ROBELINI	Light Collector	Collector	0.04
North County Metro	BUENA CREEK	SYCAMORE	HARTWRIGHT / BUENA CREEK	Light Collector	Collector	0.06
North County Metro	BUENA CREEK	HARTWRIGHT / BUENA CREEK	HIDDEN OAK	Light Collector	Collector	1.40
North County Metro	BUENA CREEK	HIDDEN OAK	LONE OAK	Light Collector	Collector	0.33
North County Metro	BUENA CREEK	LONE OAK	MONTE VISTA	Light Collector	Collector	0.50
North County Metro	BUENA CREEK	MONTE VISTA	SUGARBUSH	Light Collector	Collector	1.21
North County Metro	BUENA CREEK	SUGARBUSH	HOLLYBERRY	Light Collector	Collector	0.17
North County Metro	BUENA CREEK	HOLLYBERRY	FREDAS HILL	Light Collector	Town Collector	0.28
North County Metro	BUENA CREEK	FREDAS HILL	BLUE BIRD CANYON	Light Collector	Town Collector	0.50
North County Metro	BUENA CREEK	BLUE BIRD CANYON	TAMARA	Light Collector	Town Collector	0.43
North County Metro	CAMINO DEL ARROYO	CAMINO LINDA DRIVE	RANCHO SANTA FE	Light Collector	Town Collector	0.06
North County Metro	CHAMPAGNE	WELK VIEW	LAWRENCE WELK	Light Collector	Collector	0.74
North County Metro	CHAMPAGNE	LAWRENCE	MOUNTAIN MEADOW	Light Collector	Collector	3.62
North County Metro	DEER SPRINGS	MULBERRY / SYCAMORE DRIVE	MARILYN	Light Collector	Collector	0.33
North County Metro	DEER SPRINGS	MARILYN	SARVER	Light Collector	Collector	0.74
North County Metro	DEER SPRINGS	SARVER	MESA ROCK	Light Collector	Prime Arterial	5.79
North County Metro	DEER SPRINGS	MESA ROCK	MOUNTAIN MEADOW	Light Collector	Prime Arterial	0.21

Appendix B
Buildout Deficiencies
County Facilities

CPA	Name	From Cross Street	To Cross Street	Existing Classification	Required Classification	Additional Lane Miles Required
North County Metro	DEL DIOS	COUNTRY CLUB	ELM	Light Collector	Collector	0.74
North County Metro	HARMONY GROVE	WILGEN	CPA BOUNDARY	Light Collector	Town Collector	1.66
North County Metro	HARMONY GROVE	COUNTRY CLUB	WILGEN	Light Collector	Town Collector	0.39
North County Metro	HOLLYBERRY	BUENA CREEK	SALEM	Light Collector	Collector	0.48
North County Metro	N CENTRE CITY	MOUNTAIN MEADOW	JESMOND DENE	Light Collector	Town Collector	0.58
North County Metro	N CENTRE CITY	JESMOND DENE	MESA ROCK	Light Collector	Collector	2.51
North County Metro	N CENTRE CITY	MESA ROCK	IVY DELL	Light Collector	Collector	0.71
North County Metro	N CENTRE CITY	IVY DELL	CENTRE CITY	Light Collector	Collector	0.42
North County Metro	ROCK SPRING	.005 WEST OF BENNETT / ROCK SPRING INTERSECTION	BENNETT	Light Collector	Collector	0.01
North County Metro	ROCK SPRING	MONTIEL	SEVEN OAKES	Light Collector	Town Collector	0.05
North County Metro	SALEM	HOLLYBERRY	EMMA	Light Collector	Collector	1.00
North County Metro	SAN PASQUAL	ZERMATT	VIA RANCHO	Light Collector	Collector	0.99
North County Metro	SOUTH SANTA FE	WOODLAND	ROBELINI	Major	Prime Arterial	0.56
North County Metro	SYCAMORE	ROBELINI	BUENA CREEK	Major	Prime Arterial	0.50
North County Metro	SYCAMORE	RAMP SR-78 WB	RAMP SR-78 EB	Prime Arterial	Prime	0.09
North County Metro	SYCAMORE	SHADOW RIDGE	HIBISCUS	Major	Prime Arterial	0.29
North County Metro	VALLEY CENTER	ESCONDIDO CPA BOUNDARY	VALLEY CENTER CPA BOUNDARY	Major	Prime Arterial	0.09
North County Metro	VIA RANCHO	VALLEY	LAKE	Light Collector	Town Collector	0.06
North County Metro	VIA RANCHO	LAKE	HIGHLANDS WEST	Light Collector	Town Collector	0.20
North County Metro	VIA RANCHO	HIGHLANDS WEST	EUCALYPTUS	Light Collector	Town Collector	0.50
North County Metro	VIA RANCHO	VISTA DE LA CRESTA	VIA LOMA VISTA	Light Collector	Town Collector	0.57
North County Metro	VIA RANCHO	VIA LOMA VISTA	FELICITA	Light Collector	Collector	1.49
North County Metro	VIA RANCHO	FELICITA	MONTESANO	Light Collector	Collector	0.26
North County Metro	SAN PASQUAL ROAD	VIENTO VALLE	VIA SOL	Light Collector	Collector	2.15
Otay	AIRWAY	FARADAY	ENRICO FERMI	Light Collector	Collector	0.48
Otay	ALTA	DONOVAN STATE PRISON	CALZADA DE LA FUENTE	Light Collector	Collector	0.95
Otay	ALTA	PASEO DE LA FUENTE	CALZADA DE LA FUENTE	Light Collector	Prime Arterial	0.93
Otay	ALTA	OTAY MESA	PASEO DE LA FUENTE	Light Collector	Prime Arterial	0.83

Appendix B
Buildout Deficiencies
County Facilities

CPA	Name	From Cross Street	To Cross Street	Existing Classification	Required Classification	Additional Lane Miles Required
Otay	ENRICO FERMI	OTAY MESA	RAMP SR-11 WB	Major	Prime Arterial	0.40
Otay	ENRICO FERMI	RAMP SR-11 WB	RAMP SR-11 EB	Major	Prime Arterial	0.18
Otay	ENRICO FERMI	RAMP SR-11 EB	AIRWAY	Major	Prime Arterial	0.65
Otay	ENRICO FERMI	AIRWAY	SIEMPRE VIVA	Light Collector	Prime Arterial	0.90
Otay	HARVEST	LONESTAR	OTAY MESA	Light Collector	Prime Arterial	2.93
Otay	LONESTAR	PIPER RANCH	HARVEST	Light Collector	Prime Arterial	2.31
Otay	OTAY LAKES	WUESTE	LOWER OTAY LAKE	Light Collector	Prime Arterial	1.21
Otay	OTAY LAKES	LOWER OTAY LAKE	CAMPO RD	Light Collector	Town Collector	3.29
Otay	OTAY MESA	PASEO DE LAS AMERICA	FARADAY	Major	Prime Arterial	1.58
Otay	OTAY MESA	FARADAY	ENRICO FERMI	Major	Prime Arterial	0.92
Otay	OTAY MESA	ENRICO FERMI	ALTA	Major	Prime Arterial	5.14
Pala-Pauma	VALLEY CENTER	PALA/SR-76	GOLSH	Town Collector	Collector	1.76
Pendleton-De Luz	BASILONE	RAMP I-5 SB	RAMP I-5 NB	Light Collector	Collector	0.19
Pendleton-De Luz	COAST	SAN DIEGO / I5 RAMP	MONTEREY	Light Collector	Collector	0.13
Pendleton-De Luz	SAN DIEGO / I5 RAMP	VANDEGRIFT	RAMP	Major	Prime Arterial	0.36
Pendleton-De Luz	I5 / HARBOR DRIVE	NB OFF RAMP	SB ON RAMP	Light Collector	Prime Arterial	0.78
Pendleton-De Luz	VANDEGRIFT	WIRE MTN/MAIN GA	RAMP I-5 NB	Major	8L Prime	0.93
Pepper Drive-Bosto	BRADLEY	GRAVES	STONE EDGE CIRC	Light Collector	Collector	0.40
Pepper Drive-Bosto	BRADLEY	STONE EDGE	SAM HILL	Light Collector	Collector	0.23
Pepper Drive-Bosto	BRADLEY	SAM HILL	BERRY DALE	Light Collector	Collector	0.21
Pepper Drive-Bosto	BRADLEY	SUMMER PLACE	01ST	Light Collector	Town Collector	0.12
Pepper Drive-Bosto	GRAVES	PEPPER	GRAVES CT	Light Collector	Town Collector	0.14
Pepper Drive-Bosto	GRAVES	GRAVES CT	BRADLEY	Light Collector	Town Collector	0.29
Pepper Drive-Bosto	GREENFIELD	VERNON	GRAVES	Light Collector	Collector	0.86
Pepper Drive-Bosto	GREENFIELD	DENVER	DIAMOND	Light Collector	Collector	0.27
Pepper Drive-Bosto	GREENFIELD	DIAMOND	01ST	Light Collector	Collector	0.27
Pepper Drive-Bosto	GREENFIELD	01ST	ORO	Light Collector	Town Collector	0.26
Pepper Drive-Bosto	GREENFIELD	ORO	02ND	Light Collector	Town Collector	0.21
Pepper Drive-Bosto	MAGNOLIA	AIRPORT	DENNY	Light Collector	Collector	0.53
Pepper Drive-Bosto	MAGNOLIA	DENNY	BRADLEY	Light Collector	Collector	0.20
Pepper Drive-Bosto	MAGNOLIA	BRADLEY	CYPRESS	Light Collector	Collector	0.31
Pepper Drive-Bosto	MAGNOLIA	CYPRESS	VERNON	Light Collector	Collector	0.63

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CPA	Name	From Cross Street	To Cross Street	Existing Classification	Required Classification	Additional Lane Miles Required
Pepper Drive-Bosto	PEERLESS	LILY	GREENFIELD	Light Collector	Town Collector	0.13
Pepper Drive-Bosto	PEPPER	TETON	VULCAN	Light Collector	Town Collector	0.05
Pepper Drive-Bosto	PEPPER	VULCAN	ROXANNE	Light Collector	Town Collector	0.07
Pepper Drive-Bosto	PEPPER	ROXANNE	GARYWOOD/MARLINDA	Light Collector	Town Collector	0.20
Pepper Drive-Bosto	PEPPER	GARYWOOD/MARLINDA	BATES	Light Collector	Town Collector	0.14
Pepper Drive-Bosto	PEPPER	BATES	MOLLISON	Light Collector	Collector	0.30
Pepper Drive-Bosto	PEPPER	MOLLISON	PEPPER VILLA	Light Collector	Town Collector	0.07
Pepper Drive-Bosto	PEPPER	PEPPER VILLA	01ST	Light Collector	Town Collector	0.25
Pepper Drive-Bosto	PEPPER	SOMER LANE	02ND/WINTER GARD	Light Collector	Town Collector	0.24
Rainbow	OLD 395	MISSION	RAINBOW GLEN	Light Collector	Collector	2.35
Rainbow	OLD 395	05TH	RAINBOW GLEN	Light Collector	Collector	1.14
Rainbow	OLD 395	02ND	05TH	Light Collector	Town Collector	0.29
Rainbow	RAINBOW VALLEY W	RAMP	OLD 395	Light Collector	Town Collector	0.04
Ramona	MONTECITO	DAVIS	RAMONA	Light Collector	Town Collector	0.39
Ramona	OLIVE	MAPLE	PINE	Light Collector	Collector	0.50
Ramona	OLIVE	PINE	ELM	Light Collector	Town Collector	0.29
Ramona	RAMONA	RAYMOND	MAIN	Light Collector	Town Collector	0.14
Ramona	RAMONA	ROWLEY	HANSON LANE	Light Collector	Town Collector	0.07
Ramona	SAN VICENTE	H STREET	BARGER	Town Collector	Collector	0.94
Ramona	SAN VICENTE	HANSON	JAY BIRD	Town Collector	Collector	0.51
Ramona	SAN VICENTE	JAY BIRD	CREELMAN	Town Collector	Collector	0.49
Ramona	SAN VICENTE	WARNOCK	KEYES	Light Collector	Collector	0.67
Ramona	SAN VICENTE	KEYES	DYE	Light Collector	Collector	0.14
Ramona	SAN VICENTE	DYE	BUNNIE KING	Light Collector	Collector	0.58
Ramona	SAN VICENTE	BUNNIE KING	CHUCKWAGON	Light Collector	Collector	2.57
Ramona	SAN VICENTE	CHUCKWAGON	WILDCAT CANYON	Light Collector	Collector	0.41
Ramona	SAN VICENTE	WILDCAT CANYON	VICENTE MEADOW	Light Collector	Collector	0.64
Ramona	WILDCAT CANYON	SAN VICENTE	LITTLE KLONDIKE	Light Collector	Collector	0.75
Ramona	WILDCAT CANYON	LITTLE KLONDIKE	SAN VINCENTE OAK	Light Collector	Town Collector	2.19
San Dieguito	CAMINO DEL NORTE	DOVE CANYON	RAMP	Light Collector	Prime Arterial	1.24
San Dieguito	CAMINO DEL NORTE	4S RANCH PARKWAY	DOVE CANYON	Light Collector	Collector	0.51
San Dieguito	DEL DIOS	ELM	MT ISRAEL	Light Collector	Collector	2.60
San Dieguito	DEL DIOS	MT ISRAEL	RANCHO	Light Collector	Collector	0.11

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Buildout Deficiencies
County Facilities

CPA	Name	From Cross Street	To Cross Street	Existing Classification	Required Classification	Additional Lane Miles Required
San Dieguito	DEL DIOS	RANCHO	LAKE DR	Light Collector	Collector	1.15
San Dieguito	DEL DIOS	LAKE	RANCHO DEL RIO	Light Collector	Collector	6.32
San Dieguito	DEL DIOS	RANCHO DEL RIO	LUNA DE MIEL	Light Collector	Collector	0.92
San Dieguito	DEL DIOS	LUNA DE MIEL	EL CAMINO DEL NORTE	Light Collector	Collector	1.34
San Dieguito	EL APAJO	VIA DE SANTA FE	SAN DIEGUITO	Light Collector	Town Collector	0.57
San Dieguito	ELFIN FOREST	ELFIN OAKS	HARMONY GROVE	Light Collector	Collector	2.74
San Dieguito	HARMONY GROVE	CRESTWIND/WILGEN	QUESTHAVEN	Light Collector	Town Collector	1.16
San Dieguito	LA BAJADA	CPA BOUNDARY	EL MIRLO	Light Collector	Collector	0.33
San Dieguito	LA BAJADA	EL MIRLO	LA NORIA	Light Collector	Collector	0.57
San Dieguito	PASEO DELICIAS	VIA DE LA VALLE	LA GRANADA	Light Collector	Town Collector	0.29
San Dieguito	PASEO DELICIAS	LA FREMONTIA	VIA DE LA VALLE	Light Collector	Major	0.10
San Dieguito	PASEO DELICIAS	LAVALLE PLATEADA	LA FREMONTIA	Light Collector	Collector	0.18
San Dieguito	PASEO DELICIAS	EL MONTEVIDEO	LAVALLE PLATEADA	Light Collector	Collector	1.09
San Dieguito	PASEO DELICIAS	EL CAMINO DEL NO	EL MONTEVIDEO	Light Collector	Collector	1.13
San Dieguito	RANCHO BERNARDO	CAM SAN BERNARDO	ALVA / CPA BOUNDARY	Major	Prime Arterial	0.57
San Dieguito	SAN DIEGUITO	WINLAND HILLS	CAM SANTA FE	Light Collector	Town Collector	0.74
San Dieguito	SAN DIEGUITO	RANCHO DIEGUENO	WINDLAND HILLS	Light Collector	Collector	0.66
San Dieguito	SAN DIEGUITO	CALLE DEL NIDO	RANCHO DIEGUENO	Light Collector	Town Collector	0.53
San Dieguito	SAN DIEGUITO	EL APAJO	CALLE DEL NIDO	Light Collector	Town Collector	0.08
San Dieguito	SAN DIEGUITO	VIA DOS VALLES	EL APAJO	Light Collector	Collector	1.48
San Dieguito	SAN DIEGUITO	SAN DIEGO CL / CPA BOUNDARY	VIA DOS VALLES	Light Collector	Collector	1.70
San Dieguito	SAN ELIJO RD	FALL VIEW	HIDDEN CANYON	Major	Prime Arterial	0.50
San Dieguito	VIA DE LA VALLE	PASEO DELICIAS	LAS COLINAS	Light Collector	Collector	0.05
San Dieguito	VIA DE LA VALLE	LAS COLINAS	VIA DE SANTA FE	Light Collector	Collector	1.12
San Dieguito	VIA DE LA VALLE	VIA DE SANTA FE	VIA DE SANTA FE	Light Collector	Collector	0.06
San Dieguito	VIA DE LA VALLE	VIA DE SANTA FE	LA GRACIA	Light Collector	Collector	0.79
San Dieguito	VIA DE LA VALLE	LA GRACIA	CALZADA DEL BOSQ	Light Collector	Town Collector	0.49
San Dieguito	VIA DE LA VALLE	CALZADA DEL BOSQ	LAS PALOMAS	Light Collector	Town Collector	0.87
San Dieguito	VIA DE LA VALLE	LAS PALOMAS	CANCHA DE GOLF	Light Collector	Town Collector	0.16
San Dieguito	VIA DE LA VALLE	CANCHA DE GOLF	LAS PLANIDERAS	Light Collector	Collector	1.22
San Dieguito	VIA DE LA VALLE	ARROYO ROSITA	CAMINO REAL	Light Collector	Collector	0.62
San Dieguito	VIA DE SANTA FE	VIA DE LA VALLE	CALZADA DEL BOSQ	Light Collector	Town Collector	0.65

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County Facilities

CPA	Name	From Cross Street	To Cross Street	Existing Classification	Required Classification	Additional Lane Miles Required
San Dieguito	VIA DE SANTA FE	CALZADA DEL BOSQ	EL APAJO	Light Collector	Collector	0.83
Spring Valley	APPLE	GRAND AVE	RAMONA	Light Collector	Town Collector	0.15
Spring Valley	APPLE	RAMONA	MAYA	Light Collector	Town Collector	0.26
Spring Valley	BANCROFT	CPA BOUNDARY	RAMP SR-94 EB	Light Collector	Collector	0.05
Spring Valley	BANCROFT	RAMP SR-94 EB	HELIX	Light Collector	Collector	0.08
Spring Valley	BANCROFT	HELIX	KOONCE	Light Collector	Collector	0.33
Spring Valley	BANCROFT	KOONCE	KENWOOD	Light Collector	Collector	0.37
Spring Valley	BANCROFT	KENWOOD	SWITZER	Light Collector	Collector	0.19
Spring Valley	BANCROFT	SWITZER	OLIVE	Light Collector	Collector	0.12
Spring Valley	BANCROFT	OLIVE	LAMAR	Light Collector	Collector	0.50
Spring Valley	BANCROFT	LAMAR	TROY	Light Collector	Collector	0.35
Spring Valley	CAMPO	RAMP	KENWOOD	Light Collector	Collector	0.16
Spring Valley	CAMPO	KENWOOD	TERRACE	Light Collector	Collector	0.27
Spring Valley	JAMACHA BOULEVAR	WHITESTONE	JAMACHA ROAD	Light Collector	Collector	0.59
Spring Valley	JAMACHA BOULEVAR	SPRING GLEN	WHITESTONE	Light Collector	Collector	0.64
Spring Valley	JAMACHA BOULEVAR	SPRING GLEN	POINTE PARKWAY	Light Collector	Collector	0.18
Spring Valley	JAMACHA BOULEVAR	JAMACHA	SPRING GLEN	Light Collector	Collector	0.27
Spring Valley	JAMACHA BOULEVAR	SWEETWATER SPRIN	POINTE PARKWAY	Light Collector	Collector	0.52
Spring Valley	JAMACHA ROAD	RAMP SR-125 HOV	RAMP SR-125 NB	Major	Prime Arterial	0.18
Spring Valley	JAMACHA ROAD	RAMP SR-125 NB	SWEETWATER	Major	Prime Arterial	0.15
Spring Valley	KENWOOD	DALE	RAMP SR-94 EB	Light Collector	Town Collector	0.03
Spring Valley	KENWOOD	RAMP SR-94 EB	RAMP SR-94 WB	Light Collector	Collector	0.19
Spring Valley	PARADISE VALLEY	ELKELTON	RAMP SR-125 SB	Major	Prime Arterial	0.15
Spring Valley	PARADISE VALLEY	RAMP SR-125 SB	RAMP SR-125 NB	Major	Prime Arterial	0.29
Spring Valley	PARADISE VALLEY	RAMP SR-125 NB	SWEETWATER-NEW	Major	Prime Arterial	0.07
Spring Valley	SWEETWATER SPRIN	DEL RIO	DON PICO	Major	Prime Arterial	0.12
Spring Valley	SWEETWATER SPRIN	DON PICO	CRISTOBAL	Major	Prime Arterial	0.16
Spring Valley	TROY	SWEET WATER	CENTRAL	Light Collector	Collector	0.49
Spring Valley	TROY	CENTRAL	BANCROFT	Light Collector	Collector	0.43
Spring Valley	WORTHINGTON	PARADISE VALLEY	VERDE RIDGE	Light Collector	Town Collector	0.11
Sweetwater	BONITA	SWEETWATER	SAN MIGUEL	Light Collector	Collector	0.52
Sweetwater	BONITA	SAN MIGUEL	FRISBIE	Light Collector	Collector	0.86
Sweetwater	BONITA	FRISBIE	CENTRAL	Light Collector	Collector	0.28

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County Facilities

CPA	Name	From Cross Street	To Cross Street	Existing Classification	Required Classification	Additional Lane Miles Required
Sweetwater	BONITA	RANDY	PLZA BONITA/LYNN	Major	Prime Arterial	0.82
Sweetwater	BRIARWOOD	SOUTH BAY PARKWAY / FREEWAY	RAMP SR-54 EB	Light Collector	Collector	0.03
Sweetwater	BRIARWOOD	RAMP SR-54 EB	ROBINWOOD	Light Collector	Collector	0.10
Sweetwater	SWEETWATER	VALLEY	WILLOW	Light Collector	Town Collector	0.32
Sweetwater	SWEETWATER	BRIARWOOD	BONITA WOODS	Light Collector	Collector	0.81
Sweetwater	SWEETWATER	DEGEN	BONITA	Light Collector	Collector	0.32
Sweetwater	SWEETWATER	QUARRY	DEGEN	Light Collector	Collector	1.04
Sweetwater	SWEETWATER	SOUTHBAY PARKWAY / FREEWAY	QUARRY	Light Collector	Collector	0.66
Sweetwater	WILLOW	SWEETWATER	BONITA	Light Collector	Collector	0.45
Valle De Oro	BANCROFT	CAMPO	RAMP SR-94 WB	Light Collector	Town Collector	0.04
Valle De Oro	BANCROFT	RAMP SR-94 WB	CPA BOUNDARY	Light Collector	Collector	0.07
Valle De Oro	CAMPO	KENWOOD	TERRACE	Light Collector	Collector	0.10
Valle De Oro	CAMPO	TERRACE	BANCROFT	Light Collector	Collector	0.41
Valle De Oro	CAMPO	BANCROFT	HELIX	Light Collector	Collector	0.38
Valle De Oro	CAMPO	HELIX	ROGERS	Light Collector	Town Collector	0.38
Valle De Oro	CAMPO	ROGERS	KENWOOD	Light Collector	Town Collector	0.27
Valle De Oro	CHASE	GROVE	BERNITA	Light Collector	Collector	0.22
Valle De Oro	CHASE	BERNITA	CHASE LANE	Light Collector	Collector	0.50
Valle De Oro	CHASE	CHASE LANE	MONUMENT HILL	Light Collector	Collector	0.70
Valle De Oro	CHASE	MONUMENT HILL	FUERTE	Light Collector	Collector	0.14
Valle De Oro	CHASE	FUERTE	BRAYTON	Light Collector	Collector	0.16
Valle De Oro	CHASE	BRAYTON	JAMACHA ROAD	Light Collector	Collector	0.37
Valle De Oro	FUERTE	GROSSMONT SUMMIT	GROSSMONT	Light Collector	Town Collector	0.02
Valle De Oro	FUERTE	GROSSMONT	SIERRA VISTA	Light Collector	Town Collector	0.20
Valle De Oro	FUERTE	SIERRA VISTA	SUMMIT	Light Collector	Town Collector	0.31
Valle De Oro	FUERTE	SUMMIT	PANDORA	Light Collector	Town Collector	0.31
Valle De Oro	FUERTE	PANDORA	LEMON	Light Collector	Town Collector	0.10
Valle De Oro	FUERTE	LEMON	HELIX	Light Collector	Collector	0.72
Valle De Oro	FUERTE	HELIX	GRANDVIEW	Light Collector	Collector	0.82
Valle De Oro	HILLSDALE	CHASE	WIND RIVER	Light Collector	Town Collector	0.16
Valle De Oro	JAMUL	STEELE CANYON	IVANHOE RANCH	Light Collector	Collector	0.35

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CPA	Name	From Cross Street	To Cross Street	Existing Classification	Required Classification	Additional Lane Miles Required
Valle De Oro	JAMUL	IVANHOE RANCH	COTTONWOOD SPRIN	Light Collector	Collector	0.95
Valle De Oro	JAMUL	COTTONWOOD SPRIN	TUK A WILE	Light Collector	Town Collector	1.34
Valle De Oro	KENWOOD	RAMP SR-94 WB	CAMPO	Light Collector	Collector	0.20
Valle De Oro	NORTH BARCELONA	CAMPO	DOLORES	Light Collector	Town Collector	0.06
Valle De Oro	STEELE CANYON	WILLOW GLEN	JAMUL	Light Collector	Collector	1.00
Valle De Oro	STEELE CANYON	JAMUL	OLD CALIFORNIA	Light Collector	Town Collector	0.19
Valle De Oro	VIA MERCADO	CALLE VERDE	CAMPO	Light Collector	Collector	0.31
Valle De Oro	WILLOW GLEN	HILLSDALE	.31 MILES BEFORE STEELE CANYON	Light Collector	Town Collector	0.81
Valley Center	CHAMPAGNE	OLD 395	OLD CASTLE	Light Collector	Collector	0.32
Valley Center	CHAMPAGNE	OLD CASTLE	CPA BOUNDARY	Light Collector	Collector	1.93
Valley Center	COLE GRADE	VIA VALENCIA	FRUITVALE	Town Collector	Collector	1.36
Valley Center	COLE GRADE	FRUITVALE	1003 ft NORTH OF VALLEY CENTER	Town Collector	Collector	0.96
Valley Center	COLE GRADE	1003 ft NORTH OF VALLEY CENTER	VALLEY CENTER	Town Collector	Major	0.38
Valley Center	LILAC	WEST LILAC	LILAC HILL	Light Collector	Town Collector	0.26
Valley Center	LILAC	LILAC HILL	OLD CASTLE	Light Collector	Town Collector	1.27
Valley Center	LILAC	OLD CASTLE	ROBLE VERDE	Light Collector	Collector	1.27
Valley Center	LILAC	ROBLE VERDE	ANTHONY	Light Collector	Collector	2.02
Valley Center	LILAC	ANTHONY	BETSWORTH	Light Collector	Collector	2.80
Valley Center	LILAC	BETSWORTH	VALLEY CENTER	Light Collector	Collector	0.58
Valley Center	MOUNTAIN MEADOW	AERIE	FRACE	Light Collector	Town Collector	0.26
Valley Center	OLD 395	CAM DEL REY	CIRCLE R	Light Collector	Collector	1.65
Valley Center	OLD 395	CIRCLE R	GOPHER CANYON	Light Collector	Collector	0.30
Valley Center	OLD CASTLE	CHAMPAGNE	PRIVATE ROAD e/o QUEEN ANN	Light Collector	Collector	3.44
Valley Center	OLD CASTLE	PRIVATE ROAD e/o QUEEN ANN	AIRFLIGHT	Light Collector	Town Collector	2.21
Valley Center	VALLEY CENTER	VESPER	COLE GRADE	Light Collector	Collector	0.43
Valley Center	VALLEY CENTER	COLE GRADE	MILLER	Major	Prime Arterial	1.04
Valley Center	VALLEY CENTER	MILLER	CHAPARREL	Major	Prime Arterial	0.94
Valley Center	VALLEY CENTER	CHAPARREL	LILAC	Major	Prime Arterial	0.59

CPA	Name	From Cross Street	To Cross Street	Existing Classification	Required Classification	Additional Lane Miles Required
Valley Center	VALLEY CENTER	SUNDAY	CHARLAN	Major	Prime Arterial	0.94
Valley Center	VALLEY CENTER	CHARLAN	WOODS VALLEY	Major	Prime Arterial	0.56
Valley Center	VALLEY CENTER	WOODS VALLEY	BANBURY	Major	Prime Arterial	0.29
Valley Center	VALLEY CENTER	BANBURY	CPA BOUNDARY	Major	Prime Arterial	3.00

Appendix B
Buildout Deficiencies
State Facilities

CPA	Name	From	To	Lanes	Additional Lane Miles Required
Bonsall	MISSION	CPA BOUNDARY	.045 MILES WEST OF MISSION / PALA	2	13.66
Bonsall	MISSION	.045 WEST OF	.045 EAST OF MISSION / PALA	4	0.36
Bonsall	PALA	.045 EAST OF MISSION /	CPA BOUNDARY	2	2.55
Central Mountain	SR-78	RAMONA CPA - WEST OF	RAMONA CPA - EAST OF CENTRAL	2	0.42
Fallbrook	PALA	CPA BOUNDARY	COUSER CANYON ROAD	2	12.44
Jamul-Dulzura	CAMPO	CPA BOUNDARY / COUGAR	STONEY OAK ROAD	2	15.13
Jamul-Dulzura	SR-94	STONEY OAK ROAD	HONEY SPRING	2	0.83
Lakeside	SR-67	.2 miles South of SCRIPPS	.8 Miles South of FOSTER TRUCK TRAIL	2	2.23
Lakeside	SR-67	SCRIPPS POWAY PARKWAY	.2 Miles South of SCRIPPS POWAY	2	0.23
Lakeside	SR-67	CPA BOUNDARY	SCRIPPS POWAY PARKWAY	2	1.26
Lakeside	SR-67	VINE STREET ENTRANCE	MAPLEVIEW	3	0.92
Lakeside	SR-67	MAPLE VIEW	START OF SR. 67	4	0.07
Mountain Empire	TECATE	SR-94	HUMPHRIES ROAD	2	2.93
North County Metro	SAN PASQUAL VALLEY	BEAR VALLEY	.12 AFTER OLD SAN PASQUAL ROAD	2	2.24
North County Metro	SR-78	SYCAMORE (SEGMENT ON	SMILAX / CPA BOUNDARY	2	1.52
North Mountain	JULIAN / SR - 67	CPA BOUNDARY	SR-79	2	7.92
Pala-Pauma	SR-76	RED GATE ROAD (West Side)	CALLE EL POTRERO	2	2.50
Ramona	JULIAN / SR - 67	CPA BOUNDARY	MUSSEY GRADE	2	8.90
Ramona	JULIAN / SR - 67	OLD JULIAN	RAMONA CPA - WEST OF CENTRAL	2	3.43
Ramona	JULIAN / SR - 67 / MAIN	MUSSEY GRADE ROAD	MONTECITO	2	5.40
Ramona	JULIAN / SR - 67 / MAIN	10 TH	8TH	4	0.72
Ramona	SR-78	CPA BOUNDARY	HAVER FORD	2	3.85
Valle De Oro	CAMPO	JAMACHA ROAD	COUGAR CANYON ROAD	2	2.75

APPENDIX C – TIF IMPROVEMENT FACILITIES

CPA	Name	From Cross Street	To Cross Street	Existing Classification	Required Classification	Additional Lane Miles Required
Alpine	ALPINE	DUNBAR	RAMP I8 EB	Light Collector	Town Collector	0.07
Alpine	ALPINE	TAVERN	WEST VICTORIA	Light Collector	Collector	1.40
Alpine	ALPINE	WEST VICTORIA	Eltinge / MARSHALL	Light Collector	Collector	0.11
Alpine	ALPINE	Eltinge / MARSHALL	BAY MDOWS/MARINO	Light Collector	Collector	0.78
Alpine	ALPINE	BAY MDOWS/MARINO	SO GRADE/E VICTO	Light Collector	Collector	0.91
Alpine	SOUTH GRADE	Eltinge	OLIVE VIEW	Light Collector	Town Collector	0.08
Alpine	TAVERN	MONTEREY PL	VICTORIA PARK	Light Collector	Collector	1.20
Alpine	TAVERN	VICTORIA PARK	RAMP I-8 WB	Light Collector	Major	0.07
Alpine	TAVERN	RAMP I-8 EB	ALPINE	Major	Prime Arterial	0.20
Alpine	TAVERN	ARNOLD	TAVERN CT	Light Collector	Collector	0.29
Alpine	VICTORIA PARK	TAVERN	GENTIAN	Light Collector	Town Collector	0.40
Alpine	WILLOWS	RAMP I-8 EB	ALPINE	Light Collector	Town Collector	0.02
Barona	WILDCAT CANYON	PAINTED ROCK / SAN VINCENTE OAK	FEATHERSTONE CANYON	Light Collector	Town Collector	2.09
Barona	WILDCAT CANYON	FEATHERSTONE CANYON	BARONA ROAD	Light Collector	Town Collector	1.87
Barona	WILDCAT CANYON	BARONA ROAD	PATA RANCH	Light Collector	Collector	5.75
Bonsall	CHAMPAGNE	LAWRENCE WELK	OLD CASTLE	Light Collector	Collector	1.80
Bonsall	EAST VISTA	MISSION	OLD RIVER	Town Collector	Collector	0.13
Bonsall	GOPHER CANYON	ORMSBY	VISTA VALLEY	Light Collector	Collector	1.98
Bonsall	GOPHER CANYON	VISTA VALLEY	TWIN OAKS VALLEY	Light Collector	Collector	1.57
Bonsall	GOPHER CANYON	TWIN OAKS VALLEY	AVOHILL	Light Collector	Collector	1.65
Bonsall	GOPHER CANYON	AVOHILL	RAMP I-15 SB	Light Collector	Collector	1.63
Bonsall	GOPHER CANYON	RAMP I-15 SB	RAMP I-15 NB	Light Collector	Collector	0.19
Bonsall	GOPHER CANYON	RAMP I-15 NB	OLD 395	Light Collector	Collector	0.14
Bonsall	NORTH RIVER	KARI LANE	VIA PUERTA DEL S	Light Collector	Collector	0.10
Bonsall	NORTH RIVER	VIA PUERTA DEL S	MISSION	Light Collector	Collector	0.85
Bonsall	OLD 395	WEST LILAC	RAMP I-15 SB	Light Collector	Town Collector	0.85
Bonsall	OLD RIVER	CAMINO DEL REY	GOLF CLUB	Light Collector	Town Collector	0.33
Bonsall	OLD RIVER	GOLF CLUB	DENTRO	Light Collector	Town Collector	0.44
Bonsall	OLD RIVER	DENTRO	GOPHER CANYON	Light Collector	Town Collector	1.04
Bonsall	OLD RIVER	GOPHER CANYON	new OLD RIVER	Light Collector	Town Collector	0.53
Bonsall	OLIVEHILL / CAMINO DEL REY	MISSION	WEST LILAC / CAMINO DEL REY	Light Collector	Town Collector	0.25

CPA	Name	From Cross Street	To Cross Street	Existing Classification	Required Classification	Additional Lane Miles Required
Bonsall	VIA PUERTA DEL S	OLIVE HILL	VALLE DEL SOL	Light Collector	Town Collector	0.60
Bonsall	VIA PUERTA DEL S	VALLE DEL SOL	NORTH RIVER	Light Collector	Town Collector	1.52
Bonsall	WEST LILAC / CAMINO DEL REY	OLD RIVER	CAMINO DEL REY	Light Collector	Collector	0.59
Crest-Dehesa	DEHESA	CALLE ENCANTO	VISTA GRANDE	Light Collector	Collector	0.64
Crest-Dehesa	DEHESA	VISTA GRANDE	SINGING TRAILS	Light Collector	Collector	0.89
Crest-Dehesa	DEHESA	SINGING TRAILS	WILLOW GLEN	Light Collector	Town Collector	0.81
Crest-Dehesa	DEHESA	WILLOW GLEN	HARBISON CANYON	Light Collector	Collector	6.44
Crest-Dehesa	DEHESA	HARBISON CANYON	VISTA DE LA MONTANA	Light Collector	Collector	0.50
Crest-Dehesa	DEHESA	VISTA DE LA MONTANA	SYCUAN	Light Collector	Collector	0.97
Crest-Dehesa	SYCUAN	DEHESA	SYCUAN CASINO	Light Collector	Collector	0.70
Desert	BORREGO SPRINGS	CHRISTMAS S	STIRRUP	Light Collector	Collector	0.42
Desert	CHRISTMAS N	BORREGO SPRINGS	PALM CANYON	Light Collector	Collector	0.13
Desert	CHRISTMAS S	CHRISTMAS N	BORREGO SPRINGS	Light Collector	Collector	0.14
Desert	PALM CANYON	SUN AND SHADOWS	OCOTILLO	Light Collector	Town Collector	0.22
Desert	PALM CANYON	OCOTILLO	CHRISTMAS N	Light Collector	Collector	0.95
Desert	PALM CANYON	CHRISTMAS N	DIAMON BAR ROAD	Light Collector	Collector	0.49
Desert	PALM CANYON	STIRRUP	DI GIORGIO	Light Collector	Town Collector	0.23
Desert	PALM CANYON	DI GIORGIO	FAIRWAY	Light Collector	Town Collector	0.48
Fallbrook	FALLBROOK	MAIN	OLD STAGE	Light Collector	Collector	0.25
Fallbrook	FALLBROOK	MANDARIN	GOLDEN	Light Collector	Collector	0.54
Fallbrook	FALLBROOK	GOLDEN	MC DONALD	Light Collector	Town Collector	0.35
Fallbrook	FALLBROOK	MC DONALD	DEBBY	Light Collector	Town Collector	0.28
Fallbrook	FALLBROOK	DEBBY	STAGE COACH	Light Collector	Town Collector	0.22
Fallbrook	MISSION	RAMP I-15 NB	OLD 395	Light Collector	Collector	0.10
Fallbrook	MISSION	RAMP I-15 SB	RAMP I-15 NB	Light Collector	Collector	0.31
Fallbrook	MISSION	OLD 395	RAMP I-15 SB	Light Collector	Prime Arterial	0.22
Fallbrook	MISSION	HAMILTON	DAVIS	Light Collector	Collector	1.39
Fallbrook	MISSION	STAGE COACH	GUM TREE	Light Collector	Collector	0.26
Fallbrook	MISSION	OLD STAGE	PEPPER TREE	Major	Prime Arterial	0.16
Fallbrook	OLD 395	MISSION	CPA BOUNDARY	Light Collector	Collector	0.64
Fallbrook	OLD 395	RECHE	CANONITA	Light Collector	Town Collector	0.72
Fallbrook	OLD 395	CANONITA	TECALOTE	Light Collector	Town Collector	0.57
Fallbrook	OLD 395	TECALOTE	PALA MESA	Light Collector	Collector	2.17

CPA	Name	From Cross Street	To Cross Street	Existing Classification	Required Classification	Additional Lane Miles Required
Fallbrook	OLD 395	PALA MESA	VIA BELMONTE	Light Collector	Collector	1.03
Fallbrook	OLD 395	VIA BELMONTE	PALA	Light Collector	Collector	0.83
Fallbrook	OLD 395	PALA	DULIN	Light Collector	Town Collector	0.54
Fallbrook	OLD 395	DULIN	DULIN	Light Collector	Collector	0.43
Fallbrook	OLD 395	DULIN	WEST LILAC	Light Collector	Collector	2.72
Fallbrook	OLIVE HILL	MISSION	AIRPARK DRIVEWAY	Light Collector	Collector	0.29
Fallbrook	OLIVE HILL	AIRPARK DRIVEWAY	ELM TREE	Light Collector	Collector	0.63
Fallbrook	OLIVE HILL	ELM TREE	LA TARA	Light Collector	Collector	0.73
Fallbrook	OLIVE HILL	LA TARA	WHITE HORSE	Light Collector	Collector	1.10
Fallbrook	OLIVE HILL	WHITE HORSE	LADERA VISTA	Light Collector	Collector	1.00
Fallbrook	OLIVE HILL	LADERA VISTA	BURMA	Light Collector	Collector	0.47
Fallbrook	OLIVE HILL	BURMA	RANCHO BONITO	Light Collector	Town Collector	0.31
Fallbrook	OLIVE HILL	RANCHO BONITO	RANCHO CAM	Light Collector	Town Collector	0.36
Fallbrook	OLIVE HILL	RANCHO CAM	GATEVIEW	Light Collector	Collector	1.68
Fallbrook	OLIVE HILL	GATEVIEW	VIA PUERTA DEL S	Light Collector	Collector	1.41
Fallbrook	PANKEY	.2 MILE NORTH OF PALA INTERSECTION	PALA	Light Collector	8L Prime	0.92
Fallbrook	PANKEY	PALA	SHEARER	Light Collector	Collector	0.17
Fallbrook	PEPPER TREE	MISSION	WOODLARK	Light Collector	Collector	0.23
Fallbrook	RECHE	STAGE COACH	RECHE WY	Light Collector	Collector	0.40
Fallbrook	RECHE	RECHE WY	FALLBROOK	Light Collector	Collector	0.62
Fallbrook	RECHE	FALLBROOK	LOS AMIGOS	Light Collector	Collector	0.16
Fallbrook	RECHE	LOS AMIGOS	GREEN CANYON	Light Collector	Collector	0.34
Fallbrook	RECHE	GREEN CANYON	LIVE OAK PARK	Light Collector	Town Collector	0.40
Fallbrook	RECHE	LIVE OAK PARK	GIRD	Light Collector	Town Collector	0.51
Fallbrook	RECHE	GIRD	SCOOTER	Light Collector	Town Collector	0.67
Fallbrook	RECHE	SCOOTER	CALLE TECOLOTIAN	Light Collector	Town Collector	0.58
Fallbrook	RECHE	CALLE TECOLOTIAN	RANGER	Light Collector	Town Collector	0.53
Fallbrook	RECHE	RANGER	OLD 395	Light Collector	Town Collector	0.39
Fallbrook	STAGE COACH	RECHE	RANCHWOOD	Light Collector	Town Collector	0.38
Fallbrook	STAGE COACH	RANCHWOOD	JOY	Light Collector	Collector	0.25
Fallbrook	STAGE COACH	JOY	BROOKE	Light Collector	Collector	0.72
Fallbrook	STAGE COACH	BROOKE	KNOLLWOOD	Light Collector	Town Collector	0.61
Fallbrook	STAGE COACH	KNOLLWOOD	MORRO	Town Collector	Collector	0.48

CPA	Name	From Cross Street	To Cross Street	Existing Classification	Required Classification	Additional Lane Miles Required
Fallbrook	STAGE COACH	MORRO	MISSION	Town Collector	Collector	0.48
Jamul-Dulzura	JAMUL	TUK A WILE	YUCCA	Light Collector	Town Collector	1.04
Jamul-Dulzura	JAMUL	YUCCA	LYONS VALLEY	Light Collector	Town Collector	0.08
Jamul-Dulzura	JEFFERSON	OLIVE VISTA	SR-94	Light Collector	Town Collector	0.18
Jamul-Dulzura	LYONS VALLEY	JEFFERSON	RESERVOIR	Light Collector	Collector	0.39
Jamul-Dulzura	LYONS VALLEY	RESERVOIR	JAMUL	Light Collector	Collector	0.36
Jamul-Dulzura	LYONS VALLEY	JAMUL	RIO GRANDE	Light Collector	Collector	0.85
Jamul-Dulzura	LYONS VALLEY	RIO GRANDE	PLEASANT VIEW	Light Collector	Collector	0.70
Jamul-Dulzura	PROCTOR VALLEY	MELODY	CALLE BUENO GANA	Light Collector	Town Collector	0.11
Jamul-Dulzura	PROCTOR VALLEY	CALLE BUENO GANA	SCHLEE CANYON	Light Collector	Town Collector	0.41
Jamul-Dulzura	PROCTOR VALLEY	SCHLEE CANYON	MAXFIELD	Light Collector	Collector	0.52
Jamul-Dulzura	PROCTOR VALLEY	MAXFIELD	JEFFERSON	Light Collector	Collector	0.38
Lakeside	ASHWOOD	WILLOW	MAPLEVIEW	Light Collector	Collector	2.23
Lakeside	EL NOPAL	FUTURE N/S MASS	MARJEAN	Light Collector	Town Collector	0.33
Lakeside	EL NOPAL	MARJEAN	RIVERFORD	Light Collector	Collector	0.22
Lakeside	I-8 BUSINESS / MAIN	JACKSON HILL	LAVALA	Light Collector	Collector	1.01
Lakeside	I-8 BUSINESS / MAIN	.31 MILES SOUTH OF KAY JAY / MOBILE HOME PARK ENTRANCE	LOS COCHES/CM CA	Light Collector	Collector	0.81
Lakeside	JULIAN	CACTUS	LOS COCHES/MAINE	Light Collector	Town Collector	0.18
Lakeside	JULIAN	PINO	LAKEVIEW	Light Collector	Town Collector	0.16
Lakeside	LAKE JENNINGS PA	EL MONTE	BASS	Light Collector	Collector	1.00
Lakeside	LAKE JENNINGS PA	BASS	PINKARD	Light Collector	Collector	1.74
Lakeside	LAKE JENNINGS PA	PINKARD	HARRITT	Light Collector	Collector	0.20
Lakeside	LAKE JENNINGS PA	RAMP I-8 WB	RAMP I-8 WB	Light Collector	Collector	0.06
Lakeside	LAKESIDE	RIVERSIDE	CHANNEL	Town Collector	Collector	0.42
Lakeside	LOS COCHES	JULIAN	DEL SOL	Town Collector	Collector	0.94
Lakeside	LOS COCHES	DEL SOL	LOS COCHES CT	Town Collector	Collector	1.01
Lakeside	LOS COCHES	LOS COCHES CT	BOWER	Town Collector	Collector	0.76
Lakeside	MAPLEVIEW	CHANNEL	SR-67	Light Collector	Collector	0.42
Lakeside	MAPLEVIEW	MAINE	VINE	Town Collector	Prime Arterial	0.11
Lakeside	OLDE 80	RIDGE HILL	PECAN PARK	Light Collector		0.07

CPA	Name	From Cross Street	To Cross Street	Existing Classification	Required Classification	Additional Lane Miles Required
Lakeside	OLDE 80	PECAN PARK / SIERRA ALTA	PECAN PARK	Light Collector	Collector	0.61
Lakeside	OLDE 80	PECAN PARK	BOND	Light Collector	Collector	0.30
Lakeside	PEPPER	02ND/WINTER GARD	PEERLESS	Light Collector	Town Collector	0.25
Lakeside	RIVERFORD	EL NOPAL	RIVERSIDE/MAST	Light Collector	Collector	0.16
Lakeside	RIVERFORD	RIVERSIDE/MAST	WOODSIDE(N)	Town Collector	Major	0.63
Lakeside	RIVERFORD	WOODSIDE(N)	RAMP SR-67 SB	Light Collector	Collector	0.08
Lakeside	RIVERFORD	RAMP SR-67 SB	WOODSIDE SOUTH	Light Collector	Collector	0.18
Lakeside	RIVERSIDE	RIVERFORD	PALM ROW	Town Collector	Collector	0.56
Lakeside	RIVERSIDE	PALM ROW	VISTA CAMINO	Town Collector	Collector	0.42
Lakeside	RIVERSIDE	VISTA CAMINO	NEW BEDFORD	Town Collector	Collector	0.21
Lakeside	SIERRA ALTA	RAMP I-8 EB	OLDE 80	Light Collector	Collector	0.07
Lakeside	SIERRA ALTA	LAKE JENNINGS PA	RAMP I-8 EB	Light Collector	Collector	0.06
Lakeside	VALLE VISTA	VISTA CAMINO	PAGOSA	Light Collector	Town Collector	0.38
Lakeside	VALLE VISTA	PAGOSA	RIVERSIDE	Light Collector	Town Collector	0.41
Lakeside	WILLOW	SR-67	MORENO	Light Collector	Town Collector	0.25
Lakeside	WILLOW	MORENO	FILLBROOK	Light Collector	Town Collector	0.29
Lakeside	WILLOW	FILLBROOK	WILDCAT CANYON	Light Collector	Town Collector	0.36
Lakeside	WOODSIDE	NB OFF RAMP	RIVERFORD	Light Collector	Collector	0.13
Lakeside	WOODSIDE	MARILLA	RIVERVIEW	Light Collector	Collector	0.42
Lakeside	WOODSIDE	RIVERVIEW	WINTER GARDENS	Light Collector	Town Collector	0.35
North County Metro	17TH	LENDEE	SAN PASQUAL VALL	Light Collector	Collector	0.44
North County Metro	BUENA CREEK / SOUTH SANTA FE	SOUTH SANTA FE	SYCAMORE	Light Collector	Collector	0.04
North County Metro	BUENA CREEK	SYCAMORE	HARTWRIGHT	Light Collector	Collector	0.06
North County Metro	BUENA CREEK	HARTWRIGHT	HIDDEN OAK	Light Collector	Collector	1.40
North County Metro	BUENA CREEK	HIDDEN OAK	LONE OAK	Light Collector	Collector	0.33
North County Metro	BUENA CREEK	LONE OAK	MONTE VISTA	Light Collector	Collector	0.50
North County Metro	BUENA CREEK	MONTE VISTA	SUGARBUSH	Light Collector	Collector	1.21
North County Metro	BUENA CREEK	SUGARBUSH	HOLLYBERRY	Light Collector	Collector	0.17
North County Metro	BUENA CREEK	HOLLYBERRY	FREDAS HILL	Light Collector	Town Collector	0.28
North County Metro	BUENA CREEK	FREDAS HILL	BLUE BIRD CANYON	Light Collector	Town Collector	0.50
North County Metro	BUENA CREEK	BLUE BIRD CANYON	TAMARA	Light Collector	Town Collector	0.43
North County Metro	CAMINO DEL ARROYO	CAMINO LINDA DRIVE	RANCHO SANTA FE	Light Collector	Town Collector	0.06

CPA	Name	From Cross Street	To Cross Street	Existing Classification	Required Classification	Additional Lane Miles Required
North County Metro	CHAMPAGNE	WELK VIEW	LAWRENCE WELK	Light Collector	Collector	0.74
North County Metro	CHAMPAGNE	LAWRENCE	MOUNTAIN MEADOW	Light Collector	Collector	3.62
North County Metro	DEER SPRINGS	MULBERRY	MARILYN	Light Collector	Collector	0.33
North County Metro	DEER SPRINGS	SARVER	MESA ROCK	Light Collector	Prime Arterial	5.79
North County Metro	DEER SPRINGS	MESA ROCK	MOUNTAIN MEADOW	Light Collector	Prime Arterial	0.21
North County Metro	DEL DIOS	COUNTRY CLUB	ELM	Light Collector	Collector	0.74
North County Metro	HARMONY GROVE	WILGEN	CPA BOUNDARY	Light Collector	Town Collector	1.66
North County Metro	HARMONY GROVE	COUNTRY CLUB	WILGEN	Light Collector	Town Collector	0.39
North County Metro	HOLLYBERRY	BUENA CREEK	SALEM	Light Collector	Collector	0.48
North County Metro	N CENTRE CITY	MOUNTAIN MEADOW	JESMOND DENE	Light Collector	Town Collector	0.58
North County Metro	N CENTRE CITY	JESMOND DENE	MESA ROCK	Light Collector	Collector	2.51
North County Metro	N CENTRE CITY	MESA ROCK	IVY DELL	Light Collector	Collector	0.71
North County Metro	N CENTRE CITY	IVY DELL	CENTRE CITY	Light Collector	Collector	0.58
North County Metro	ROCK SPRING	.005 WEST OF BENNETT / ROCK SPRING INTERSECTION	BENNETT	Light Collector	Collector	0.01
North County Metro	ROCK SPRING	MONTIEL	SEVEN OAKES	Light Collector	Town Collector	0.05
North County Metro	SALEM	HOLLYBERRY	EMMA	Light Collector	Collector	1.00
North County Metro	SOUTH SANTA FE	WOODLAND	ROBELINI	Major	Prime Arterial	0.56
North County Metro	SYCAMORE	BUENA CREEK	ROBELINI	Major	Prime Arterial	0.50
North County Metro	SYCAMORE	RAMP SR-78 WB	RAMP SR-78 EB	Prime Arterial	8L Prime	0.09
North County Metro	VALLEY CENTER	NORTH COUNTY CPA BOUNDARY	VALLEY CENTER CPA BOUNDARY	Major	Prime Arterial	0.09
North County Metro	VIA RANCHO	VISTA DE LA CRESTA	VIA LOMA VISTA	Light Collector	Town Collector	0.57
North County Metro	VIA RANCHO	VIA LOMA VISTA	FELICITA	Light Collector	Collector	1.49
North County Metro	SAN PASQUAL ROAD	VIENTO VALLE	VIA SOL	Light Collector	Collector	2.15
Otay	AIRWAY	FARADAY	ENRICO FERMI	Light Collector	Collector	0.48
Otay	ALTA	DONOVAN STATE PRISON	CALZADA DE LA FUENTE	Light Collector	Collector	0.95
Otay	ALTA	PASEO DE LA FUENTE	CALZADA DE LA FUENTE	Light Collector	Prime Arterial	0.93
Otay	ALTA	OTAY MESA	PASEO DE LA FUENTE	Light Collector	Prime Arterial	0.83
Otay	ENRICO FERMI	OTAY MESA	RAMP SR-11 WB	Major	Prime Arterial	0.40

CPA	Name	From Cross Street	To Cross Street	Existing Classification	Required Classification	Additional Lane Miles Required
Otay	ENRICO FERMI	RAMP SR-11 WB	RAMP SR-11 EB	Major	Prime Arterial	0.18
Otay	ENRICO FERMI	RAMP SR-11 EB	AIRWAY	Major	Prime Arterial	0.65
Otay	ENRICO FERMI	AIRWAY	SIEMPRE VIVA	Light Collector	Prime Arterial	0.90
Otay	HARVEST	LONESTAR	OTAY MESA	Light Collector	Prime Arterial	2.93
Otay	LONESTAR	PIPER RANCH	HARVEST	Light Collector	Prime Arterial	2.31
Otay	OTAY LAKES	WUESTE	LOWER OTAY LAKE	Light Collector	Prime Arterial	1.21
Otay	OTAY LAKES	LOWER OTAY LAKE	CAMPO RD	Light Collector	Town Collector	3.29
Otay	OTAY MESA	PASEO DE LAS AMERICA	FARADAY	Major	Prime Arterial	1.58
Otay	OTAY MESA	FARADAY	ENRICO FERMI	Major	Prime Arterial	0.92
Otay	OTAY MESA	ENRICO FERMI	ALTA	Major	Prime Arterial	5.14
Pala-Pauma	VALLEY CENTER	PALA/SR-76	GOLSH	Town Collector	Collector	1.76
Pendleton-De Luz	BASILONE	RAMP I-5 SB	RAMP I-5 NB	Light Collector	Collector	0.19
Pendleton-De Luz	COAST	SAN DIEGO / I5 RAMP	MONTEREY	Light Collector	Collector	0.13
Pendleton-De Luz	SAN DIEGO / I5 RAMP	RAMP	RAMP	Light Collector	Prime Arterial	0.13
Pendleton-De Luz	SAN DIEGO / I5 RAMP	RAMP	RAMP	Light Collector	Prime Arterial	0.65
Pendleton-De Luz	VANDEGRIFT	WIRE MTN/MAIN GA	RAMP I-5 NB	Major	8L Prime	0.93
Pepper Drive-Bosto	BRADLEY	GRAVES	STONE EDGE CIRC	Light Collector	Collector	0.40
Pepper Drive-Bosto	BRADLEY	STONE EDGE	SAM HILL	Light Collector	Collector	0.23
Pepper Drive-Bosto	BRADLEY	SAM HILL	BERRY DALE	Light Collector	Collector	0.21
Pepper Drive-Bosto	BRADLEY	SUMMER PLACE	01ST	Light Collector	Town Collector	0.12
Pepper Drive-Bosto	GRAVES	PEPPER	GRAVES CT	Light Collector	Town Collector	0.14
Pepper Drive-Bosto	GREENFIELD	VERNON	GRAVES	Light Collector	Collector	0.86
Pepper Drive-Bosto	GREENFIELD	DENVER	DIAMOND	Light Collector	Collector	0.27
Pepper Drive-Bosto	GREENFIELD	DIAMOND	01ST	Light Collector	Collector	0.27
Pepper Drive-Bosto	GREENFIELD	01ST	ORO	Light Collector	Town Collector	0.26
Pepper Drive-Bosto	GREENFIELD	ORO	02ND	Light Collector	Town Collector	0.21
Pepper Drive-Bosto	MAGNOLIA	BRADLEY	CYPRESS	Light Collector	Collector	0.31
Pepper Drive-Bosto	MAGNOLIA	CYPRESS	VERNON	Light Collector	Collector	0.63
Pepper Drive-Bosto	PEERLESS	LILY	GREENFIELD	Light Collector	Town Collector	0.13
Pepper Drive-Bosto	PEPPER	TETON	VULCAN	Light Collector	Town Collector	0.05
Pepper Drive-Bosto	PEPPER	GARYWOOD/MARLIND	BATES	Light Collector	Town Collector	0.14
Pepper Drive-Bosto	PEPPER	BATES	MOLLISON	Light Collector	Collector	0.30
Pepper Drive-Bosto	PEPPER	MOLLISON	PEPPER VILLA	Light Collector	Town Collector	0.07

CPA	Name	From Cross Street	To Cross Street	Existing Classification	Required Classification	Additional Lane Miles Required
Pepper Drive-Bosto	PEPPER	PEPPER VILLA	01ST	Light Collector	Town Collector	0.25
Pepper Drive-Bosto	PEPPER	SOMER LANE	02ND/WINTER GARD	Light Collector	Town Collector	0.24
Rainbow	OLD 395	RAINBOW VALLEY	MISSION	Light Collector	Collector	1.71
Rainbow	OLD 395	RAINBOW GLEN	RAINBOW VALLEY	Light Collector	Collector	0.64
Rainbow	OLD 395	05TH	RAINBOW GLEN	Light Collector	Collector	1.14
Rainbow	OLD 395	02ND	05TH	Light Collector	Town Collector	0.29
Rainbow	RAINBOW VALLEY W	RAMP	OLD 395	Light Collector	Town Collector	0.04
Ramona	MONTECITO	DAVIS	RAMONA	Light Collector	Town Collector	0.39
Ramona	OLIVE	MAPLE	PINE	Light Collector	Collector	0.50
Ramona	OLIVE	PINE	ELM	Light Collector	Town Collector	0.29
Ramona	RAMONA	RAYMOND	MAIN	Light Collector	Town Collector	0.14
Ramona	RAMONA	ROWLEY	HANSON LANE	Light Collector	Town Collector	0.07
Ramona	SAN VICENTE	H STREET	BARGER	Town Collector	Collector	0.94
Ramona	SAN VICENTE	HANSON	JAY BIRD	Town Collector	Collector	0.51
Ramona	SAN VICENTE	JAY BIRD	CREELMAN	Town Collector	Collector	0.49
Ramona	SAN VICENTE	KEYES	DYE	Light Collector	Collector	0.14
Ramona	SAN VICENTE	DYE	BUNNIE KING	Light Collector	Collector	0.58
Ramona	SAN VICENTE	BUNNIE KING	CHUCKWAGON	Light Collector	Collector	2.57
Ramona	SAN VICENTE	CHUCKWAGON	WILDCAT CANYON	Light Collector	Collector	0.41
Ramona	WILDCAT CANYON	SAN VICENTE	LITTLE KLONDIKE	Light Collector	Collector	0.75
Ramona	WILDCAT CANYON	LITTLE KLONDIKE	SAN VINCENTE OAK	Light Collector	Town Collector	2.19
San Dieguito	CAM DEL NORTE	4S RANCH PARKWAY	RAMP	Light Collector	Prime Arterial	1.24
San Dieguito	DEL DIOS	RANCHO DEL RIO	LUNA DE MIEL	Light Collector	Collector	0.92
San Dieguito	EL APAJO	VIA DE SANTA FE	SAN DIEGUITO	Light Collector	Town Collector	0.57
San Dieguito	ELFIN FOREST	ELFIN OAKS	HARMONY GROVE	Light Collector	Collector	2.74
San Dieguito	HARMONY GROVE	CRESTWIND/WILGEN	QUESTHAVEN	Light Collector	Town Collector	1.16
San Dieguito	BAJADA	EL MIRLO	LA NORIA	Light Collector	Collector	0.57
San Dieguito	PASEO DELICIAS	LA FREMONTIA	VIA DE LA VALLE	Light Collector	Major	0.10
San Dieguito	RANCHO BERNARDO	CAM SAN BERNARDO	ALVA / CPA BOUNDARY	Major	Prime Arterial	0.57
San Dieguito	RANCHO SANTA FE	CPA BOUNDARY	EL MIRLO	Light Collector	Collector	0.33
San Dieguito	CAMINO DEL NORTE	4S RANCH PARKWAY	BLACK MOUNTAIN	Light Collector	Collector	0.51
San Dieguito	SAN DIEGUITO	WINLAND HILLS	CAM SANTA FE	Light Collector	Town Collector	0.74
San Dieguito	SAN DIEGUITO	RANCHO DIEGUENO	WINDLAND HILLS	Light Collector	Collector	0.66
San Dieguito	SAN DIEGUITO	CALLE DEL NIDO	RANCHO DIEGUENO	Light Collector	Town Collector	0.53

CPA	Name	From Cross Street	To Cross Street	Existing Classification	Required Classification	Additional Lane Miles Required
San Dieguito	SAN DIEGUITO	EL APAJO	CALLE DEL NIDO	Light Collector	Town Collector	0.08
San Dieguito	SAN DIEGUITO	VIA DOS VALLES	EL APAJO	Light Collector	Collector	1.48
San Dieguito	SAN DIEGUITO	SAN DIEGO CL / CPA BOUNDARY	VIA DOS VALLES	Light Collector	Collector	1.70
San Dieguito	SAN ELIJO RD	FALL VIEW	HIDDEN CANYON	Major	Prime Arterial	0.50
San Dieguito	VIA DE LA VALLE	PASEO DELICIAS	LAS COLINAS	Light Collector	Collector	0.05
San Dieguito	VIA DE LA VALLE	LAS COLINAS	VIA DE SANTA FE	Light Collector	Collector	1.12
San Dieguito	VIA DE LA VALLE	VIA DE SANTA FE	LA GRACIA	Light Collector	Collector	0.79
San Dieguito	VIA DE LA VALLE	LA GRACIA	CALZADA DEL BOSQ	Light Collector	Town Collector	0.49
San Dieguito	VIA DE SANTA FE	VIA DE LA VALLE	CALZADA DEL BOSQ	Light Collector	Town Collector	0.65
San Dieguito	VIA DE SANTA FE	CALZADA DEL BOSQ	EL APAJO	Light Collector	Collector	0.83
Spring Valley	APPLE	GRAND AVE	RAMONA	Light Collector	Town Collector	0.15
Spring Valley	APPLE	RAMONA	MAYA	Light Collector	Town Collector	0.26
Spring Valley	JAMACHA ROAD	RAMP SR-125 HOV	RAMP SR-125 NB	Major	Prime Arterial	0.18
Spring Valley	JAMACHA ROAD	RAMP SR-125 NB	SWEETWATER	Major	Prime Arterial	0.15
Spring Valley	KENWOOD	DALE	RAMP SR-94 EB	Light Collector	Town Collector	0.03
Spring Valley	PARADISE VALLEY	ELKELTON	RAMP SR-125 SB	Major	Prime Arterial	0.15
Spring Valley	PARADISE VALLEY	RAMP SR-125 SB	RAMP SR-125 NB	Major	Prime Arterial	0.29
Spring Valley	PARADISE VALLEY	RAMP SR-125 NB	SWEETWATER-NEW	Major	Prime Arterial	0.07
Spring Valley	TROY	SWEET WATER	CENTRAL	Light Collector	Collector	0.49
Spring Valley	TROY	CENTRAL	BANCROFT	Light Collector	Collector	0.43
Sweetwater	BRIARWOOD	RAMP SR-54 EB	ROBINWOOD	Light Collector	Collector	0.10
Sweetwater	SWEETWATER	VALLEY	WILLOW	Light Collector	Town Collector	0.32
Sweetwater	SWEETWATER	BRIARWOOD	BONITA WOODS	Light Collector	Collector	0.81
Valle De Oro	BANCROFT	CAMPO	RAMP SR-94 WB	Light Collector	Town Collector	0.04
Valle De Oro	FUERTE	GROSSMONT SUMMIT	GROSSMONT	Light Collector	Town Collector	0.02
Valle De Oro	FUERTE	GROSSMONT	SIERRA VISTA	Light Collector	Town Collector	0.20
Valle De Oro	FUERTE	SIERRA VISTA	SUMMIT	Light Collector	Town Collector	0.31
Valle De Oro	FUERTE	SUMMIT	PANDORA	Light Collector	Town Collector	0.31
Valle De Oro	FUERTE	PANDORA	LEMON	Light Collector	Town Collector	0.10
Valle De Oro	HILLSDALE	CHASE	WIND RIVER	Light Collector	Town Collector	0.16
Valle De Oro	JAMUL	STEELE CANYON	IVANHOE RANCH	Light Collector	Collector	0.35
Valle De Oro	JAMUL	IVANHOE RANCH	COTTONWOOD SPRIN	Light Collector	Collector	0.95
Valle De Oro	JAMUL	COTTONWOOD SPRIN	TUK A WILE	Light Collector	Town Collector	1.34

CPA	Name	From Cross Street	To Cross Street	Existing Classification	Required Classification	Additional Lane Miles Required
Valle De Oro	STEELE CANYON	WILLOW GLEN	JAMUL	Light Collector	Collector	1.00
Valle De Oro	STEELE CANYON	JAMUL	OLD CALIFORNIA	Light Collector	Town Collector	0.19
Valle De Oro	WILLOW GLEN	HILLSDALE	STEELE CANYON	Light Collector	Town Collector	0.81
Valley Center	CHAMPAGNE	OLD 395	OLD CASTLE	Light Collector	Collector	0.32
Valley Center	CHAMPAGNE	OLD CASTLE	CPA BOUNDARY	Light Collector	Collector	1.93
Valley Center	COLE GRADE	VIA VALENCIA	FRUITVALE	Town Collector	Collector	1.36
Valley Center	COLE GRADE	FRUITVALE	1003 ft NORTH OF VALLEY CENTER	Town Collector	Collector	0.96
Valley Center	COLE GRADE	1003 ft NORTH OF VALLEY CENTER	VALLEY CENTER	Town Collector	Major	0.38
Valley Center	LILAC	WEST LILAC	LILAC HILL	Light Collector	Town Collector	0.26
Valley Center	LILAC	LILAC HILL	OLD CASTLE	Light Collector	Town Collector	1.27
Valley Center	LILAC	OLD CASTLE	ROBLE VERDE	Light Collector	Collector	1.27
Valley Center	LILAC	ROBLE VERDE	ANTHONY	Light Collector	Collector	2.02
Valley Center	LILAC	ANTHONY	BETSWORTH	Light Collector	Collector	2.80
Valley Center	LILAC	BETSWORTH	VALLEY CENTER	Light Collector	Collector	0.58
Valley Center	MIRAR DE VALLE	RED IRON BARK	RANCHO VISTA	Light Collector	Town Collector	0.26
Valley Center	OLD 395	CAM DEL REY	CIRCLE R	Light Collector	Collector	1.65
Valley Center	OLD 395	CIRCLE R	GOPHER CANYON	Light Collector	Collector	0.30
Valley Center	OLD CASTLE	CHAMPAGNE	PRIVATE ROAD e/o QUEEN ANN	Light Collector	Collector	3.44
Valley Center	OLD CASTLE	PRIVATE ROAD e/o QUEEN ANN	AIRFLIGHT	Light Collector	Town Collector	2.21
Valley Center	VALLEY CENTER	VESPER	COLE GRADE	Light Collector	Collector	0.43
Valley Center	VALLEY CENTER	COLE GRADE	MILLER	Major	Prime Arterial	1.04
Valley Center	VALLEY CENTER	MILLER	CHAPARREL	Major	Prime Arterial	0.94
Valley Center	VALLEY CENTER	CHAPARREL	LILAC	Major	Prime Arterial	0.59
Valley Center	VALLEY CENTER	SUNDAY	CHARLAN	Major	Prime Arterial	0.94
Valley Center	VALLEY CENTER	CHARLAN	WOODS VALLEY	Major	Prime Arterial	0.56
Valley Center	VALLEY CENTER	WOODS VALLEY	BANBURY	Major	Prime Arterial	0.29
Valley Center	VALLEY CENTER	CPA BOUNDARY	ESCONDIDO CL	Major	Prime Arterial	2.09

Appendix C
State Improvement Facilities

CPA	Name	From	To	Lanes	Additional Lane Miles Required
Bonsall	MISSION	CPA BOUNDARY	.045 MILES WEST OF MISSION / PALA	2	13.66
Bonsall	MISSION	.045 WEST OF MISSION/PALA	.045 EAST OF MISSION / PALA	4	0.36
Bonsall	PALA	.045 EAST OF MISSION / PALA	CPA BOUNDARY	2	2.55
Central Mountain	SR-78	RAMONA CPA - WEST OF CENTRAL MOUNTAIN	RAMONA CPA - EAST OF CENTRAL MOUNTAIN	2	0.42
Fallbrook	PALA	CPA BOUNDARY	COUSER CANYON ROAD	2	12.44
Jamul-Dulzura	CAMPO	.175 Miles after CPA BOUNDARY / COUGAR CANYON ROAD	.29 Miles after CPA BOUNDARY / COUGAR CANYON ROAD	2	0.58
Jamul-Dulzura	CAMPO	2.195 Miles after CPA BOUNDARY / COUGAR CANYON ROAD	STONEY OAK ROAD	2	10.73
Lakeside	SR-67	.2 miles South of SCRIPPS POWAY PARKWAY	.8 Miles South of FOSTER TRUCK TRAIL - Lanes change from 3 to 4	2	2.23
Lakeside	SR-67	SCRIPPS POWAY PARKWAY	.2 Miles South of SCRIPPS POWAY PARKWAY	2	0.23
Lakeside	SR-67	CPA BOUNDARY	SCRIPPS POWAY PARKWAY	2	1.26
Lakeside	SR-67	VINE STREET ENTRANCE	MAPLEVIEW	3	0.92
Lakeside	SR-67	MAPLE VIEW	START OF SR. 67	4	0.07
Mountain Empire	TECATE	SR-94	HUMPHRIES ROAD	2	2.93
North County Metro	SAN PASQUAL VALLEY			2	0.16
North County Metro	SAN PASQUAL VALLEY	BEAR VALLEY	.12 AFTER OLD SAN PASQUAL ROAD	2	2.24
North County Metro	SR-78	SYCAMORE (SEGMENT ON MAP)	SMILAX / CPA BOUNDARY	2	1.52
North Mountain	JULIAN / SR - 67	CPA BOUNDARY	SR-79	2	7.92
Pala-Pauma	SR-76	RED GATE ROAD (West Side)	CALLE EL POTRERO	2	2.50
Ramona	JULIAN / SR - 67	CPA BOUNDARY	MUSSEY GRADE	2	8.90
Ramona	JULIAN / SR - 67	OLD JULIAN	RAMONA CPA - WEST OF CENTRAL MOUNTAIN	2	3.43
Ramona	JULIAN / SR - 67 / MAIN	10 TH	8TH	4	0.72
Ramona	SR-78	CPA BOUNDARY	HAVER FORD	2	3.85

1/9/2008

APPENDIX E – CONVERSION OF NON-RESIDENTIAL RATES TO COST PER SQUARE FOOT

Conversion of Nonresidential Rates to Cost per Square Foot

The cost per square foot conversion is based on the following methodology. An example is shown in the table below with an estimated cost per trip of $611. This same methodology is applied in all 23 Community Plan Areas for the applicable cost per trip in each area. The trips per acre (as described in the 2008 Update) multiplied by the cost per trip is used to determine the cost for an acre. The floor area ratio (FAR) is then applied to that acre of land to determine the building square feet. The cost per square foot is then equal to the cost for the acre of land divided by the estimated building square feet (as based on the estimated FAR). In general, except for a furniture store and storage/warehouse, each general commercial project pays at the same rate per square foot, each general industrial project pays at the same rate per square foot, each office project pays at the same rate per square foot and each school pays at the same rate per square foot.

SAMPLE CALCULATION using $611 per trip

	FAR[1]	Trips/ac	Cost/trip	Cost/ac	Bldg sf/ac	Cost/sf
Commercial						
General Commercial	0.23	360	$ 611	$ 219,960	10,019	$ 21.95
Furniture Store	0.38	85	$ -	$ 51,935	16,553	$ 3.14
Industrial						
General Industrial	0.26	150	$ 611	$ 91,650	11,326	$ 8.09
Storage/Warehouse - Warehouse	0.28	60	$ 611	$ 36,660	12,197	$ 3.01
Office						
Office	0.34	300	$ 611	$ 183,300	14,810	$ 12.38
Schools	0.1	50	$ 611	$ 30,550	4356	$ 7.01

1 FARs based on SANDAG Trip Generation Table.

General Commercial FAR = 400trips/43560 sf x1000 sf/40trips= .23

Furniture Store FAR = 100 trips/43560 sf x 1000 sf/6 trips = .38

General Industrial FAR = 90 trips/43560 sf x 1000 sf/ 8 trips = .26

Storage/Warehouse FAR = 60 trips/43560 sf x 1000/ 5 trips = .28

Office FAR = 300 tripx/43560 sf x 1000/20 trips = .34

Schools FAR = 50 trips/43560 sf x 1000/12 trips = .10

Correspondences with County Staff (re: Additional TIF Facilities)

From: Ortiz, Francisco "Nick" [Francisco.Ortiz@sdcounty.ca.gov]
Sent: Monday, June 15, 2009 8:37 AM
To: Bill Darnell; Jessica Bavos
Cc: Vicki Haskell; Hauser, Everett; Rosenberg, Daniella; Sinsay, Edwin M; Lantis, Richard; Bankston, Troy; Vidales, Rene A.; Peeva, Iliana
Subject: RE: OTAY MESA ROAD & TIF PROGRAM
Attachments: FINAL.Generic Condition.City of SD Impacts.doc

Bill & Jessica,

This is a follow-up to your questions concerning the TIF program and Otay Mesa Road.

Your first question was if the TIF was applicable to segments of Otay Mesa Road that are not specifically identified as TIF Improvement Facilities. Your e-mail message specifically inquired about the segment of Otay Mesa Road from Piper Ranch Road to Vann Centre Boulevard. Our response was that the segment of Otay Mesa Road from Piper Ranch Road to Vann Centre Boulevard could be considered an Alternative TIF facility, which is eligible for TIF funding and cumulative impacts can be mitigated via the TIF program.

Your second question was if the County's TIF program mitigates cumulative impacts to segments of Otay Mesa Road that are shared by the City and County or where one side of the road is located within the County's jurisdiction and the other side is located within the City's jurisdiction. The County TIF mitigates the cumulative impacts to the County side of the road, but alternative non-TIF mitigation would be needed for the City side of the road. The County would condition EOM projects to pay the TIF for their Otay Mesa Road cumulative impacts and to coordinate with the City to identify acceptable cumulative impact mitigation measures which is consistent with our current EOM conditioning approach

If this is a matter that you would like to further discuss, please arrange at meeting with DPW and DPLU staff being that the issues involve the TIF and significant traffic impact and mitigation measures.

Thanks,
F.Nick Ortiz
County of San Diego, Department of Public Works
Transportation Planning section
Phone: 858-694-2410
Fax: 858-694-3373
MS 0336

Current TIF Fees

Assignment of Land Uses to TIF Categories
(TIF is based on primary use of facility)

General Commercial (Retail Facilities)

Automotive	Commercial Boxing and Martial Arts Studios	Key Shop
- Body Shop, Upholstry	Commercial Dance Studios	Laundromat/Self-Serve Laundry
- Car Wash	Commercial Plant Nurseries	Lumber Stores
- Electronics,Alarm,Stereo Sales &/or Repair	Commercial Strip Malls	Medical Supply Sales
- Gas Stations	Computer Sales & Service	Metal Supply Sales
- Parts sales	Computer Sales, Leasing, or Repair	Mobile Home Sales
- Rental and/or leasing	Concert Halls	Mororcycle Sales & Repair
- Repair &/or Service	Convenience Stores	Museums
- Sales	Craft Shops	Night Clubs
- Tire Sales &/or Repair	Department Stores	Office Supplies
- Window Tinting	Dry Cleaner Shop	Paint Store
- Windshield and Glass Repair	Eating Establishments	Photography or Photo Processing Store
Appliance Sales, Installation, and/or Repair	Electronics Retail Stores	Postal, Copying, Shipping, &/or Printing Stores
Arcades	Entertainment Facilities	Rental Stores
Art Galleries & Dealers	Fast Food Restaurants	Restaurants
Bakeries (retail)	Feed Stores	Retail Eyeglass Store
Barber Shop, Beauty Salon, Nail Salon, Spa	Florist Shop	Retail Stores
Bars	Gardening Stores/Commercial Nursuries	Shopping Centers
Boat Sales and Repair	Golf Pro Shop	Tatoo Parlors
Bowling Alleys	Grocery Stores	Theaters
Carpet or Flooring Store	Gun Shops	Ticket Agencies
Chemical Sales Store	Gymnasiums & Health and Fitness Clubs	Truck Stop or Travel Center
Coffee Shops	Hardware Stores	Video or Computer Game Stores
Commercial Aviation Facilities/Terminals	Juice Bars	Weight-Loss or Nutrition Stores (retail)

Furniture Store

Antique Store
Estate Liquidators
Furniture Store
Office Furniture Supply & Installation

General Industrial

Animal Shelter/Kennel	Facility Alarm System Installation & Repair	Light Industrial Service Facilities
Armored Car Service	Film Production Studio	- Air Duct Cleaning
Assembling & Fabrication Facilities	Fuel Distribution Facilities	- Appliance Repair
Automotive Salvage	Gun Shooting Range (no on-site sales)	- Carpet Cleaning
Automotive Towing	Hazardous Waste Removal	- Carpet Insallation (no on-site sales)
Bakeries (Manufacturing w/no on-site sales)	Heavy Construction Equipment Leasing	- Computer Cable Installation
Bathroom and Kitchen Renovation (no on-site sales)	Heavy Construction Equipment Repair	- Elevator Maintenance
Bottled gas supply (acetylene, etc.)	Heavy Construction Equipment Sales	- Garage Door Repair,
Campground or Motor Home Park	Home Remodeling	- Glass Repair & Replacement
Cell Phone Towers	Laboratoires for Research & Development	- HVAC, Plumber, Electrician, Welder, etc.
Churchs, Synagogues, Mosques, or Temples	Large Truck Repair	- Industrial Equipment Supply and Repair
Community Centers or Youth Centers	Laundry Processing (no on-site sales)	- Instrumentation Calibration & Repair
Computer Server Facilities (non-commerical)	Manufacturing/Processing Facilities	- Irrigation System Installation & Repair
Construction &/or Demolitoin Companies	Medical Equipment Maintenance	- Janitors or Specialized Cleaning
Distribution Centers (no on-site sales)	Mobile Phone Towers	- Landscaping Maintenance
- Food &/or Beverage	Not-for-Profit Recreation Centers (e.g. YMCA)	- Limousine Service
- Catalogue Sales	Parking Garages (non-residential)	- Machine Shop
- Other Non-Retail Distribution Centers	Photographic Processing Lab (no on-site sales)	- Pest Control
- Florist Distributor	Pool Installation	- Security Guard Service
- Freight, Packages, and Mail	Reprographic Facilities	
- Fuel (gasoline, propane, natural gas)	Sandblasting Facility	
- Chemicals	Telephone Call Centers	
Diving Savlage Facilities (no on-site sales)	Telephone Service Facilities	
Document Destruction	Trucking Companies	
Drilling Companies	Video Production Facilities	
Furniture Repair		

Storage, Warehousing, Wineries, Non-residential Agricultural

Agricultural Packing Facilities	Moving Companies
Aircraft Hangars & General Aviation Facilities	Storage Warehouses
Cemetaries	Wholesale Nursuries
Document Storage Facilities	Wine Tasting Rooms
Horse Stables	Wineries
Mini-Storage Warehouses	

Offices

Accountant Offices	Drug Rehabilitation Offices	Optomitrist Office
Advertising Agencies	Engineering/Architectural Design Offices	Photography
Attorney Offices	Financial Planner Offices	Real Estate Offices
Bail Bond Office	Hospitals	Real Estate Offices
Banks and Savings & Loans	Insurance Sales and Service	Tax Preparation Services
Chiropractic Clinics	Mapping Services	Travel Agencies
Computer Software Development	Medical Clinics	Veterninary Clinics
Counesling Offices	Medical Offices	
Currency Exchange	Mortuaries	
Dental & Othodonic Clinics	Offices for Reserarch & Development	

Schools, and Government/Institutional

Academic Testing Centers	Language Schools	Traffic Schools
Acting Schools	Library	Tutoring Centers
Day Care/Pre-School	Police Station	
Elementary, Middle, and High Schools	Post Office	
Fire Station	Prisons & Jails	
Kindergartens	Technical Schools	

Select Industrial

Borrow Pit Operations
Concrete & Asphalt Production (Batch Plants)
Landfills
Mining Operations
Power Generation Plants
Quarry Operations

APPENDIX D

- Existing - Arterial Analysis
- Existing - Synchro Analysis
- Existing - ILV Analysis
- Existing – Queuing Summaries

Existing - Arterial Analysis

Arterial Level of Service: EB Otay Mesa Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Heritage Road	II	45	28.4	16.2	44.6	0.27	22.0	C
Cactus Rd	II	45	44.7	7.7	52.4	0.51	34.9	B
Brittania Blvd	II	45	45.5	15.2	60.7	0.52	30.7	B
La Media	II	45	83.0	6.7	89.7	1.04	41.7	A
Piper Ranch Rd	II	45	44.3	0.8	45.1	0.50	40.2	A
SR125 SB	II	45	29.4	1.4	30.8	0.30	34.7	B
SR125 NB Ramp	II	45	13.4	0.4	13.8	0.12	32.1	B
Sanyo Ave	II	45	35.1	2.2	37.3	0.37	35.3	A
Enrico Fermi Dr	II	45	62.8	8.8	71.6	0.78	39.4	A
Total	II		386.6	59.4	446.0	4.41	35.6	A

Arterial Level of Service: WB Otay Mesa Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Enrico Fermi Dr	II	45	43.2	3.1	46.3	0.49	38.2	A
Sanyo Ave	II	45	62.8	6.6	69.4	0.78	40.7	A
SR125 NB Ramp	II	45	35.1	0.5	35.6	0.37	37.0	A
SR125 SB	II	45	13.4	4.4	17.8	0.12	24.9	C
Piper Ranch Rd	II	45	29.4	10.2	39.6	0.30	27.0	C
La Media	II	45	44.3	5.7	50.0	0.50	36.3	A
Brittania Blvd	II	45	83.0	3.6	86.6	1.04	43.2	A
Cactus Rd	II	45	45.5	11.4	56.9	0.52	32.7	B
Heritage Road	II	45	44.7	9.8	54.5	0.51	33.5	B
Total	II		401.4	55.3	456.7	4.63	36.5	A

Arterial Level of Service: EB Otay Mesa Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Heritage Road	II	45	28.4	20.6	49.0	0.27	20.1	D
Cactus Rd	II	45	44.7	14.8	59.5	0.51	30.7	B
Brittania Blvd	II	45	45.5	9.8	55.3	0.52	33.7	B
La Media	II	45	83.0	9.6	92.6	1.04	40.4	A
Piper Ranch Rd	II	45	44.3	2.2	46.5	0.50	39.0	A
SR125 SB	II	45	29.4	1.1	30.5	0.30	35.1	A
SR125 NB Ramp	II	45	13.4	0.1	13.5	0.12	32.8	B
Sanyo Ave	II	45	35.1	3.9	39.0	0.37	33.8	B
Enrico Fermi Dr	II	45	62.8	1.9	64.7	0.78	43.6	A
Total	II		386.6	64.0	450.6	4.41	35.2	A

Arterial Level of Service: WB Otay Mesa Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Enrico Fermi Dr	II	45	43.2	4.1	47.3	0.49	37.4	A
Sanyo Ave	II	45	62.8	5.1	67.9	0.78	41.6	A
SR125 NB Ramp	II	45	35.1	2.3	37.4	0.37	35.2	A
SR125 SB	II	45	13.4	1.5	14.9	0.12	29.7	B
Piper Ranch Rd	II	45	29.4	10.9	40.3	0.30	26.5	C
La Media	II	45	44.3	11.9	56.2	0.50	32.3	B
Brittania Blvd	II	45	83.0	10.1	93.1	1.04	40.1	A
Cactus Rd	II	45	45.5	15.7	61.2	0.52	30.4	B
Heritage Road	II	45	44.7	24.1	68.8	0.51	26.6	C
Total	II		401.4	85.7	487.1	4.63	34.2	B

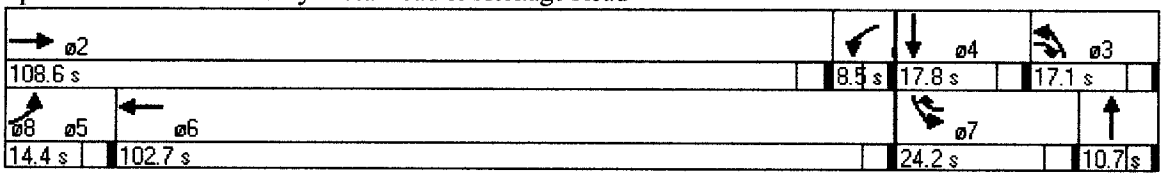
Existing - Synchro Analysis

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	1.00	1.00	1.00	1.00	1.00	0.88
Frt			0.850			0.850		0.895				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	4803	1583	3433	4803	1583	1770	1667	0	1770	1863	2787
Flt Permitted	0.950			0.950			0.950			0.000		
Satd. Flow (perm)	3433	4803	1583	3433	4803	1583	1770	1667	0	0	1863	2787
Satd. Flow (RTOR)			228			117		54				63
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	106	2033	187	31	1019	96	63	27	63	208	51	52
Adj. Flow (vph)	129	2479	228	38	1243	117	77	33	77	254	62	63
Lane Group Flow (vph)	129	2479	228	38	1243	117	77	110	0	254	62	63
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot			pm+pt		Perm
Protected Phases	5	2	3	1	6	7	3	8		7	4	
Permitted Phases			2			6				4		4
Total Split (s)	14.4	108.6	17.1	8.5	102.7	24.2	17.1	10.7	0.0	24.2	17.8	17.8
Act Effct Green (s)	10.0	106.3	126.5	4.5	99.1	123.3	16.2	6.7		20.2	10.7	10.7
Actuated g/C Ratio	0.07	0.70	0.83	0.03	0.65	0.81	0.11	0.04		0.13	0.07	0.07
v/c Ratio	0.57	0.74	0.17	0.37	0.40	0.09	0.41	0.88		1.08	0.47	0.25
Control Delay	79.2	16.2	0.6	71.6	9.8	0.8	71.6	89.8		141.5	79.2	16.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	79.2	16.2	0.6	71.6	9.8	0.8	71.6	89.8		141.5	79.2	16.6
LOS	E	B	A	E	A	A	E	F		F	E	B
Approach Delay		17.8			10.7			82.3			110.5	
Approach LOS		B			B			F			F	

Intersection Summary

Cycle Length: 152
Actuated Cycle Length: 152
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green, Master Intersection
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.08
Intersection Signal Delay: 25.6 — Intersection LOS: C
Intersection Capacity Utilization 70.2% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 1: Otay Mesa Road & Heritage Road

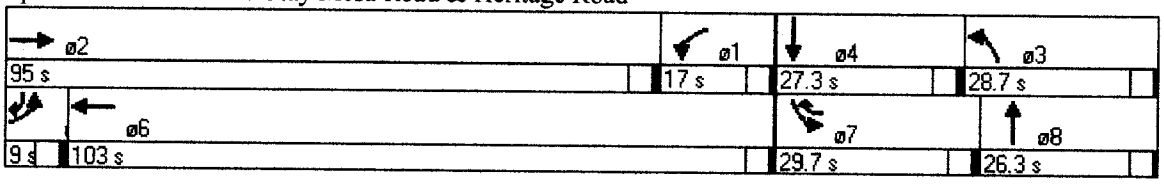


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	1.00	1.00	1.00	1.00	1.00	0.88
Frt			0.850			0.850		0.942				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	4803	1583	3433	4803	1583	1770	1755	0	1770	1863	2787
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	4803	1583	3433	4803	1583	1770	1755	0	1770	1863	2787
Satd. Flow (RTOR)			94			349		15				55
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	127	1239	88	33	2082	328	214	78	49	229	45	247
Adj. Flow (vph)	135	1318	94	35	2215	349	228	83	52	244	48	263
Lane Group Flow (vph)	135	1318	94	35	2215	349	228	135	0	244	48	263
Turn Type	Prot		Perm	Prot		pm+ov	Prot			Prot		pm+ov
Protected Phases	5	2		1	6	7	3	8		7	4	5
Permitted Phases			2			6						4
Total Split (s)	9.0	95.0	95.0	17.0	103.0	29.7	28.7	26.3	0.0	29.7	27.3	9.0
Act Effct Green (s)	10.9	100.5	100.5	11.6	99.2	128.2	31.8	16.9		25.0	10.0	21.0
Actuated g/C Ratio	0.06	0.60	0.60	0.07	0.59	0.76	0.19	0.10		0.15	0.06	0.12
v/c Ratio	0.61	0.46	0.10	0.15	0.78	0.27	0.68	0.71		0.92	0.43	0.66
Control Delay	85.8	20.6	3.3	62.1	24.1	3.1	74.0	84.5		108.6	87.2	42.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	85.8	20.6	3.3	62.1	24.1	3.1	74.0	84.5		108.6	87.2	42.6
LOS	F	C	A	E	C	A	E	F		F	F	D
Approach Delay		25.3			21.8			77.9			75.5	
Approach LOS		C			C			E			E	

Intersection Summary

Cycle Length: 168
Actuated Cycle Length: 168
Offset: 5 (3%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 32.8 — Intersection LOS: C
Intersection Capacity Utilization 77.0% — ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 1: Otay Mesa Road & Heritage Road

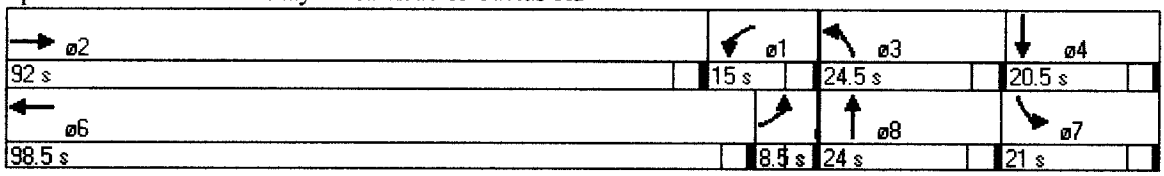


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.990			0.999				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4772	0	1770	4799	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	4772	0	1770	4799	0	1770	1863	1583	1770	1863	1583
Satd. Flow (RTOR)		12			1				219			162
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	4	2205	154	57	1098	6	76	0	69	1	0	1
Adj. Flow (vph)	5	2722	190	70	1356	7	94	0	85	1	0	1
Lane Group Flow (vph)	5	2912	0	70	1363	0	94	0	85	1	0	1
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases									8			4
Total Split (s)	8.5	92.0	0.0	15.0	98.5	0.0	24.5	24.0	24.0	21.0	20.5	20.5
Act Effct Green (s)	13.3	114.2		10.1	119.2		13.7		11.2	8.6		6.0
Actuated g/C Ratio	0.09	0.75		0.07	0.78		0.09		0.07	0.06		0.04
v/c Ratio	0.03	0.81		0.59	0.36		0.59		0.27	0.01		0.00
Control Delay	48.5	7.7		78.6	11.4		80.6		2.0	64.0		0.0
Queue Delay	0.0	0.0		0.0	0.0		0.0		0.0	0.0		0.0
Total Delay	48.5	7.7		78.6	11.4		80.6		2.0	64.0		0.0
LOS	D	A		E	B		F		A	E		A
Approach Delay		7.8			14.7							
Approach LOS		A			B							

Intersection Summary

Cycle Length: 152
Actuated Cycle Length: 152
Offset: 42 (28%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 11.4 — Intersection LOS: B
Intersection Capacity Utilization 64.9% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 2: Otay Mesa Road & Cactus Rd

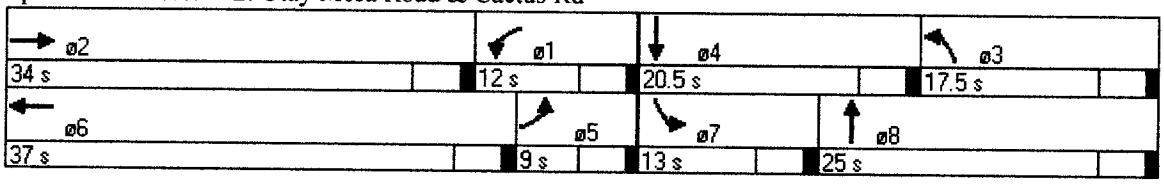


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.987			0.999				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4764	0	1770	4800	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	4764	0	1770	4800	0	1770	1863	1583	1770	1863	1583
Satd. Flow (RTOR)		21			1				138			4
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	2	1416	137	81	2282	13	188	1	130	4	1	4
Adj. Flow (vph)	2	1506	146	86	2428	14	200	1	138	4	1	4
Lane Group Flow (vph)	2	1652	0	86	2442	0	200	1	138	4	1	4
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases									8			4
Total Split (s)	9.0	34.0	0.0	12.0	37.0	0.0	17.5	25.0	25.0	13.0	20.5	20.5
Act Effct Green (s)	5.0	48.3		7.7	56.1		15.9	15.9	15.9	6.2	6.2	6.2
Actuated g/C Ratio	0.06	0.58		0.09	0.67		0.19	0.19	0.19	0.07	0.07	0.07
v/c Ratio	0.02	0.60		0.53	0.76		0.60	0.00	0.34	0.03	0.01	0.03
Control Delay	31.5	14.8		47.2	15.7		37.8	24.0	7.2	36.5	36.0	24.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.5	14.8		47.2	15.7		37.8	24.0	7.2	36.5	36.0	24.5
LOS	C	B		D	B		D	C	A	D	D	C
Approach Delay		14.8			16.8			25.3			31.1	
Approach LOS		B			B			C			C	

Intersection Summary

Cycle Length: 84
Actuated Cycle Length: 84
Offset: 33 (39%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.76
Intersection Signal Delay: 16.7 — Intersection LOS: B
Intersection Capacity Utilization 74.8% — ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 2: Otay Mesa Road & Cactus Rd

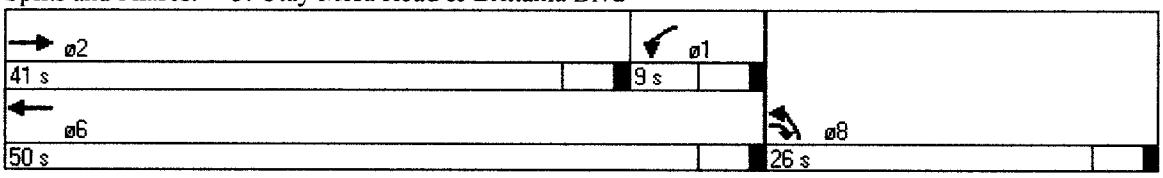


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.91	1.00	1.00	0.91	0.97	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	4803	1583	1770	4803	3433	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	4803	1583	1770	4803	3433	1583
Satd. Flow (RTOR)		488				61
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	1349	953	34	382	771	50
Adj. Flow (vph)	1645	1162	41	466	940	61
Lane Group Flow (vph)	1645	1162	41	466	940	61
Turn Type		pm+ov	Prot			Perm
Protected Phases	2	8	1	6	8	
Permitted Phases		2				8
Total Split (s)	41.0	26.0	9.0	50.0	26.0	26.0
Act Effct Green (s)	40.6	68.2	5.0	46.0	22.0	22.0
Actuated g/C Ratio	0.53	0.90	0.07	0.61	0.29	0.29
v/c Ratio	0.64	0.79	0.35	0.16	0.95	0.12
Control Delay	15.2	12.9	42.4	3.6	46.2	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.2	12.9	42.4	3.6	46.2	6.7
LOS	B	B	D	A	D	A
Approach Delay	14.3			6.7	43.7	
Approach LOS	B			A	D	

Intersection Summary

Cycle Length: 76
Actuated Cycle Length: 76
Offset: 6 (8%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.95
Intersection Signal Delay: 20.2 — Intersection LOS: C
Intersection Capacity Utilization 69.0% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 3: Otay Mesa Road & Brittania Blvd

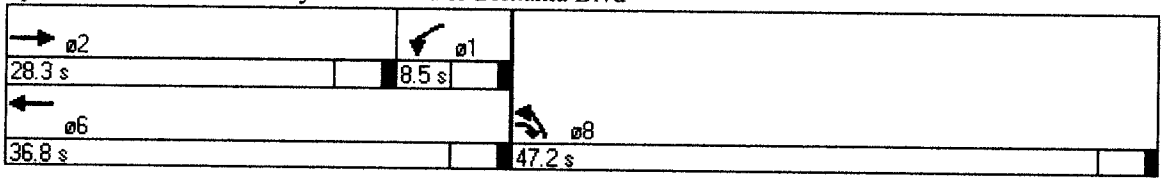


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.91	1.00	1.00	0.91	0.97	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	4803	1583	1770	4803	3433	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	4803	1583	1770	4803	3433	1583
Satd. Flow (RTOR)		712				62
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	593	965	17	1241	1208	60
Adj. Flow (vph)	611	995	18	1279	1245	62
Lane Group Flow (vph)	611	995	18	1279	1245	62
Turn Type		pm+ov	Prot			Perm
Protected Phases	2	8	1	6	8	
Permitted Phases		2				8
Total Split (s)	28.3	47.2	8.5	36.8	47.2	47.2
Act Effct Green (s)	33.5	79.0	4.5	36.9	39.1	39.1
Actuated g/C Ratio	0.40	0.94	0.05	0.44	0.47	0.47
v/c Ratio	0.32	0.65	0.19	0.61	0.78	0.08
Control Delay	9.8	11.1	28.8	10.1	22.5	3.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.8	11.1	28.8	10.1	22.5	3.2
LOS	A	B	C	B	C	A
Approach Delay	10.6			10.4	21.5	
Approach LOS	B			B	C	

Intersection Summary

Cycle Length: 84
Actuated Cycle Length: 84
Offset: 74 (88%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 13.9 — Intersection LOS: B
Intersection Capacity Utilization 69.8% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 3: Otay Mesa Road & Brittania Blvd

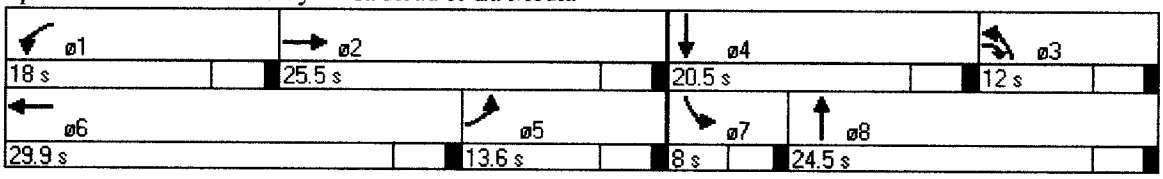


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.91	1.00	1.00	1.00	0.97	1.00	1.00
Frt			0.850		0.985			0.905			0.935	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4803	1583	1770	4757	0	1770	1650	0	3433	1686	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	4803	1583	1770	4757	0	1770	1650	0	3433	1686	0
Satd. Flow (RTOR)			318		26			84			36	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	82	785	277	167	263	29	75	42	73	11	41	31
Adj. Flow (vph)	94	902	318	192	302	33	86	48	84	13	47	36
Lane Group Flow (vph)	94	902	318	192	335	0	86	132	0	13	83	0
Turn Type	Prot		pm+ov	Prot			Prot			Prot		
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2									
Total Split (s)	13.6	25.5	12.0	18.0	29.9	0.0	12.0	24.5	0.0	8.0	20.5	0.0
Act Effct Green (s)	8.9	29.3	38.9	12.9	35.3		9.6	20.2		4.0	8.2	
Actuated g/C Ratio	0.12	0.39	0.51	0.17	0.46		0.13	0.27		0.05	0.11	
v/c Ratio	0.45	0.49	0.33	0.64	0.15		0.38	0.26		0.07	0.39	
Control Delay	22.4	6.7	3.6	31.1	5.7		34.6	10.5		35.2	24.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	22.4	6.7	3.6	31.1	5.7		34.6	10.5		35.2	24.8	
LOS	C	A	A	C	A		C	B		D	C	
Approach Delay		7.1			14.9			20.0			26.2	
Approach LOS		A			B			C			C	

Intersection Summary

Cycle Length: 76
Actuated Cycle Length: 76
Offset: 29 (38%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.64
Intersection Signal Delay: 11.2 — Intersection LOS: B
Intersection Capacity Utilization 45.2% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 4: Otay Mesa Road & La Media

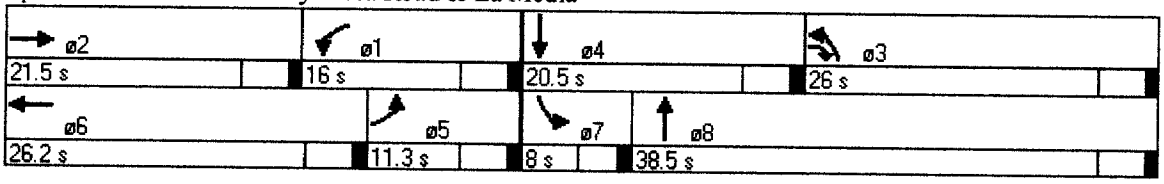


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.91	1.00	1.00	1.00	0.97	1.00	1.00
Frt			0.850		0.992			0.893			0.921	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4803	1583	1770	4779	0	1770	1636	0	3433	1669	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	4803	1583	1770	4779	0	1770	1636	0	3433	1669	0
Satd. Flow (RTOR)			298		10			123			60	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	58	310	268	118	613	35	277	45	111	38	83	93
Adj. Flow (vph)	64	344	298	131	681	39	308	50	123	42	92	103
Lane Group Flow (vph)	64	344	298	131	720	0	308	173	0	42	195	0
Turn Type	Prot		pm+ov	Prot			Prot			Prot		
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2									
Total Split (s)	11.3	21.5	26.0	16.0	26.2	0.0	26.0	38.5	0.0	8.0	20.5	0.0
Act Effct Green (s)	7.0	25.9	48.7	11.1	31.9		18.8	30.2		4.3	12.2	
Actuated g/C Ratio	0.08	0.31	0.58	0.13	0.38		0.22	0.36		0.05	0.15	
v/c Ratio	0.43	0.23	0.29	0.56	0.40		0.78	0.26		0.24	0.66	
Control Delay	43.5	9.6	1.3	33.7	11.9		44.1	6.9		42.1	33.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	43.5	9.6	1.3	33.7	11.9		44.1	6.9		42.1	33.9	
LOS	D	A	A	C	B		D	A		D	C	
Approach Delay		9.2			15.2			30.7			35.3	
Approach LOS		A			B			C			D	

Intersection Summary

Cycle Length: 84
Actuated Cycle Length: 84
Offset: 3 (4%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 18.7 — Intersection LOS: B
Intersection Capacity Utilization 54.7% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 4: Otay Mesa Road & La Media

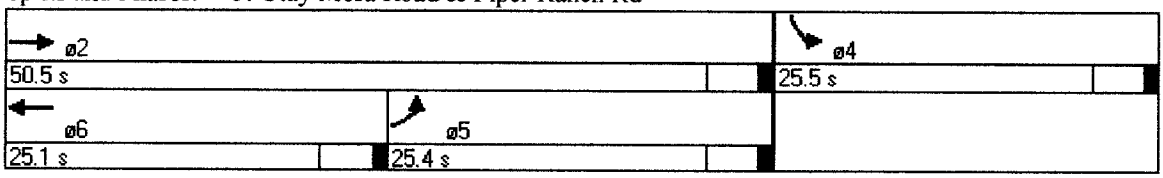


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.91	0.91	0.97	0.91
Frt			0.975		0.934	0.850
Flt Protected	0.950				0.973	
Satd. Flow (prot)	1770	3539	4958	0	3284	1441
Flt Permitted	0.950				0.973	
Satd. Flow (perm)	1770	3539	4958	0	3284	1441
Satd. Flow (RTOR)			55		60	61
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	180	711	363	73	67	105
Adj. Flow (vph)	207	817	417	84	77	121
Lane Group Flow (vph)	207	817	501	0	137	61
Turn Type	Prot					Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Total Split (s)	25.4	50.5	25.1	0.0	25.5	25.5
Act Effct Green (s)	21.4	60.3	34.9		7.7	7.7
Actuated g/C Ratio	0.28	0.79	0.46		0.10	0.10
v/c Ratio	0.42	0.29	0.22		0.36	0.30
Control Delay	11.6	0.8	10.2		21.2	13.3
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	11.6	0.8	10.2		21.2	13.3
LOS	B	A	B		C	B
Approach Delay		3.0	10.2		18.8	
Approach LOS		A	B		B	

Intersection Summary

Cycle Length: 76
Actuated Cycle Length: 76
Offset: 50 (66%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.42
Intersection Signal Delay: 6.9 — Intersection LOS: A
Intersection Capacity Utilization 31.9% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 5: Otay Mesa Road & Piper Ranch Rd

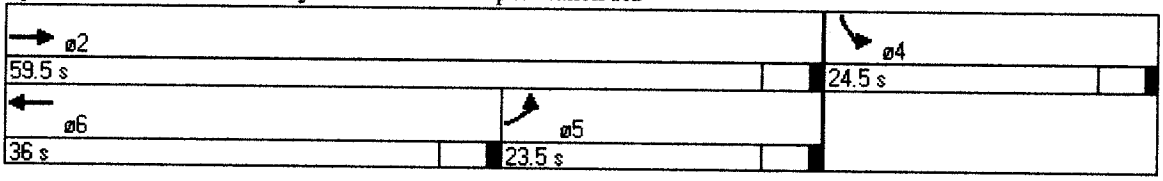


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.91	0.91	0.97	0.91
Frt			0.983		0.905	0.850
Flt Protected	0.950				0.982	
Satd. Flow (prot)	1770	3539	4999	0	3212	1441
Flt Permitted	0.950				0.982	
Satd. Flow (perm)	1770	3539	4999	0	3212	1441
Satd. Flow (RTOR)			31		202	202
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	167	684	1117	145	116	400
Adj. Flow (vph)	169	691	1128	146	117	404
Lane Group Flow (vph)	169	691	1274	0	319	202
Turn Type	Prot					Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Total Split (s)	23.5	59.5	36.0	0.0	24.5	24.5
Act Effct Green (s)	19.5	66.4	42.9		9.6	9.6
Actuated g/C Ratio	0.23	0.79	0.51		0.11	0.11
v/c Ratio	0.41	0.25	0.50		0.58	0.59
Control Delay	35.3	2.2	10.9		17.3	12.5
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	35.3	2.2	10.9		17.3	12.5
LOS	D	A	B		B	B
Approach Delay		8.7	10.9		15.5	
Approach LOS		A	B		B	

Intersection Summary

Cycle Length: 84
Actuated Cycle Length: 84
Offset: 46 (55%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.59
Intersection Signal Delay: 11.1 — Intersection LOS: B
Intersection Capacity Utilization 51.6% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 5: Otay Mesa Road & Piper Ranch Rd

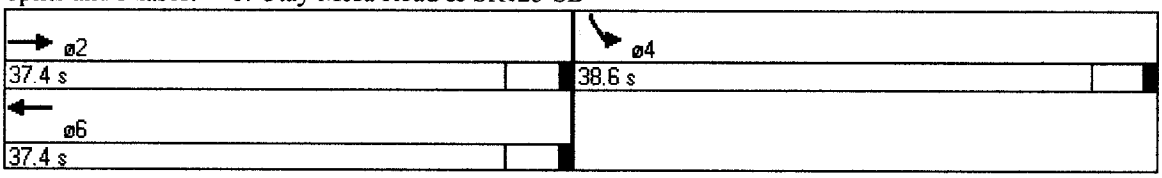


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑		↰↰	↱
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.91	1.00	0.97	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	5085	5085	0	3433	1583
Flt Permitted					0.950	
Satd. Flow (perm)	0	5085	5085	0	3433	1583
Satd. Flow (RTOR)						267
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	0	774	220	0	425	224
Adj. Flow (vph)	0	921	262	0	506	267
Lane Group Flow (vph)	0	921	262	0	506	267
Turn Type						Perm
Protected Phases		2	6		4	
Permitted Phases						4
Total Split (s)	0.0	37.4	37.4	0.0	38.6	38.6
Act Effct Green (s)		51.3	51.3		16.7	16.7
Actuated g/C Ratio		0.68	0.68		0.22	0.22
v/c Ratio		0.27	0.08		0.67	0.48
Control Delay		1.4	4.4		31.2	6.2
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		1.4	4.4		31.2	6.2
LOS		A	A		C	A
Approach Delay		1.4	4.4		22.6	
Approach LOS		A	A		C	

Intersection Summary

Cycle Length: 76
Actuated Cycle Length: 76
Offset: 23 (30%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.67
Intersection Signal Delay: 10.2 — Intersection LOS: B
Intersection Capacity Utilization 35.2% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 6: Otay Mesa Road & SR125 SB

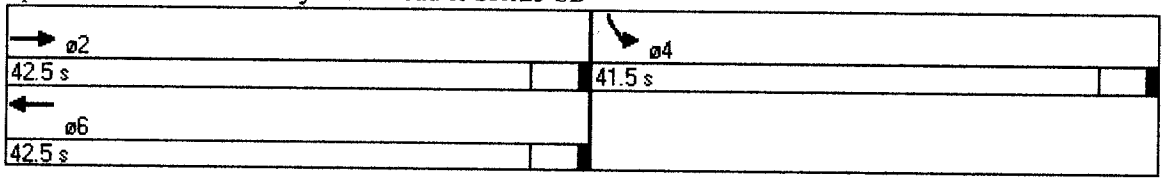


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑		↖↖	↱
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.91	1.00	0.97	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	5085	5085	0	3433	1583
Flt Permitted					0.950	
Satd. Flow (perm)	0	5085	5085	0	3433	1583
Satd. Flow (RTOR)						115
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	0	383	693	0	69	110
Adj. Flow (vph)	0	430	779	0	78	124
Lane Group Flow (vph)	0	430	779	0	78	124
Turn Type						Perm
Protected Phases		2	6		4	
Permitted Phases						4
Total Split (s)	0.0	42.5	42.5	0.0	41.5	41.5
Act Effct Green (s)		71.0	71.0		7.8	7.8
Actuated g/C Ratio		0.85	0.85		0.09	0.09
v/c Ratio		0.10	0.18		0.24	0.49
Control Delay		1.1	1.5		36.5	15.5
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		1.1	1.5		36.5	15.5
LOS		A	A		D	B
Approach Delay		1.1	1.5		23.6	
Approach LOS		A	A		C	

Intersection Summary

Cycle Length: 84
Actuated Cycle Length: 84
Offset: 56 (67%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.49
Intersection Signal Delay: 4.5 — Intersection LOS: A
Intersection Capacity Utilization 30.2% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 6: Otay Mesa Road & SR125 SB

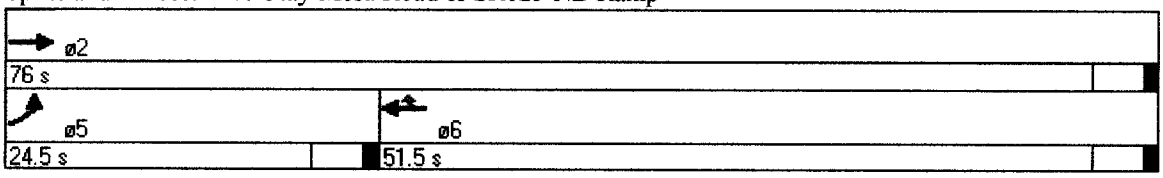


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	0.95	0.88	1.00	1.00
Frt				0.850		
Flt Protected	0.950					
Satd. Flow (prot)	3433	3539	3539	2787	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	3433	3539	3539	2787	0	0
Satd. Flow (RTOR)				44		
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	45	1154	220	36	0	0
Adj. Flow (vph)	56	1425	272	44	0	0
Lane Group Flow (vph)	56	1425	272	44	0	0
Turn Type	Prot			Perm		
Protected Phases	5	2	6			
Permitted Phases				6		
Total Split (s)	24.5	76.0	51.5	51.5	0.0	0.0
Act Effct Green (s)	6.9	76.0	66.8	66.8		
Actuated g/C Ratio	0.09	1.00	0.88	0.88		
v/c Ratio	0.18	0.40	0.09	0.02		
Control Delay	37.7	0.4	0.5	0.0		
Queue Delay	0.0	0.0	0.0	0.0		
Total Delay	37.7	0.4	0.5	0.0		
LOS	D	A	A	A		
Approach Delay		1.8	0.5			
Approach LOS		A	A			

Intersection Summary

Cycle Length: 76
Actuated Cycle Length: 76
Offset: 22 (29%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.40
Intersection Signal Delay: 1.6 — Intersection LOS: A
Intersection Capacity Utilization 35.2% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 7: Otay Mesa Road & SR125 NB Ramp

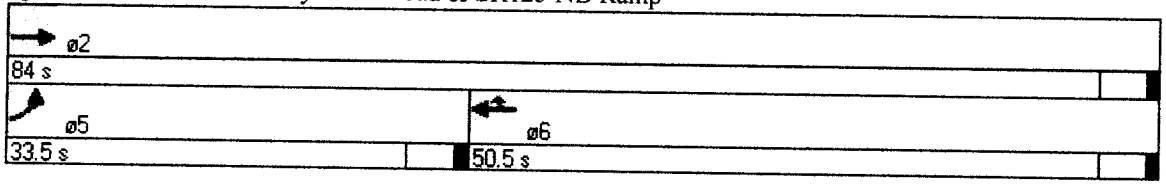


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	0.95	0.88	1.00	1.00
Frt				0.850		
Flt Protected	0.950					
Satd. Flow (prot)	3433	3539	3539	2787	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	3433	3539	3539	2787	0	0
Satd. Flow (RTOR)				331		
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	154	298	693	298	0	0
Adj. Flow (vph)	171	331	770	331	0	0
Lane Group Flow (vph)	171	331	770	331	0	0
Turn Type	Prot			Perm		
Protected Phases	5	2	6			
Permitted Phases				6		
Total Split (s)	33.5	84.0	50.5	50.5	0.0	0.0
Act Effct Green (s)	8.7	84.0	67.3	67.3		
Actuated g/C Ratio	0.10	1.00	0.80	0.80		
v/c Ratio	0.48	0.09	0.27	0.14		
Control Delay	52.6	0.1	2.3	0.7		
Queue Delay	0.0	0.0	0.0	0.0		
Total Delay	52.6	0.1	2.3	0.7		
LOS	D	A	A	A		
Approach Delay		17.9	1.8			
Approach LOS		B	A			

Intersection Summary

Cycle Length: 84
Actuated Cycle Length: 84
Offset: 31 (37%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.48
Intersection Signal Delay: 6.9 — Intersection LOS: A
Intersection Capacity Utilization 30.2% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 7: Otay Mesa Road & SR125 NB Ramp

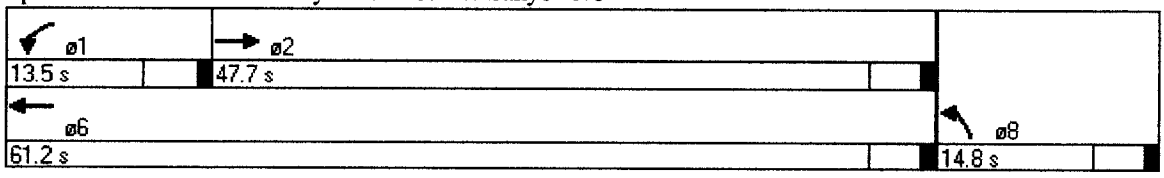


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	0.95	1.00	1.00	0.97	0.95
Frt	0.937				0.995	
Flt Protected			0.950		0.954	
Satd. Flow (prot)	3316	0	1770	1863	3430	0
Flt Permitted			0.950		0.954	
Satd. Flow (perm)	3316	0	1770	1863	3430	0
Satd. Flow (RTOR)	408				4	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	666	487	4	165	88	3
Adj. Flow (vph)	822	601	5	204	109	4
Lane Group Flow (vph)	1423	0	5	204	113	0
Turn Type			Prot			
Protected Phases	2		1	6	8	
Permitted Phases						
Total Split (s)	47.7	0.0	13.5	61.2	14.8	0.0
Act Effct Green (s)	60.5		6.3	62.6	8.2	
Actuated g/C Ratio	0.80		0.08	0.82	0.11	
v/c Ratio	0.52		0.03	0.13	0.30	
Control Delay	2.2		22.5	6.6	31.8	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	2.2		22.5	6.6	31.8	
LOS	A		C	A	C	
Approach Delay	2.2			6.9	31.8	
Approach LOS	A			A	C	

Intersection Summary

Cycle Length: 76
Actuated Cycle Length: 76
Offset: 28 (37%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.52
Intersection Signal Delay: 4.7 — Intersection LOS: A
Intersection Capacity Utilization 44.0% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 10: Otay Mesa Road & Sanyo Ave

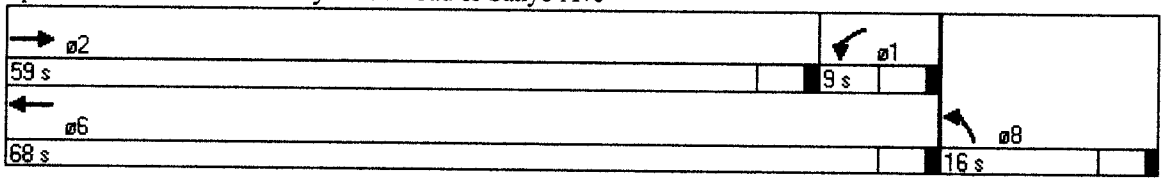


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	0.95	1.00	1.00	0.97	0.95
Frt	0.906				0.999	
Flt Protected			0.950		0.953	
Satd. Flow (prot)	3207	0	1770	1863	3440	0
Flt Permitted			0.950		0.953	
Satd. Flow (perm)	3207	0	1770	1863	3440	0
Satd. Flow (RTOR)	204				1	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	111	186	14	625	363	4
Adj. Flow (vph)	122	204	15	687	399	4
Lane Group Flow (vph)	326	0	15	687	403	0
Turn Type			Prot			
Protected Phases	2		1	6	8	
Permitted Phases						
Total Split (s)	59.0	0.0	9.0	68.0	16.0	0.0
Act Effct Green (s)	51.3		14.4	61.4	14.6	
Actuated g/C Ratio	0.61		0.17	0.73	0.17	
v/c Ratio	0.16		0.05	0.50	0.67	
Control Delay	3.9		22.4	5.1	39.2	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	3.9		22.4	5.1	39.2	
LOS	A		C	A	D	
Approach Delay	3.9			5.5	39.2	
Approach LOS	A			A	D	

Intersection Summary

Cycle Length: 84
Actuated Cycle Length: 84
Offset: 24 (29%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.67
Intersection Signal Delay: 14.6 — Intersection LOS: B
Intersection Capacity Utilization 50.0% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 10: Otay Mesa Road & Sanyo Ave

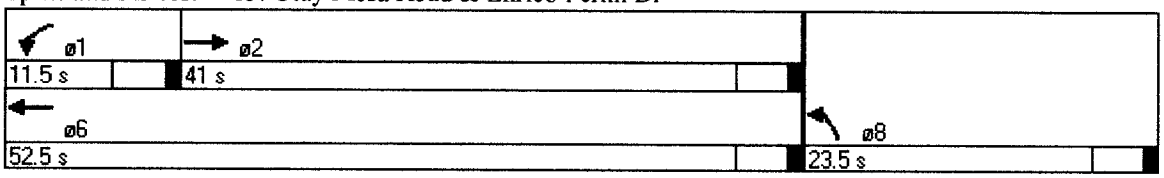


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.978					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1822	0	1770	1863	1770	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1822	0	1770	1863	1770	1583
Satd. Flow (RTOR)	18					21
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	341	65	2	103	89	15
Adj. Flow (vph)	467	89	3	141	122	21
Lane Group Flow (vph)	556	0	3	141	122	21
Turn Type			Prot			Perm
Protected Phases	2		1	6	8	
Permitted Phases						8
Total Split (s)	41.0	0.0	11.5	52.5	23.5	23.5
Act Effct Green (s)	55.4		6.2	57.6	10.4	10.4
Actuated g/C Ratio	0.73		0.08	0.76	0.14	0.14
v/c Ratio	0.42		0.02	0.10	0.50	0.09
Control Delay	8.8		32.5	3.1	33.6	12.5
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	8.8		32.5	3.1	33.6	12.5
LOS	A		C	A	C	B
Approach Delay	8.8			3.7	30.5	
Approach LOS	A			A	C	

Intersection Summary

Cycle Length: 76
Actuated Cycle Length: 76
Offset: 45 (59%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.50
Intersection Signal Delay: 11.6 — Intersection LOS: B
Intersection Capacity Utilization 33.5% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 13: Otay Mesa Road & Enrico Fermi Dr

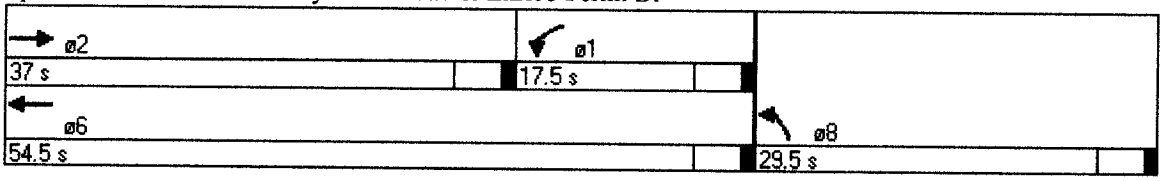


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.958					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1785	0	1770	1863	1770	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1785	0	1770	1863	1770	1583
Satd. Flow (RTOR)	32					6
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	78	36	10	426	105	5
Adj. Flow (vph)	90	41	12	490	121	6
Lane Group Flow (vph)	131	0	12	490	121	6
Turn Type			Prot			Perm
Protected Phases	2		1	6	8	
Permitted Phases						8
Total Split (s)	37.0	0.0	17.5	54.5	29.5	29.5
Act Effct Green (s)	61.4		7.7	64.9	11.1	11.1
Actuated g/C Ratio	0.73		0.09	0.77	0.13	0.13
v/c Ratio	0.10		0.07	0.34	0.52	0.03
Control Delay	1.9		33.9	4.1	56.1	33.0
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	1.9		33.9	4.1	56.1	33.0
LOS	A		C	A	E	C
Approach Delay	1.9			4.8	55.0	
Approach LOS	A			A	E	

Intersection Summary

Cycle Length: 84
Actuated Cycle Length: 84
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.52
Intersection Signal Delay: 12.7 — Intersection LOS: B
Intersection Capacity Utilization 30.4% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 13: Otay Mesa Road & Enrico Fermi Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	474	1	0	0	0	0	0	0	1	0	0	81
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 (vph)	515	1	0	0	0	0	0	0	1	0	0	88

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	516	0	1	88
Volume Left (vph)	515	0	0	0
Volume Right (vph)	0	0	1	88
Hadj (s)	0.23	0.00	-0.57	-0.57
Departure Headway (s)	4.3	4.7	4.7	4.6
Degree Utilization, x	0.62	0.00	0.00	0.11
Capacity (veh/h)	818	750	682	710
Control Delay (s)	14.3	7.7	7.7	8.1
Approach Delay (s)	14.3	0.0	7.7	8.1
Approach LOS	B	A	A	A

Intersection Summary			
Delay	13.4		
HCM Level of Service	B		
Intersection Capacity Utilization	38.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	60	0	0	0	0	0	2	0	0	0	0	343
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 (vph)	65	0	0	0	0	0	2	0	0	0	0	373

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	65	0	2	373
Volume Left (vph)	65	0	2	0
Volume Right (vph)	0	0	0	373
Hadj (s)	0.23	0.00	0.23	-0.57
Departure Headway (s)	4.8	4.7	4.6	3.5
Degree Utilization, x	0.09	0.00	0.00	0.36
Capacity (veh/h)	686	708	746	1010
Control Delay (s)	8.3	7.7	7.6	8.5
Approach Delay (s)	8.3	0.0	7.6	8.5
Approach LOS	A	A	A	A

Intersection Summary			
Delay	8.5		
HCM Level of Service	A		
Intersection Capacity Utilization	31.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	7	40	28	4	79	81	23	41	3	88	272	72
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	8	44	31	4	87	89	25	45	3	97	299	79

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	82	91	89	25	48	396	79
Volume Left (vph)	8	4	0	25	0	97	0
Volume Right (vph)	31	0	89	0	3	0	79
Hadj (s)	-0.17	0.06	-0.67	0.53	-0.01	0.16	-0.67
Departure Headway (s)	6.0	6.1	5.4	6.4	5.8	5.5	4.7
Degree Utilization, x	0.14	0.15	0.13	0.04	0.08	0.61	0.10
Capacity (veh/h)	555	548	619	533	581	636	739
Control Delay (s)	9.9	9.0	8.0	8.4	8.1	15.4	7.0
Approach Delay (s)	9.9	8.5		8.2		14.0	
Approach LOS	A	A		A		B	

Intersection Summary			
Delay	11.8		
HCM Level of Service	B		
Intersection Capacity Utilization	42.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	50	60	15	8	82	129	36	175	1	40	131	38
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	57	68	17	9	93	147	41	199	1	45	149	43

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	142	102	147	41	200	194	43
Volume Left (vph)	57	9	0	41	0	45	0
Volume Right (vph)	17	0	147	0	1	0	43
Hadj (s)	0.04	0.08	-0.67	0.53	0.03	0.15	-0.67
Departure Headway (s)	6.2	6.2	5.4	6.5	6.0	6.1	5.3
Degree Utilization, x	0.25	0.17	0.22	0.07	0.33	0.33	0.06
Capacity (veh/h)	535	544	618	522	568	554	632
Control Delay (s)	11.3	9.3	8.7	8.8	10.8	10.9	7.5
Approach Delay (s)	11.3	8.9		10.4		10.3	
Approach LOS	B	A		B		B	

Intersection Summary			
Delay	10.1		
HCM Level of Service	B		
Intersection Capacity Utilization	41.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	17	86	28	5	68	2	33	4	9	2	0	63
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	19	96	31	6	76	2	37	4	10	2	0	70
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	78			127			268	238	63	186	252	39
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	78			127			268	238	63	186	252	39
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			94	99	99	100	100	93
cM capacity (veh/h)	1519			1457			610	651	988	737	639	1024

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1
Volume Total	19	64	63	6	50	27	41	10	72
Volume Left	19	0	0	6	0	0	37	0	2
Volume Right	0	0	31	0	0	2	0	10	70
cSH	1519	1700	1700	1457	1700	1700	615	988	1012
Volume to Capacity	0.01	0.04	0.04	0.00	0.03	0.02	0.07	0.01	0.07
Queue Length 95th (ft)	1	0	0	0	0	0	5	1	6
Control Delay (s)	7.4	0.0	0.0	7.5	0.0	0.0	11.3	8.7	8.8
Lane LOS	A			A			B	A	A
Approach Delay (s)	1.0			0.5			10.8		8.8
Approach LOS							B		A

Intersection Summary			
Average Delay	3.9		
Intersection Capacity Utilization	23.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	21	56	24	26	127	1	82	3	10	0	2	10
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	24	64	28	30	146	1	94	3	11	0	2	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	147			92			272	333	46	300	347	74
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	147			92			272	333	46	300	347	74
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			98			85	99	99	100	100	99
cM capacity (veh/h)	1432			1501			631	564	1014	602	554	973

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1
Volume Total	24	43	49	30	97	50	98	11	14
Volume Left	24	0	0	30	0	0	94	0	0
Volume Right	0	0	28	0	0	1	0	11	11
cSH	1432	1700	1700	1501	1700	1700	629	1014	864
Volume to Capacity	0.02	0.03	0.03	0.02	0.06	0.03	0.16	0.01	0.02
Queue Length 95th (ft)	1	0	0	2	0	0	14	1	1
Control Delay (s)	7.6	0.0	0.0	7.4	0.0	0.0	11.8	8.6	9.2
Lane LOS	A			A			B	A	A
Approach Delay (s)	1.6			1.3			11.4		9.2
Approach LOS							B		A

Intersection Summary			
Average Delay	4.3		
Intersection Capacity Utilization	28.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	31	37	4	62	23	11
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	40	47	5	79	29	14
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)				1290		
pX, platoon unblocked						
vC, conflicting volume			87		153	44
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			87		153	44
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		96	99
cM capacity (veh/h)			1507		820	1017

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2
Volume Total	26	61	5	79	29	14
Volume Left	0	0	5	0	29	0
Volume Right	0	47	0	0	0	14
cSH	1700	1700	1507	1700	820	1017
Volume to Capacity	0.02	0.04	0.00	0.05	0.04	0.01
Queue Length 95th (ft)	0	0	0	0	3	1
Control Delay (s)	0.0	0.0	7.4	0.0	9.6	8.6
Lane LOS			A		A	A
Approach Delay (s)	0.0		0.4		9.2	
Approach LOS					A	

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	19	36	1	75	55	1
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	23	43	1	89	65	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)				1290		
pX, platoon unblocked						
vC, conflicting volume			65		136	33
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			65		136	33
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		92	100
cM capacity (veh/h)			1535		843	1033

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2
Volume Total	15	50	1	89	65	1
Volume Left	0	0	1	0	65	0
Volume Right	0	43	0	0	0	1
cSH	1700	1700	1535	1700	843	1033
Volume to Capacity	0.01	0.03	0.00	0.05	0.08	0.00
Queue Length 95th (ft)	0	0	0	0	6	0
Control Delay (s)	0.0	0.0	7.3	0.0	9.6	8.5
Lane LOS			A		A	A
Approach Delay (s)	0.0		0.1		9.6	
Approach LOS					A	

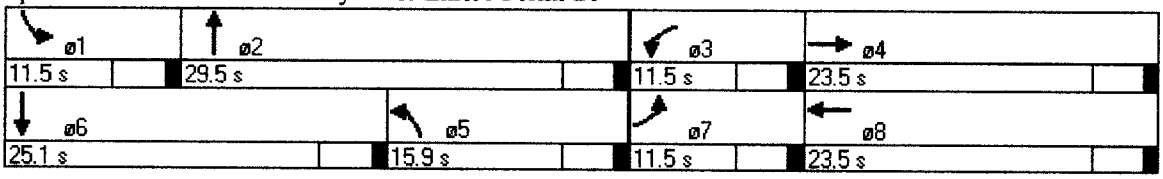
Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	13.9%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.880	0.850			0.850		0.994			0.989	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1557	1504	1770	1863	1583	1770	3518	0	1770	3500	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1557	1504	1770	1863	1583	1770	3518	0	1770	3500	0
Satd. Flow (RTOR)		20	22			5		4			8	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	7	4	31	6	2	4	58	71	3	3	75	6
Adj. Flow (vph)	9	5	42	8	3	5	78	96	4	4	101	8
Lane Group Flow (vph)	9	25	22	8	3	5	78	100	0	4	109	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Total Split (s)	11.5	23.5	23.5	11.5	23.5	23.5	15.9	29.5	0.0	11.5	25.1	0.0
Act Effct Green (s)	6.4	6.6	6.6	6.3	6.6	6.6	8.7	62.5		6.3	56.4	
Actuated g/C Ratio	0.08	0.09	0.09	0.08	0.09	0.09	0.11	0.82		0.08	0.74	
v/c Ratio	0.06	0.16	0.14	0.05	0.02	0.03	0.38	0.03		0.03	0.04	
Control Delay	32.6	19.1	16.1	32.7	31.5	20.8	29.5	4.0		20.0	9.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	32.6	19.1	16.1	32.7	31.5	20.8	29.5	4.0		20.0	9.0	
LOS	C	B	B	C	C	C	C	A		B	A	
Approach Delay		20.1			28.7			15.2			9.4	
Approach LOS		C			C			B			A	

Intersection Summary

Cycle Length: 76
Actuated Cycle Length: 76
Offset: 10 (13%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.38
Intersection Signal Delay: 14.7 — Intersection LOS: B
Intersection Capacity Utilization 22.4% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 23: Airway Rd & Enrico Fermi Dr

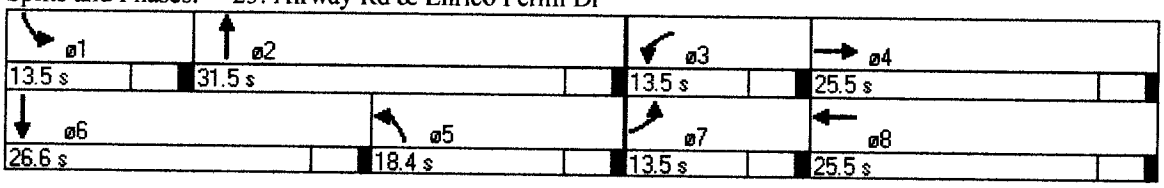


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850			0.850		0.991			0.990	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1770	1504	1770	1863	1583	1770	3507	0	1770	3504	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1770	1504	1770	1863	1583	1770	3507	0	1770	3504	0
Satd. Flow (RTOR)			12			4		7			5	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	7	3	10	6	5	3	67	89	6	5	60	4
Adj. Flow (vph)	9	4	12	7	6	4	82	109	7	6	73	5
Lane Group Flow (vph)	9	4	12	7	6	4	82	116	0	6	78	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Total Split (s)	13.5	25.5	25.5	13.5	25.5	25.5	18.4	31.5	0.0	13.5	26.6	0.0
Act Effct Green (s)	6.4	6.4	6.4	6.3	6.3	6.3	10.4	76.4		6.4	63.9	
Actuated g/C Ratio	0.08	0.08	0.08	0.08	0.08	0.08	0.12	0.91		0.08	0.76	
v/c Ratio	0.07	0.03	0.10	0.05	0.04	0.03	0.37	0.04		0.04	0.03	
Control Delay	36.7	36.0	20.6	36.7	36.4	24.3	37.3	1.3		37.0	7.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	36.7	36.0	20.6	36.7	36.4	24.3	37.3	1.3		37.0	7.8	
LOS	D	D	C	D	D	C	D	A		D	A	
Approach Delay		28.9			33.7			16.2			9.8	
Approach LOS		C			C			B			A	

Intersection Summary

Cycle Length: 84
Actuated Cycle Length: 84
Offset: 53 (63%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.37
Intersection Signal Delay: 16.5 — Intersection LOS: B
Intersection Capacity Utilization 22.9% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 23: Airway Rd & Enrico Fermi Dr

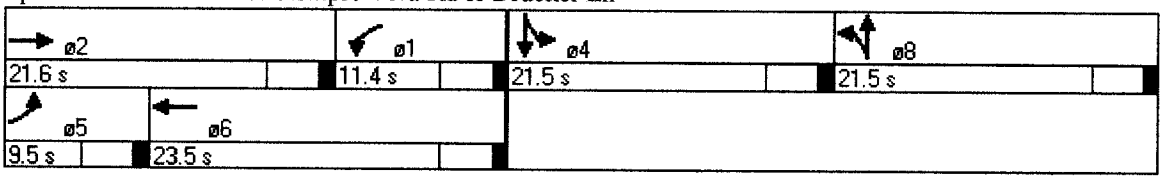


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.973			0.975			0.869			0.943	
Flt Protected	0.950			0.950			0.950				0.978	
Satd. Flow (prot)	1770	4948	0	1770	4958	0	1770	1619	0	0	1718	0
Flt Permitted	0.950			0.950			0.950				0.978	
Satd. Flow (perm)	1770	4948	0	1770	4958	0	1770	1619	0	0	1718	0
Satd. Flow (RTOR)		25			47			7			28	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	18	104	23	45	220	43	13	1	6	28	7	26
Adj. Flow (vph)	20	113	25	49	239	47	14	1	7	30	8	28
Lane Group Flow (vph)	20	138	0	49	286	0	14	8	0	0	66	0
Turn Type	Prot			Prot			Split			Split		
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases												
Total Split (s)	9.5	21.6	0.0	11.4	23.5	0.0	21.5	21.5	0.0	21.5	21.5	0.0
Act Effct Green (s)	6.9	42.7		7.0	44.7		6.7	6.7			7.8	
Actuated g/C Ratio	0.09	0.56		0.09	0.59		0.09	0.09			0.10	
v/c Ratio	0.12	0.05		0.30	0.10		0.09	0.05			0.33	
Control Delay	33.0	8.1		38.0	7.9		32.8	20.9			24.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay	33.0	8.1		38.0	7.9		32.8	20.9			24.8	
LOS	C	A		D	A		C	C			C	
Approach Delay		11.3			12.3			28.4			24.8	
Approach LOS		B			B			C			C	

Intersection Summary

Cycle Length: 76
Actuated Cycle Length: 76
Offset: 48 (63%), Referenced to phase 2:EBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.33
Intersection Signal Delay: 14.1 — Intersection LOS: B
Intersection Capacity Utilization 28.7% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 86: Siempre Viva Rd & Drucker Ln

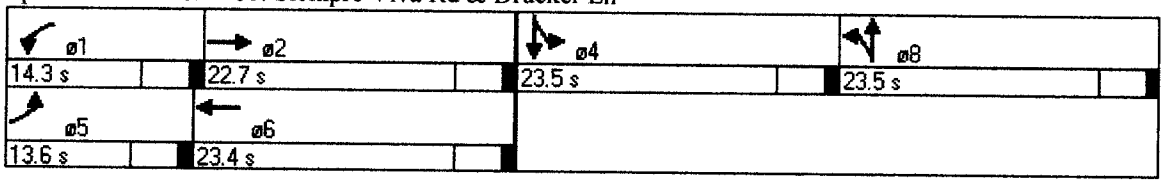


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.980			0.961			0.864			0.978	
Flt Protected	0.950			0.950			0.950				0.976	
Satd. Flow (prot)	1770	4984	0	1770	4887	0	1770	1609	0	0	1778	0
Flt Permitted	0.950			0.950			0.950				0.976	
Satd. Flow (perm)	1770	4984	0	1770	4887	0	1770	1609	0	0	1778	0
Satd. Flow (RTOR)		31			87			19			11	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	44	208	32	58	224	79	26	2	17	49	33	16
Adj. Flow (vph)	48	229	35	64	246	87	29	2	19	54	36	18
Lane Group Flow (vph)	48	264	0	64	333	0	29	21	0	0	108	0
Turn Type	Prot			Prot			Split			Split		
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases												
Total Split (s)	13.6	22.7	0.0	14.3	23.4	0.0	23.5	23.5	0.0	23.5	23.5	0.0
Act Effct Green (s)	8.2	46.2		8.5	46.4		7.3	7.3			10.2	
Actuated g/C Ratio	0.10	0.55		0.10	0.55		0.09	0.09			0.12	
v/c Ratio	0.28	0.10		0.36	0.12		0.19	0.13			0.48	
Control Delay	38.6	10.3		42.1	3.9		37.8	18.7			37.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay	38.6	10.3		42.1	3.9		37.8	18.7			37.2	
LOS	D	B		D	A		D	B			D	
Approach Delay		14.7			10.1			29.8			37.2	
Approach LOS		B			B			C			D	

Intersection Summary

Cycle Length: 84
Actuated Cycle Length: 84
Offset: 47 (56%), Referenced to phase 2:EBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.48
Intersection Signal Delay: 16.2 — Intersection LOS: B
Intersection Capacity Utilization 31.5% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 86: Siempre Viva Rd & Drucker Ln

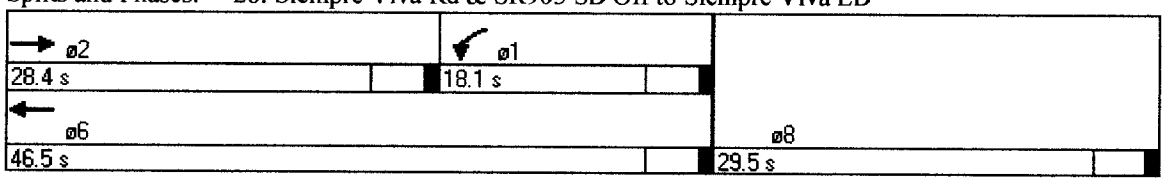


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.91	0.91	0.97	0.91	1.00	0.88
Frt	0.977					0.850
Flt Protected			0.950			
Satd. Flow (prot)	4968	0	3433	5085	0	2787
Flt Permitted			0.950			
Satd. Flow (perm)	4968	0	3433	5085	0	2787
Satd. Flow (RTOR)	43					1163
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	221	40	74	527	0	271
Adj. Flow (vph)	240	43	80	573	0	295
Lane Group Flow (vph)	283	0	80	573	0	295
Turn Type			Prot			custom
Protected Phases	2		1	6		
Permitted Phases						8
Total Split (s)	28.4	0.0	18.1	46.5	0.0	29.5
Act Effct Green (s)	47.5		12.5	62.0		6.0
Actuated g/C Ratio	0.62		0.16	0.82		0.08
v/c Ratio	0.09		0.14	0.14		0.23
Control Delay	4.3		26.8	1.6		0.4
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	4.3		26.8	1.6		0.4
LOS	A		C	A		A
Approach Delay	4.3			4.7		
Approach LOS	A			A		

Intersection Summary

Cycle Length: 76
Actuated Cycle Length: 76
Offset: 22 (29%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.23
Intersection Signal Delay: 3.6 — Intersection LOS: A
Intersection Capacity Utilization 21.3% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 28: Siempre Viva Rd & SR905 SB Off to Siempre Viva EB

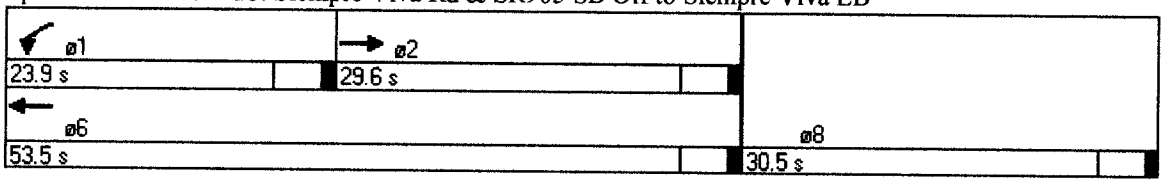


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.91	0.91	0.97	0.91	1.00	0.88
Frt	0.944					0.850
Flt Protected			0.950			
Satd. Flow (prot)	4801	0	3433	5085	0	2787
Flt Permitted			0.950			
Satd. Flow (perm)	4801	0	3433	5085	0	2787
Satd. Flow (RTOR)	183					1056
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	366	216	207	484	0	128
Adj. Flow (vph)	373	220	211	494	0	131
Lane Group Flow (vph)	593	0	211	494	0	131
Turn Type			Prot			custom
Protected Phases	2		1	6		
Permitted Phases						8
Total Split (s)	29.6	0.0	23.9	53.5	0.0	30.5
Act Effct Green (s)	58.0		10.0	72.8		6.0
Actuated g/C Ratio	0.69		0.12	0.87		0.07
v/c Ratio	0.18		0.52	0.11		0.11
Control Delay	2.1		36.3	1.9		0.2
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	2.1		36.3	1.9		0.2
LOS	A		D	A		A
Approach Delay	2.1			12.2		
Approach LOS	A			B		

Intersection Summary

Cycle Length: 84
Actuated Cycle Length: 84
Offset: 26 (31%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.52
Intersection Signal Delay: 6.9 — Intersection LOS: A
Intersection Capacity Utilization 24.5% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 28: Siempre Viva Rd & SR905 SB Off to Siempre Viva EB



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑			↱
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	492	392	0	0	209
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	523	417	0	0	222
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		281	733			
pX, platoon unblocked						
vC, conflicting volume	417				591	139
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	417				591	139
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	75
cM capacity (veh/h)	1138				438	884

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1
Volume Total	174	174	174	139	139	139	222
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	222
cSH	1700	1700	1700	1700	1700	1700	884
Volume to Capacity	0.10	0.10	0.10	0.08	0.08	0.08	0.25
Queue Length 95th (ft)	0	0	0	0	0	0	25
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	10.4
Lane LOS							B
Approach Delay (s)	0.0			0.0			10.4
Approach LOS							B

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	33.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑			↱
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	494	535	0	0	156
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	0	504	546	0	0	159
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		281	733			
pX, platoon unblocked						
vC, conflicting volume	546				714	182
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	546				714	182
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	81
cM capacity (veh/h)	1019				366	829

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1
Volume Total	168	168	168	182	182	182	159
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	159
cSH	1700	1700	1700	1700	1700	1700	829
Volume to Capacity	0.10	0.10	0.10	0.11	0.11	0.11	0.19
Queue Length 95th (ft)	0	0	0	0	0	0	18
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	10.4
Lane LOS							B
Approach Delay (s)	0.0			0.0			10.4
Approach LOS							B

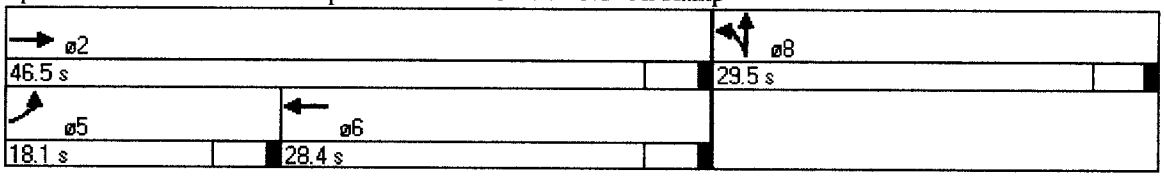
Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	35.2%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	1.00	0.86	0.86	1.00	1.00	0.88	1.00	1.00	1.00
Frt					0.944	0.850			0.850			
Flt Protected	0.950							0.953				
Satd. Flow (prot)	3433	5085	0	0	4537	1362	0	1775	2787	0	0	0
Flt Permitted	0.950							0.953				
Satd. Flow (perm)	3433	5085	0	0	4537	1362	0	1775	2787	0	0	0
Satd. Flow (RTOR)					140	140			238			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	74	418	0	0	228	269	164	3	228	0	0	0
Adj. Flow (vph)	77	435	0	0	238	280	171	3	238	0	0	0
Lane Group Flow (vph)	77	435	0	0	378	140	0	174	238	0	0	0
Turn Type	Prot					Perm	Split		Perm			
Protected Phases	5	2			6		8	8				
Permitted Phases						6			8			
Total Split (s)	18.1	46.5	0.0	0.0	28.4	28.4	29.5	29.5	29.5	0.0	0.0	0.0
Act Effct Green (s)	7.3	55.2			48.0	48.0		12.8	12.8			
Actuated g/C Ratio	0.10	0.73			0.63	0.63		0.17	0.17			
v/c Ratio	0.23	0.12			0.13	0.15		0.58	0.36			
Control Delay	34.4	2.3			2.9	1.9		36.4	5.3			
Queue Delay	0.0	0.0			0.0	0.0		0.0	0.0			
Total Delay	34.4	2.3			2.9	1.9		36.4	5.3			
LOS	C	A			A	A		D	A			
Approach Delay		7.2			2.6			18.5				
Approach LOS		A			A			B				

Intersection Summary

Cycle Length: 76
Actuated Cycle Length: 76
Offset: 53 (70%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.58
Intersection Signal Delay: 8.8 — Intersection LOS: A
Intersection Capacity Utilization 33.7% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 30: Siempre Viva Rd & SR 905 NB On Ramp

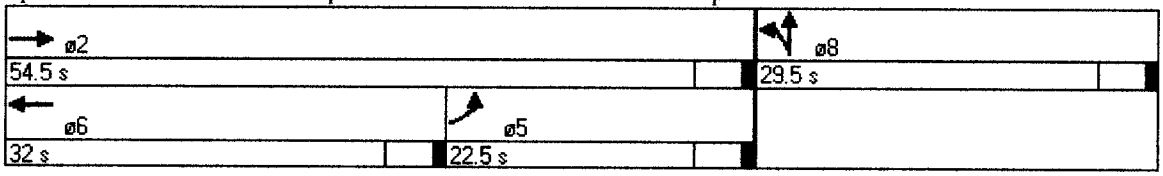


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	1.00	0.86	0.86	1.00	1.00	0.88	1.00	1.00	1.00
Frt					0.962	0.850			0.850			
Flt Protected	0.950							0.953				
Satd. Flow (prot)	3433	5085	0	0	4623	1362	0	1775	2787	0	0	0
Flt Permitted	0.950							0.953				
Satd. Flow (perm)	3433	5085	0	0	4623	1362	0	1775	2787	0	0	0
Satd. Flow (RTOR)					108	257			172			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	186	308	0	0	477	401	58	1	162	0	0	0
Adj. Flow (vph)	198	328	0	0	507	427	62	1	172	0	0	0
Lane Group Flow (vph)	198	328	0	0	677	257	0	63	172	0	0	0
Turn Type	Prot					Perm	Split		Perm			
Protected Phases	5	2			6		8	8				
Permitted Phases						6			8			
Total Split (s)	22.5	54.5	0.0	0.0	32.0	32.0	29.5	29.5	29.5	0.0	0.0	0.0
Act Effct Green (s)	10.5	67.4			52.9	52.9		8.6	8.6			
Actuated g/C Ratio	0.12	0.80			0.63	0.63		0.10	0.10			
v/c Ratio	0.46	0.08			0.23	0.27		0.35	0.39			
Control Delay	38.3	1.0			2.2	0.8		39.7	8.5			
Queue Delay	0.0	0.0			0.0	0.0		0.0	0.0			
Total Delay	38.3	1.0			2.2	0.8		39.7	8.5			
LOS	D	A			A	A		D	A			
Approach Delay		15.0			1.8			16.9				
Approach LOS		B			A			B				

Intersection Summary

Cycle Length: 84
Actuated Cycle Length: 84
Offset: 40 (48%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.46
Intersection Signal Delay: 8.0 — Intersection LOS: A
Intersection Capacity Utilization 35.2% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 30: Siempre Viva Rd & SR 905 NB On Ramp

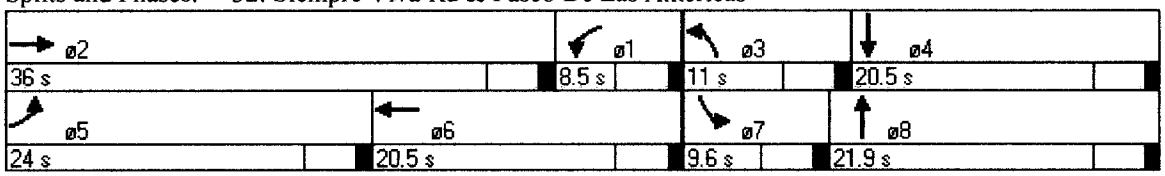


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850		0.993				0.850		0.958	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5085	1583	1770	3514	0	1770	3539	1583	1770	3391	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	5085	1583	1770	3514	0	1770	3539	1583	1770	3391	0
Satd. Flow (RTOR)			121		6				4		68	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	382	104	114	8	127	7	88	31	4	54	192	74
Adj. Flow (vph)	406	111	121	9	135	7	94	33	4	57	204	79
Lane Group Flow (vph)	406	111	121	9	142	0	94	33	4	57	283	0
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2						8			
Total Split (s)	24.0	36.0	36.0	8.5	20.5	0.0	11.0	21.9	21.9	9.6	20.5	0.0
Act Effct Green (s)	22.5	47.2	47.2	4.5	22.4		6.9	13.4	13.4	5.6	10.3	
Actuated g/C Ratio	0.30	0.62	0.62	0.06	0.29		0.09	0.18	0.18	0.07	0.14	
v/c Ratio	0.78	0.04	0.12	0.09	0.14		0.59	0.05	0.01	0.44	0.54	
Control Delay	34.1	6.3	1.6	39.6	25.1		49.5	25.8	17.0	44.4	26.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	34.1	6.3	1.6	39.6	25.1		49.5	25.8	17.0	44.4	26.5	
LOS	C	A	A	D	C		D	C	B	D	C	
Approach Delay		23.1			26.0			42.5			29.5	
Approach LOS		C			C			D			C	

Intersection Summary

Cycle Length: 76
Actuated Cycle Length: 76
Offset: 3 (4%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 27.2 — Intersection LOS: C
Intersection Capacity Utilization 50.8% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 32: Siempre Viva Rd & Paseo De Las Americas

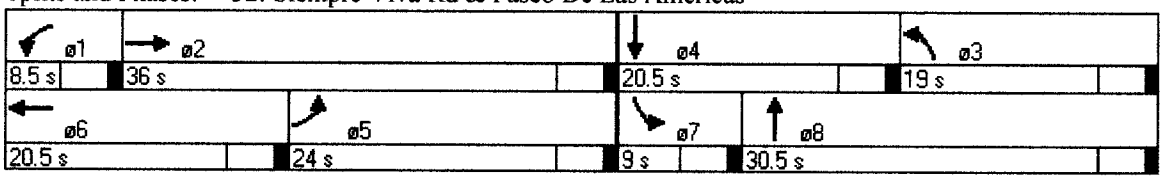


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850		0.993				0.850		0.919	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5085	1583	1770	3514	0	1770	3539	1583	1770	3253	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	5085	1583	1770	3514	0	1770	3539	1583	1770	3253	0
Satd. Flow (RTOR)			98		5				5		98	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	358	59	96	17	236	12	266	134	5	5	82	96
Adj. Flow (vph)	365	60	98	17	241	12	271	137	5	5	84	98
Lane Group Flow (vph)	365	60	98	17	253	0	271	137	5	5	182	0
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2						8			
Total Split (s)	24.0	36.0	36.0	8.5	20.5	0.0	19.0	30.5	30.5	9.0	20.5	0.0
Act Effct Green (s)	20.0	41.4	41.4	5.6	20.8		19.1	29.4	29.4	5.0	8.1	
Actuated g/C Ratio	0.24	0.49	0.49	0.07	0.25		0.23	0.35	0.35	0.06	0.10	
v/c Ratio	0.87	0.02	0.12	0.14	0.29		0.67	0.11	0.01	0.05	0.45	
Control Delay	52.7	13.8	3.9	52.8	46.1		38.1	18.4	11.6	37.4	19.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	52.7	13.8	3.9	52.8	46.1		38.1	18.4	11.6	37.4	19.8	
LOS	D	B	A	D	D		D	B	B	D	B	
Approach Delay		39.1			46.5			31.3			20.3	
Approach LOS		D			D			C			C	

Intersection Summary

Cycle Length: 84
Actuated Cycle Length: 84
Offset: 37 (44%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 35.7 — Intersection LOS: D
Intersection Capacity Utilization 60.2% — ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 32: Siempre Viva Rd & Paseo De Las Americas



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	16	42	11	12	103	8	29	10	0	3	5	18
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	20	53	14	15	130	10	37	13	0	4	6	23
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		1204			1284							
pX, platoon unblocked												
vC, conflicting volume	141			67			222	272	34	239	273	70
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	141			67			222	272	34	239	273	70
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			95	98	100	99	99	98
cM capacity (veh/h)	1440			1532			680	619	1032	672	617	978

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1	SB 2
Volume Total	20	35	32	15	87	54	49	10	23
Volume Left	20	0	0	15	0	0	37	4	0
Volume Right	0	0	14	0	0	10	0	0	23
cSH	1440	1700	1700	1532	1700	1700	663	637	978
Volume to Capacity	0.01	0.02	0.02	0.01	0.05	0.03	0.07	0.02	0.02
Queue Length 95th (ft)	1	0	0	1	0	0	6	1	2
Control Delay (s)	7.5	0.0	0.0	7.4	0.0	0.0	10.9	10.7	8.8
Lane LOS	A			A			B	B	A
Approach Delay (s)	1.7			0.7			10.9	9.4	
Approach LOS							B	A	

Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	23.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	40	41	28	9	209	1	55	9	3	1	10	46
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	47	48	33	10	243	1	64	10	3	1	12	53
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		1204			1284							
pX, platoon unblocked												
vC, conflicting volume	244			80			359	422	40	390	438	122
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	244			80			359	422	40	390	438	122
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			99			88	98	100	100	98	94
cM capacity (veh/h)	1319			1516			512	500	1022	516	490	906

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1	SB 2
Volume Total	47	32	48	10	162	82	78	13	53
Volume Left	47	0	0	10	0	0	64	1	0
Volume Right	0	0	33	0	0	1	3	0	53
cSH	1319	1700	1700	1516	1700	1700	522	492	906
Volume to Capacity	0.04	0.02	0.03	0.01	0.10	0.05	0.15	0.03	0.06
Queue Length 95th (ft)	3	0	0	1	0	0	13	2	5
Control Delay (s)	7.8	0.0	0.0	7.4	0.0	0.0	13.1	12.5	9.2
Lane LOS	A			A			B	B	A
Approach Delay (s)	2.9			0.3			13.1	9.9	
Approach LOS							B	A	

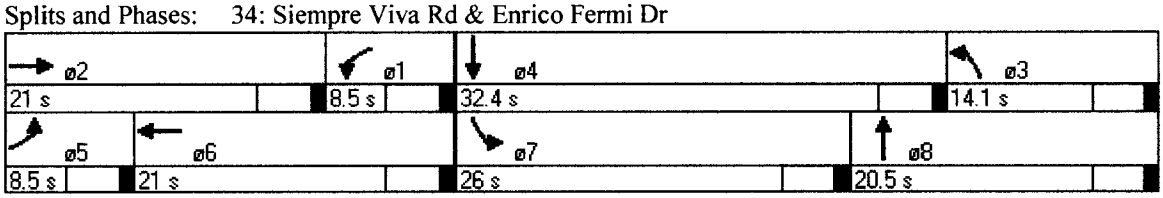
Intersection Summary			
Average Delay	4.0		
Intersection Capacity Utilization	29.5%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.942			0.925						0.938	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	1755	0	1770	3274	0	1770	3539	0	1770	3320	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	1755	0	1770	3274	0	1770	3539	0	1770	3320	0
Satd. Flow (RTOR)		12			11						17	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	20	16	10	7	9	9	89	75	0	1	20	14
Adj. Flow (vph)	24	19	12	8	11	11	107	90	0	1	24	17
Lane Group Flow (vph)	24	31	0	8	22	0	107	90	0	1	41	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Total Split (s)	8.5	21.0	0.0	8.5	21.0	0.0	14.1	20.5	0.0	26.0	32.4	0.0
Act Effct Green (s)	6.6	47.8		4.5	45.0		10.4	16.5		6.1	6.2	
Actuated g/C Ratio	0.09	0.63		0.06	0.59		0.14	0.22		0.08	0.08	
v/c Ratio	0.08	0.03		0.08	0.01		0.44	0.12		0.01	0.14	
Control Delay	28.9	3.9		35.4	8.2		34.9	23.1		46.0	34.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	28.9	3.9		35.4	8.2		34.9	23.1		46.0	34.0	
LOS	C	A		D	A		C	C		D	C	
Approach Delay		14.8			15.5			29.5			34.3	
Approach LOS		B			B			C			C	

Intersection Summary

Cycle Length: 76
Actuated Cycle Length: 76
Offset: 36 (47%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.44
Intersection Signal Delay: 26.3 — Intersection LOS: C
Intersection Capacity Utilization 25.5% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 34: Siempre Viva Rd & Enrico Fermi Dr

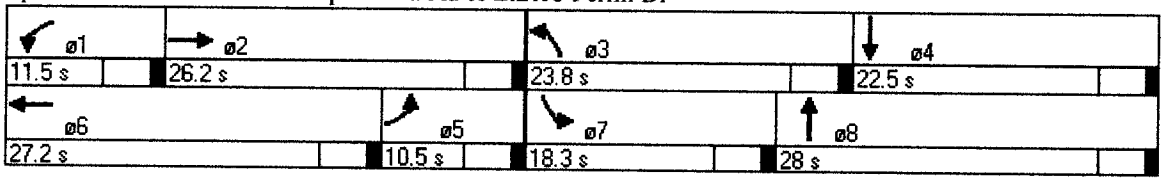


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.900			0.950						0.907	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	1676	0	1770	3362	0	1770	3539	0	1770	3210	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	1676	0	1770	3362	0	1770	3539	0	1770	3210	0
Satd. Flow (RTOR)		4			9						41	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	22	2	4	11	16	8	186	115	0	3	23	37
Adj. Flow (vph)	24	2	4	12	18	9	204	126	0	3	25	41
Lane Group Flow (vph)	24	6	0	12	27	0	204	126	0	3	66	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Total Split (s)	10.5	26.2	0.0	11.5	27.2	0.0	23.8	28.0	0.0	18.3	22.5	0.0
Act Effct Green (s)	6.3	47.8		6.7	46.0		14.9	23.7		6.2	6.9	
Actuated g/C Ratio	0.08	0.57		0.08	0.55		0.18	0.28		0.07	0.08	
v/c Ratio	0.09	0.01		0.09	0.01		0.65	0.13		0.02	0.22	
Control Delay	41.0	10.8		35.9	10.6		41.5	22.5		40.3	24.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	41.0	10.8		35.9	10.6		41.5	22.5		40.3	24.1	
LOS	D	B		D	B		D	C		D	C	
Approach Delay		34.9			18.4			34.3			24.8	
Approach LOS		C			B			C			C	

Intersection Summary

Cycle Length: 84
Actuated Cycle Length: 84
Offset: 46 (55%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.65
Intersection Signal Delay: 31.6 — Intersection LOS: C
Intersection Capacity Utilization 30.9% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 34: Siempre Viva Rd & Enrico Fermi Dr

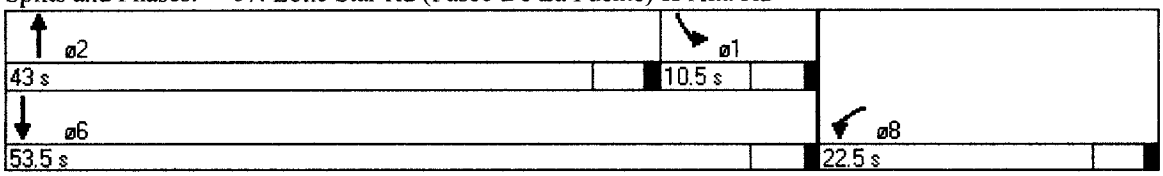


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850	0.998			
Flt Protected	0.950					
Satd. Flow (prot)	1770	1583	1859	0	1863	1863
Flt Permitted	0.950					
Satd. Flow (perm)	1770	1583	1859	0	1863	1863
Satd. Flow (RTOR)		2	2			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	2	2	470	8	0	81
Adj. Flow (vph)	2	2	511	9	0	88
Lane Group Flow (vph)	2	2	520	0	0	88
Turn Type		Perm			Prot	
Protected Phases	8		2		1	6
Permitted Phases		8				
Total Split (s)	22.5	22.5	43.0	0.0	10.5	53.5
Act Effct Green (s)	6.1	6.1	117.1			117.1
Actuated g/C Ratio	0.05	0.05	0.98			0.98
v/c Ratio	0.02	0.03	0.29			0.05
Control Delay	16.5	12.0	0.8			0.4
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	16.5	12.0	0.8			0.4
LOS	B	B	A			A
Approach Delay	14.3		0.8			0.4
Approach LOS	B		A			A

Intersection Summary

Cycle Length: 76
Actuated Cycle Length: 120
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.29
Intersection Signal Delay: 0.8 — Intersection LOS: A
Intersection Capacity Utilization 35.2% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 67: Lone Star Rd (Paseo De La Fuente) & Alta Rd

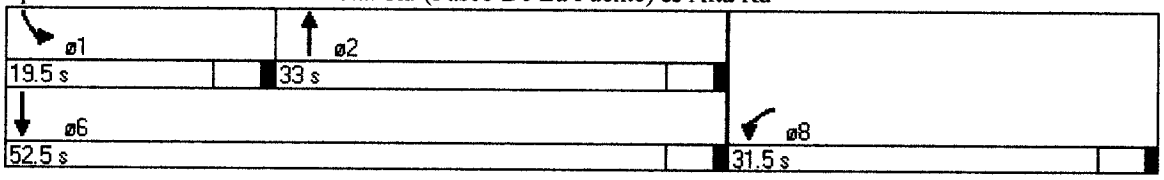


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850	0.986			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	1837	0	1770	1863
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1583	1837	0	1770	1863
Satd. Flow (RTOR)		1	7			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	8	1	54	6	2	335
Adj. Flow (vph)	9	1	59	7	2	364
Lane Group Flow (vph)	9	1	66	0	2	364
Turn Type		Perm			Prot	
Protected Phases	8		2		1	6
Permitted Phases		8				
Total Split (s)	31.5	31.5	33.0	0.0	19.5	52.5
Act Effct Green (s)	6.4	6.4	78.8		6.1	80.9
Actuated g/C Ratio	0.08	0.08	0.94		0.07	0.96
v/c Ratio	0.07	0.01	0.04		0.02	0.20
Control Delay	36.9	28.0	1.7		36.5	0.8
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	36.9	28.0	1.7		36.5	0.8
LOS	D	C	A		D	A
Approach Delay	36.0		1.7			1.0
Approach LOS	D		A			A

Intersection Summary

Cycle Length: 84
Actuated Cycle Length: 84
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.20
Intersection Signal Delay: 1.9 — Intersection LOS: A
Intersection Capacity Utilization 27.6% — ICU Level of Service A
Analysis Period (min) 15

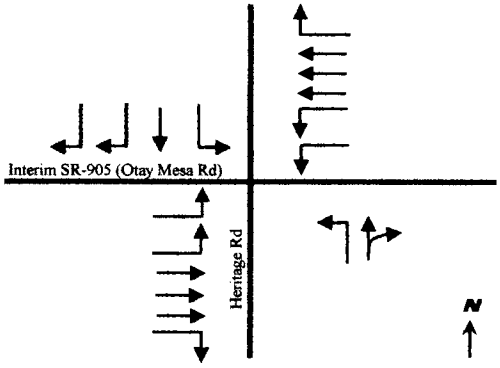
Splits and Phases: 67: Lone Star Rd (Paseo De La Fuente) & Alta Rd



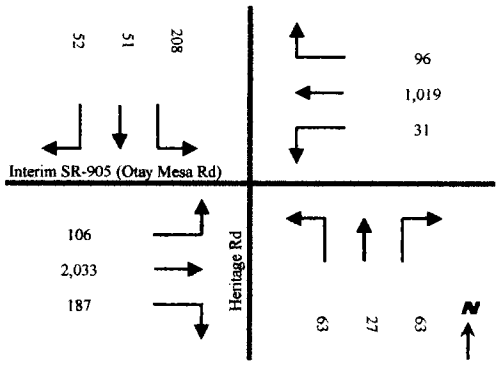
Existing - ILV Analysis

Date of Analysis:	March 19, 2011	Intersection:	Otay Mesa Rd @ Heritage Rd
Analyst:	*VSH*	Peak Hour Analyzed:	AM Peak Hour
Condition Analyzed:	Existing		

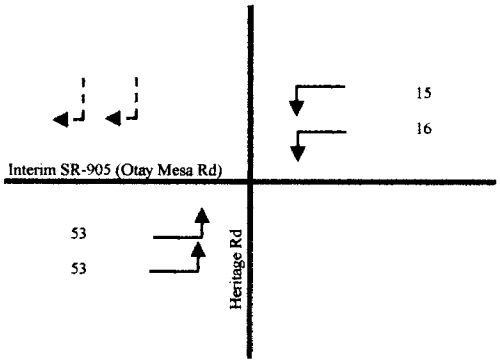
LANE GEOMETRY



TRAFFIC VOLUMES

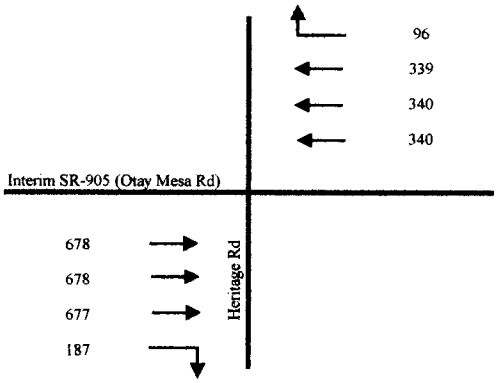


PHASE 1



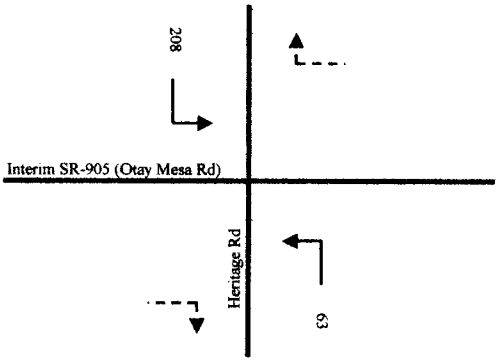
Phase 1 Critical ILV: 53

PHASE 2



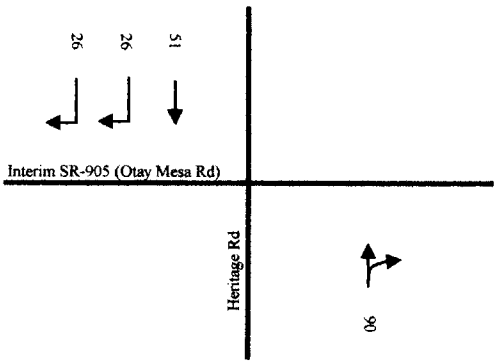
Phase 2 Critical ILV: 678

PHASE 3



Phase 3 Critical ILV: 208

PHASE 4



Phase 4 Critical ILV: 90

GRAND TOTAL ILV: **1,029**

OPERATING CONDITION **STABLE**

LEGEND

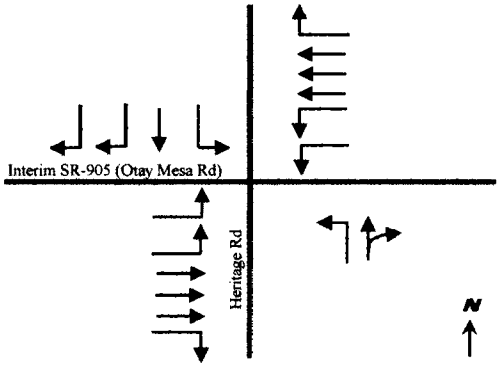
<1200 ILV = STABLE FLOW

1200 - 1500 ILV/HR = UNSTABLE FLOW

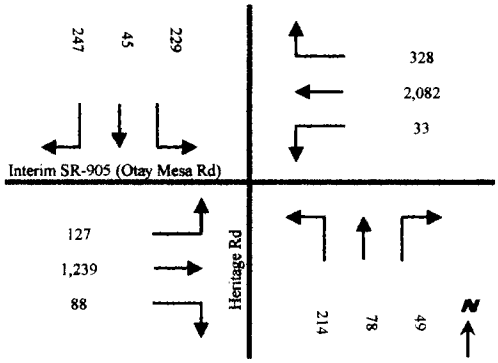
> 1500 ILV/HR = OVER CAPACITY

Date of Analysis:	March 19, 2011	Intersection:	Otay Mesa Rd @ Heritage Rd
Analyst:	VSH	Peak Hour Analyzed:	PM Peak Hour
Condition Analyzed:	Existing		

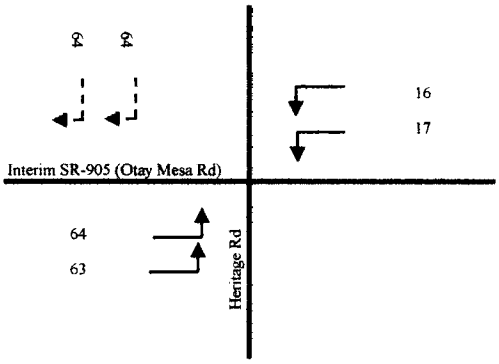
LANE GEOMETRY



TRAFFIC VOLUMES

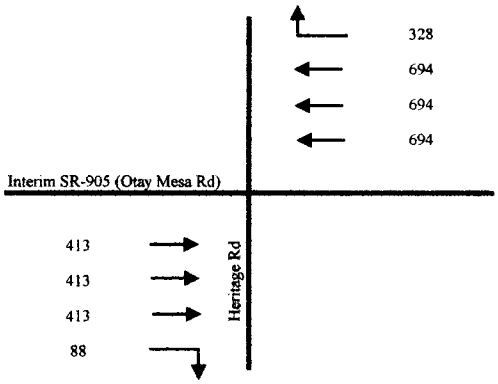


PHASE 1



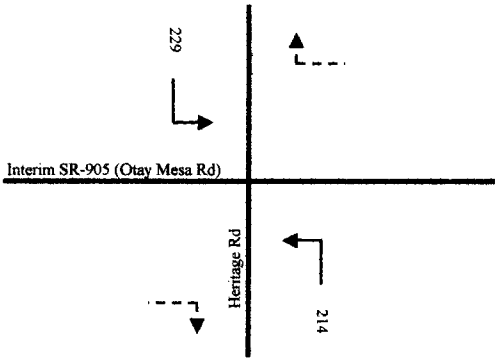
Phase 1 Critical ILV: 64

PHASE 2



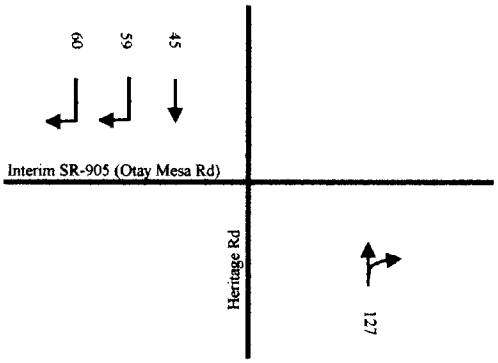
Phase 2 Critical ILV: 694

PHASE 3



Phase 3 Critical ILV: 229

PHASE 4



Phase 4 Critical ILV: 127

GRAND TOTAL ILV: 1,114

OPERATING CONDITION STABLE

LEGEND

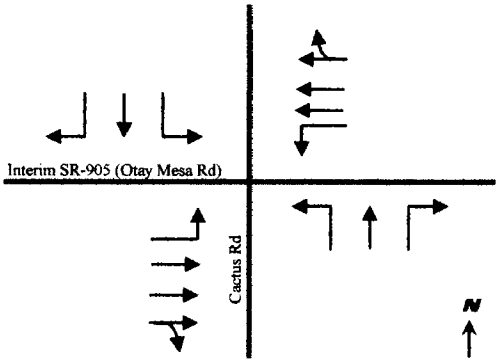
<1200 ILV = STABLE FLOW

1200 - 1500 ILV/HR = UNSTABLE FLOW

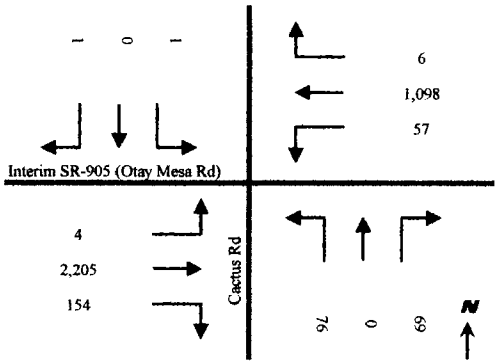
> 1500 ILV/HR = OVER CAPACITY

Date of Analysis:	March 19, 2011	Intersection:	Otay Mesa Rd @ Cactus Rd
Analyst:	*USH*	Peak Hour Analyzed:	AM Peak Hour
Condition Analyzed:	Existing		

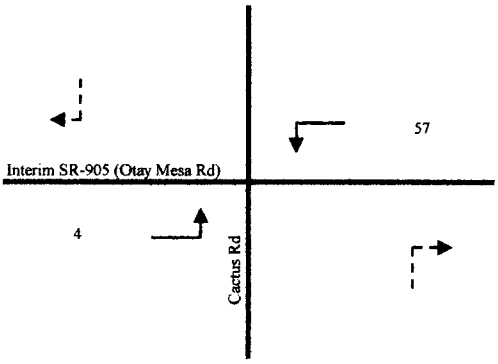
LANE GEOMETRY



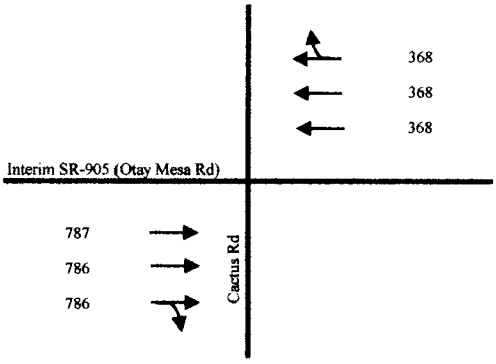
TRAFFIC VOLUMES



PHASE 1



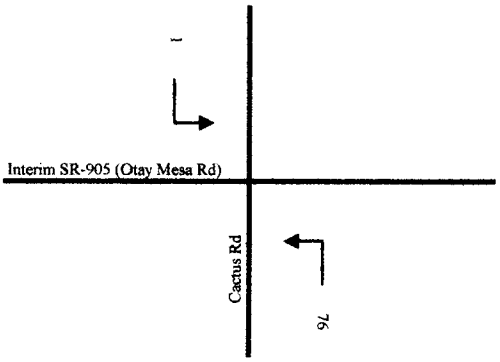
PHASE 2



Phase 1 Critical ILV: 57

Phase 2 Critical ILV: 786

PHASE 3



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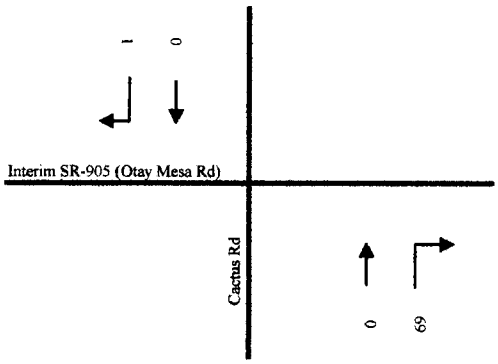


Phase 3 Critical ILV: 76

Phase 4 Critical ILV: 69

GRAND TOTAL ILV: **988**

OPERATING CONDITION **STABLE**

LEGEND

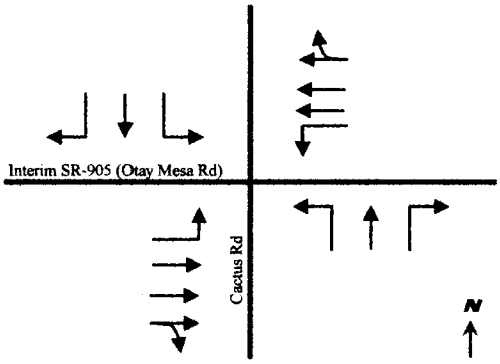
<1200 ILV = STABLE FLOW

1200 - 1500 ILV/HR = UNSTABLE FLOW

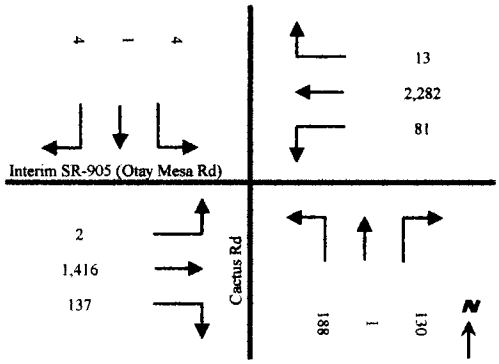
> 1500 ILV/HR = OVER CAPACITY

Date of Analysis:	March 19, 2011	Intersection:	Otay Mesa Rd @ Cactus Rd
Analyst:	VSM	Peak Hour Analyzed:	PM Peak Hour
Condition Analyzed:	Existing		

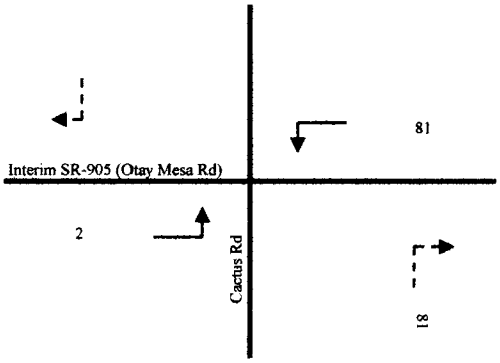
LANE GEOMETRY



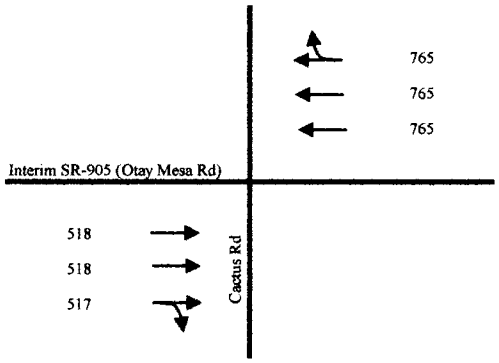
TRAFFIC VOLUMES



PHASE 1



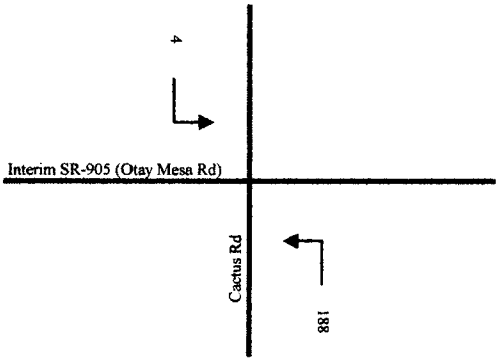
PHASE 2



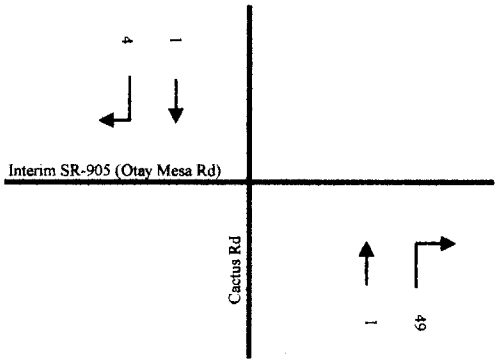
Phase 1 Critical ILV: 81

Phase 2 Critical ILV: 765

PHASE 3



PHASE 4



Phase 3 Critical ILV: 188

Phase 4 Critical ILV: 49

GRAND TOTAL ILV: **1,083**

OPERATING CONDITION **STABLE**

LEGEND

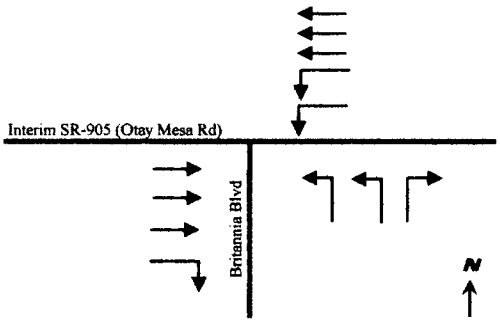
<1200 ILV = STABLE FLOW

1200 - 1500 ILV/HR = UNSTABLE FLOW

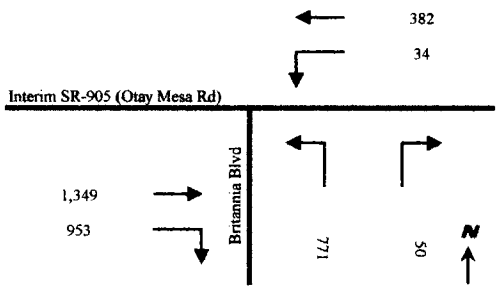
> 1500 ILV/HR = OVER CAPACITY

Date of Analysis:	March 19, 2011	Intersection:	Otay Mesa Rd @ Britannia Blvd
Analyst:	*WFH*	Peak Hour Analyzed:	AM Peak Hour
Condition Analyzed:	Existing		

LANE GEOMETRY



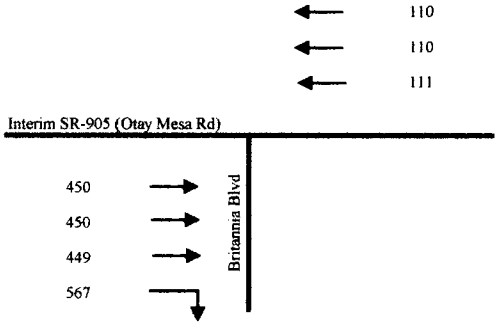
TRAFFIC VOLUMES



PHASE 1

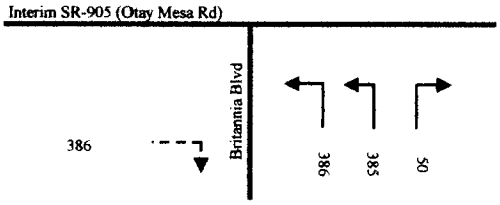
Phase 1 Critical ILV: 17

PHASE 2



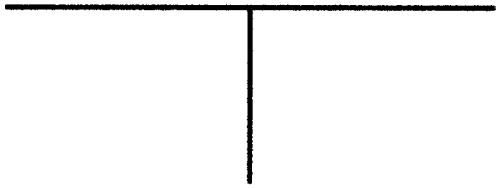
Phase 2 Critical ILV: 567

PHASE 3



Phase 3 Critical ILV: 386

PHASE 4



Phase 4 Critical ILV:

GRAND TOTAL ILV: **970**

OPERATING CONDITION **STABLE**

LEGEND

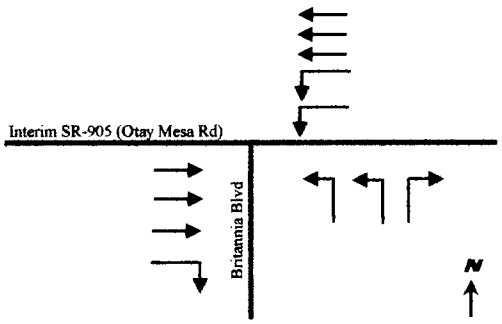
<1200 ILV = STABLE FLOW

1200 - 1500 ILV/HR = UNSTABLE FLOW

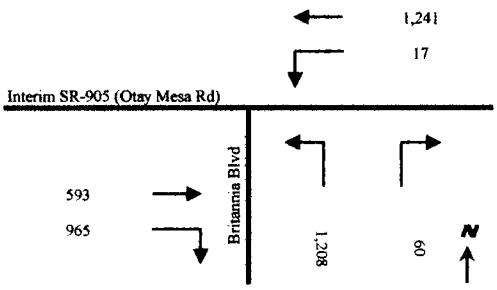
> 1500 ILV/HR = OVER CAPACITY

Date of Analysis:	March 19, 2011	Intersection:	Otay Mesa Rd @ Britannia Blvd
Analyst:	VSH	Peak Hour Analyzed:	PM Peak Hour
Condition Analyzed:	Existing		

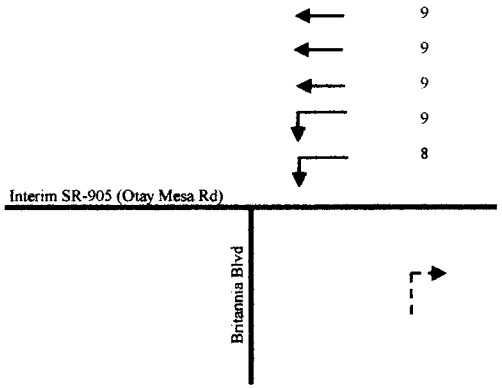
LANE GEOMETRY



TRAFFIC VOLUMES

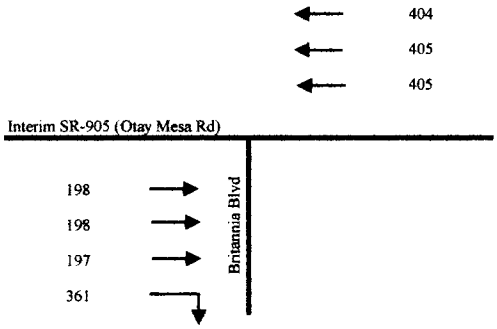


PHASE 1



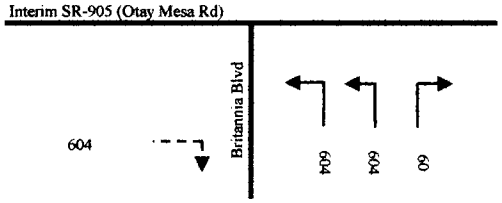
Phase 1 Critical ILV: 9

PHASE 2



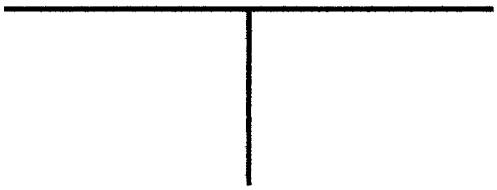
Phase 2 Critical ILV: 405

PHASE 3



Phase 3 Critical ILV: 604

PHASE 4



Phase 4 Critical ILV:

GRAND TOTAL ILV: **1,018**

OPERATING CONDITION **STABLE**

LEGEND

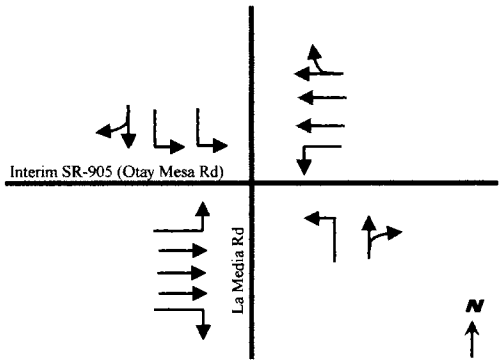
<1200 ILV = STABLE FLOW

1200 - 1500 ILV/HR = UNSTABLE FLOW

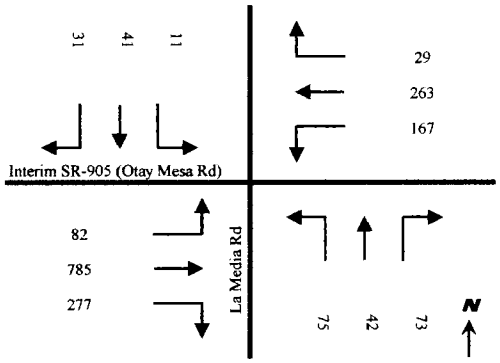
> 1500 ILV/HR = OVER CAPACITY

Date of Analysis:	March 19, 2011	Intersection:	Otay Mesa Rd @ La Media Rd
Analyst:	*VSH*	Peak Hour Analyzed:	AM Peak Hour
Condition Analyzed:	Existing		

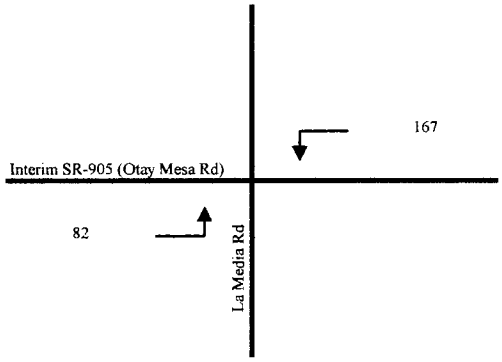
LANE GEOMETRY



TRAFFIC VOLUMES

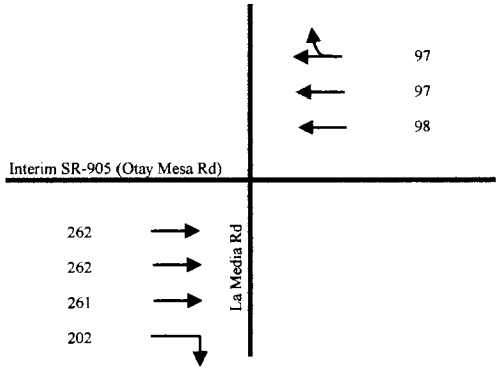


PHASE 1



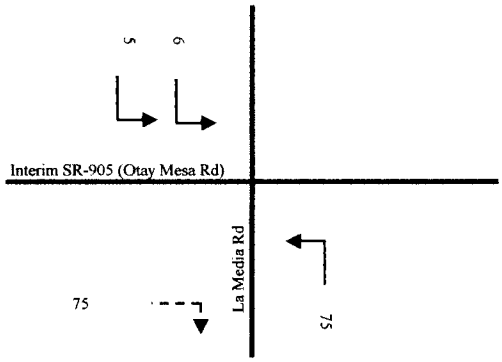
Phase 1 Critical ILV: 167

PHASE 2



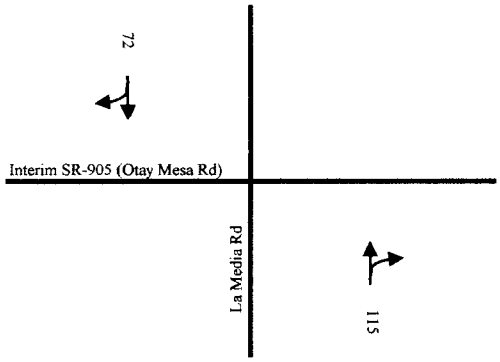
Phase 2 Critical ILV: 262

PHASE 3



Phase 3 Critical ILV: 75

PHASE 4



Phase 4 Critical ILV: 115

GRAND TOTAL ILV: 619

OPERATING CONDITION STABLE

LEGEND

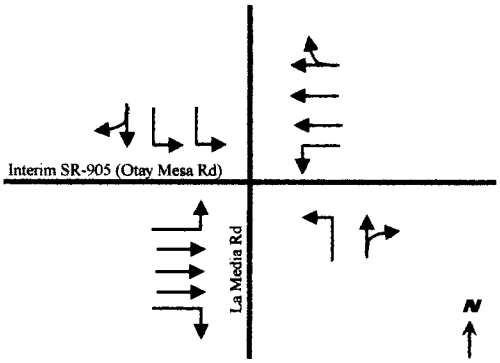
<1200 ILV = STABLE FLOW

1200 - 1500 ILV/HR = UNSTABLE FLOW

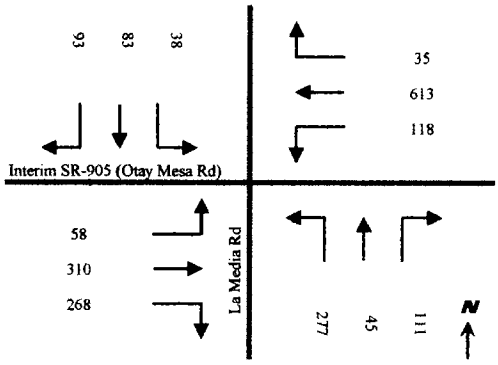
> 1500 ILV/HR = OVER CAPACITY

Date of Analysis:	March 19, 2011	Intersection:	Otay Mesa Rd @ La Media Rd
Analyst:	USH	Peak Hour Analyzed:	PM Peak Hour
Condition Analyzed:	Existing		

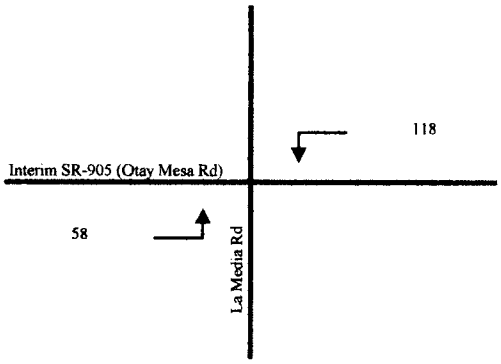
LANE GEOMETRY



TRAFFIC VOLUMES

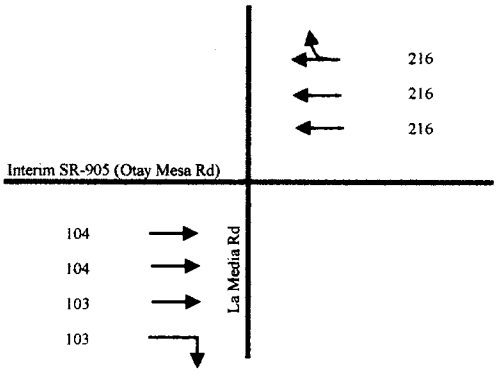


PHASE 1



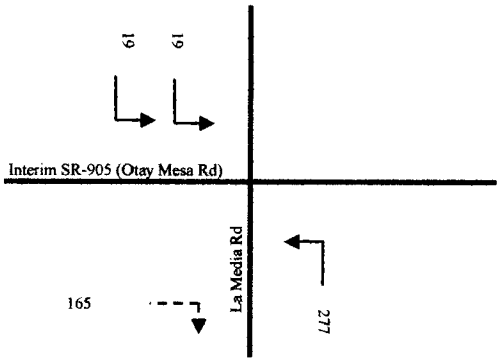
Phase 1 Critical ILV: 118

PHASE 2



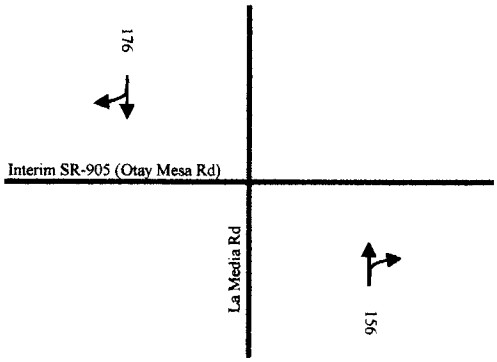
Phase 2 Critical ILV: 216

PHASE 3



Phase 3 Critical ILV: 277

PHASE 4



Phase 4 Critical ILV: 176

GRAND TOTAL ILV: 787

OPERATING CONDITION STABLE

LEGEND

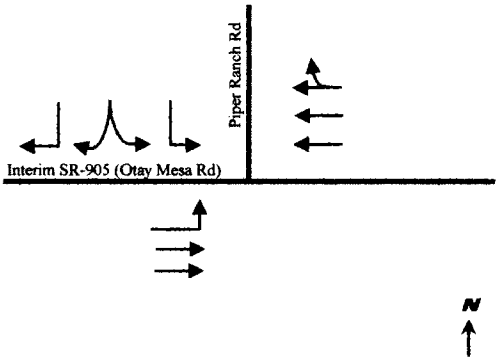
<1200 ILV = STABLE FLOW

1200 - 1500 ILV/HR = UNSTABLE FLOW

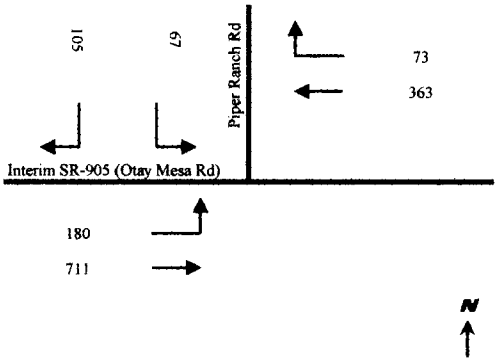
> 1500 ILV/HR = OVER CAPACITY

Date of Analysis:	March 19, 2011	Intersection:	Otay Mesa Rd @ Piper Ranch Rd
Analyst:	*USH*	Peak Hour Analyzed:	AM Peak Hour
Condition Analyzed:	Existing		

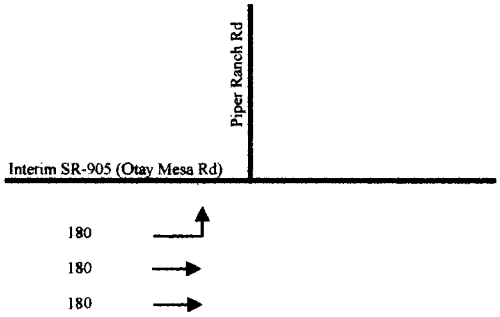
LANE GEOMETRY



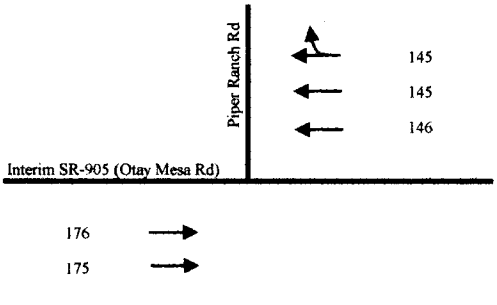
TRAFFIC VOLUMES



PHASE 1



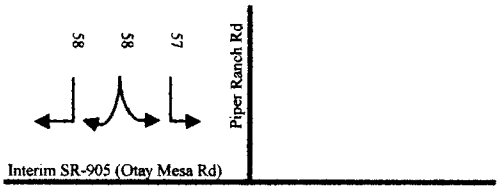
PHASE 2



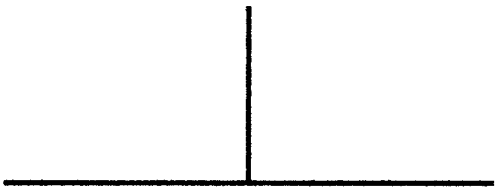
Phase 1 Critical ILV: 180

Phase 2 Critical ILV: 176

PHASE 3



PHASE 4



Phase 3 Critical ILV: 58

Phase 4 Critical ILV:

GRAND TOTAL ILV: **414**

OPERATING CONDITION **STABLE**

LEGEND

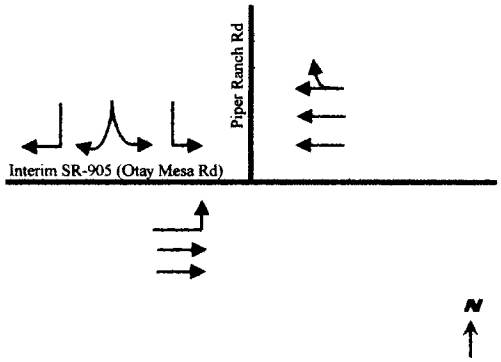
<1200 ILV = STABLE FLOW

1200 - 1500 ILV/HR = UNSTABLE FLOW

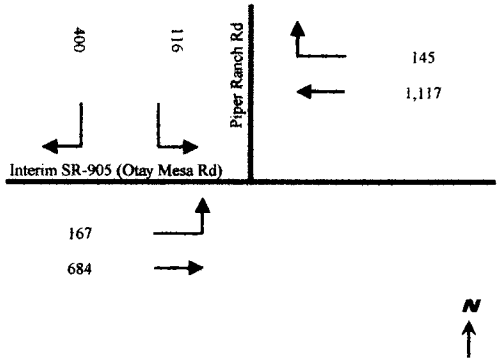
> 1500 ILV/HR = OVER CAPACITY

Date of Analysis:	March 19, 2011	Intersection:	Otay Mesa Rd @ Piper Ranch Rd
Analyst:	VJH	Peak Hour Analyzed:	PM Peak Hour
Condition Analyzed:	Existing		

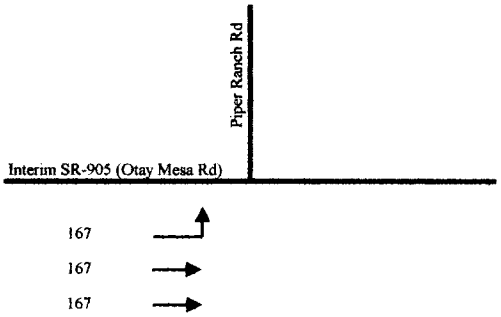
LANE GEOMETRY



TRAFFIC VOLUMES



PHASE 1



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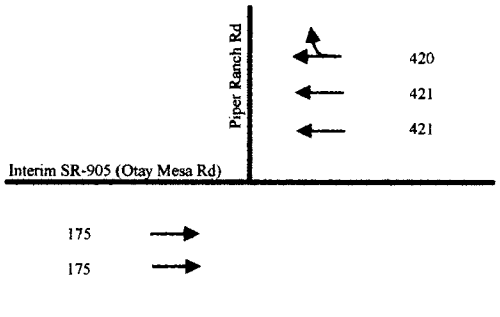
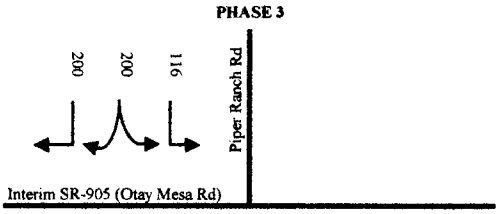
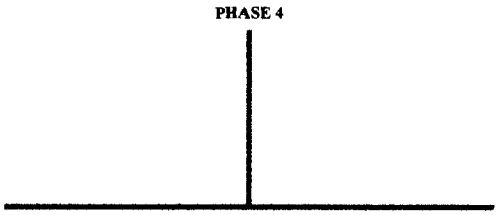


Phase 1 Critical ILV:	167	Phase 2 Critical ILV:	421

PHASE 3



PHASE 4



Phase 3 Critical ILV:	200	Phase 4 Critical ILV:	

GRAND TOTAL ILV:	**788**
OPERATING CONDITION	**STABLE**

LEGEND

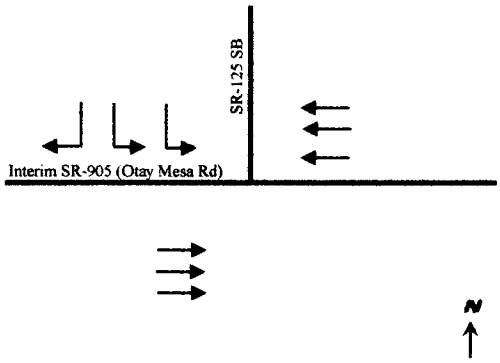
<1200 ILV = STABLE FLOW

1200 - 1500 ILV/HR = UNSTABLE FLOW

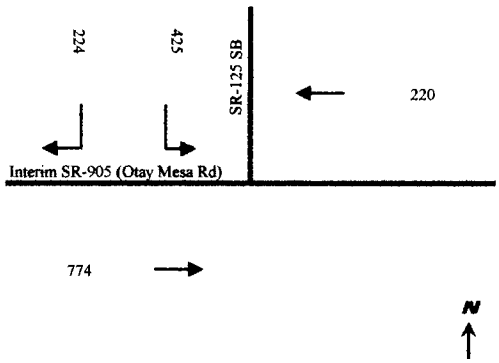
> 1500 ILV/HR = OVER CAPACITY

Date of Analysis:	March 19, 2011	Intersection:	Otay Mesa Rd @SR-125 SB
Analyst:	VJH	Peak Hour Analyzed:	AM Peak Hour
Condition Analyzed:	Existing		

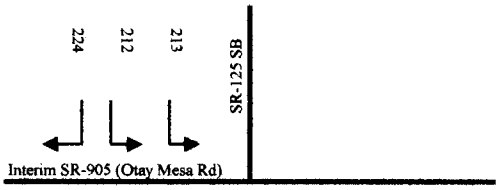
LANE GEOMETRY



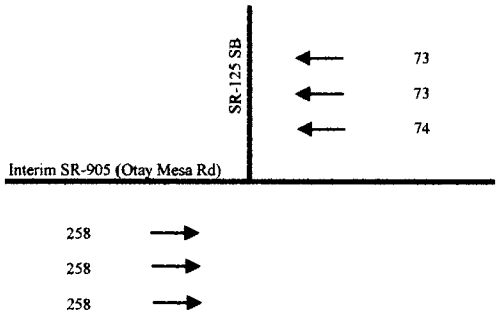
TRAFFIC VOLUMES



PHASE 1



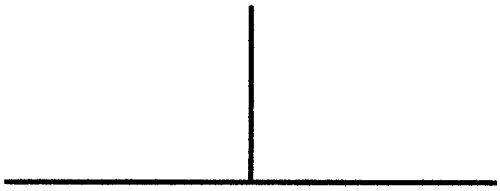
PHASE 2



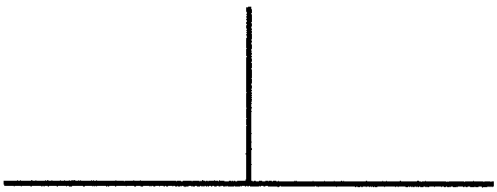
Phase 1 Critical ILV: 224

Phase 2 Critical ILV: 258

PHASE 3



PHASE 4



Phase 3 Critical ILV:

Phase 4 Critical ILV:

GRAND TOTAL ILV: 482

OPERATING CONDITION STABLE

LEGEND

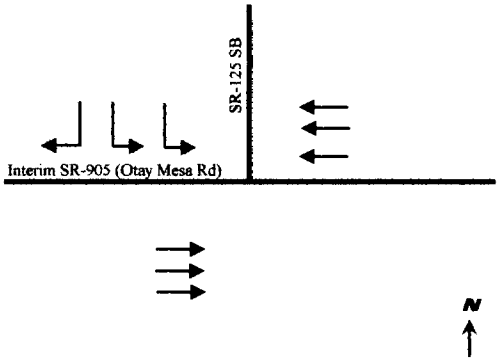
<1200 ILV = STABLE FLOW

1200 - 1500 ILV/HR = UNSTABLE FLOW

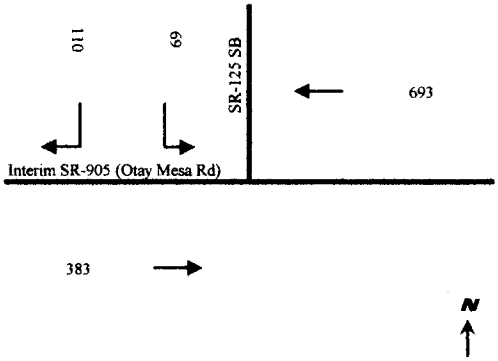
> 1500 ILV/HR = OVER CAPACITY

Date of Analysis:	March 19, 2011	Intersection:	Otay Mesa Rd @SR-125 SB
Analyst:	*VJH*	Peak Hour Analyzed:	PM Peak Hour
Condition Analyzed:	Existing		

LANE GEOMETRY

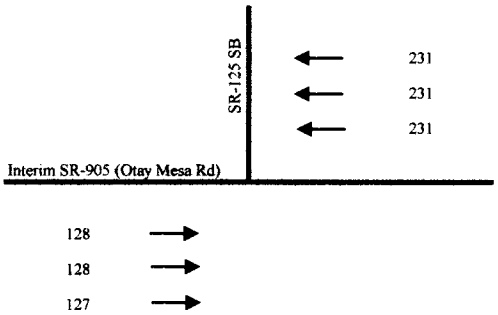


TRAFFIC VOLUMES



PHASE 1

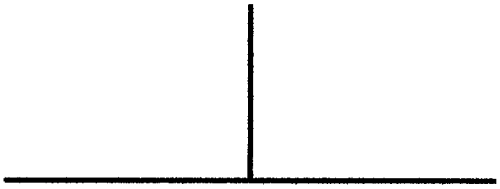
PHASE 2



Phase 1 Critical ILV: 110

Phase 2 Critical ILV: 231

PHASE 3



PHASE 4

Phase 3 Critical ILV:

Phase 4 Critical ILV:

GRAND TOTAL ILV: 341

OPERATING CONDITION STABLE

LEGEND

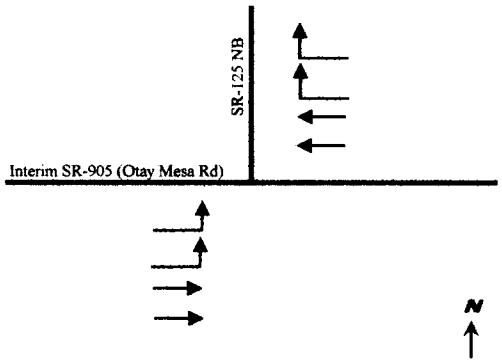
<1200 ILV = STABLE FLOW

1200 - 1500 ILV/HR = UNSTABLE FLOW

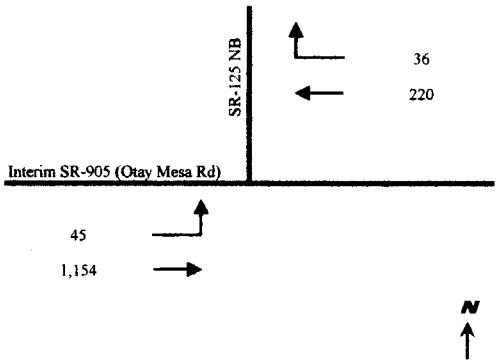
> 1500 ILV/HR = OVER CAPACITY

Date of Analysis:	March 19, 2011	Intersection:	Otay Mesa Rd @ SR-125 NB
Analyst:	VSH	Peak Hour Analyzed:	AM Peak Hour
Condition Analyzed:	Existing		

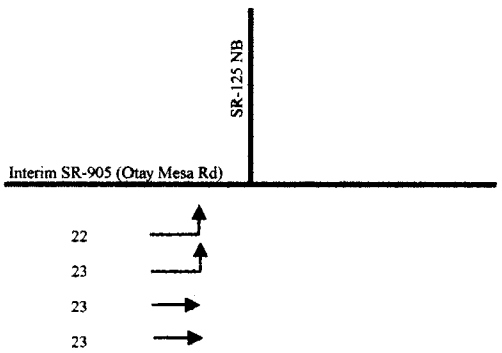
LANE GEOMETRY



TRAFFIC VOLUMES

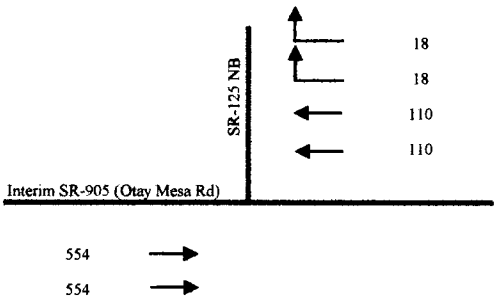


PHASE 1



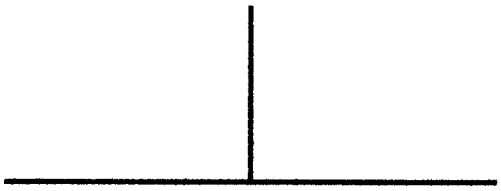
Phase 1 Critical ILV: 23

PHASE 2



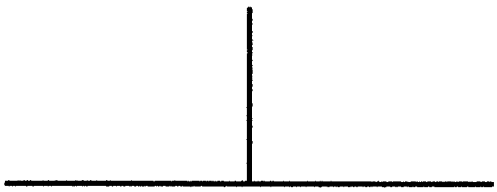
Phase 2 Critical ILV: 554

PHASE 3



Phase 3 Critical ILV:

PHASE 4



Phase 4 Critical ILV:

GRAND TOTAL ILV: 577

OPERATING CONDITION STABLE

LEGEND

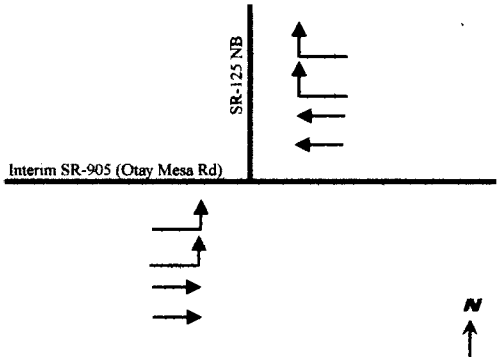
<1200 ILV = STABLE FLOW

1200 - 1500 ILV/HR = UNSTABLE FLOW

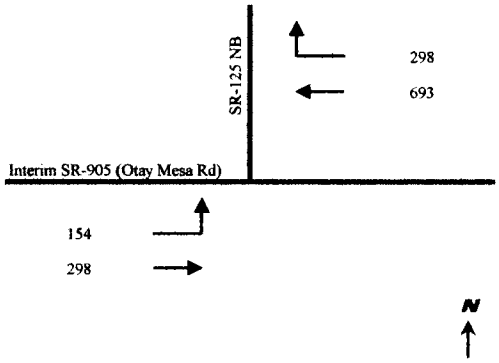
> 1500 ILV/HR = OVER CAPACITY

Date of Analysis:	March 19, 2011	Intersection:	Otay Mesa Rd @ SR-125 NB
Analyst:	BSH	Peak Hour Analyzed:	PM Peak Hour
Condition Analyzed:	Existing		

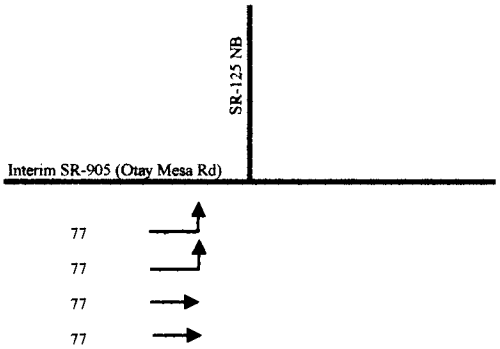
LANE GEOMETRY



TRAFFIC VOLUMES

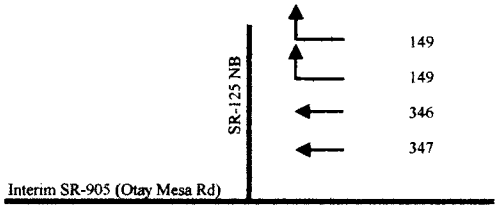


PHASE 1



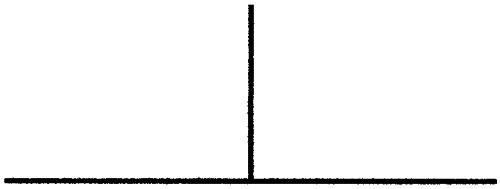
Phase 1 Critical ILV: 77

PHASE 2



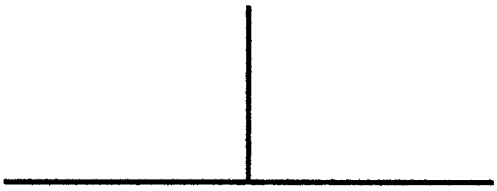
Phase 2 Critical ILV: 347

PHASE 3



Phase 3 Critical ILV:

PHASE 4



Phase 4 Critical ILV:

GRAND TOTAL ILV: 424

OPERATING CONDITION STABLE

LEGEND

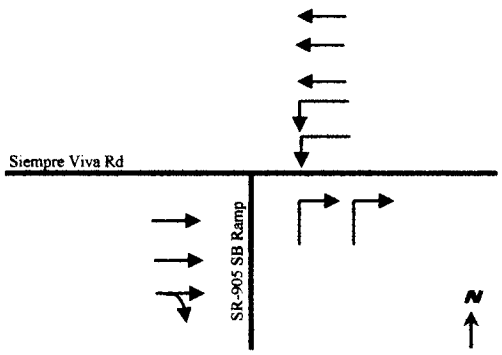
<1200 ILV = STABLE FLOW

1200 - 1500 ILV/HR = UNSTABLE FLOW

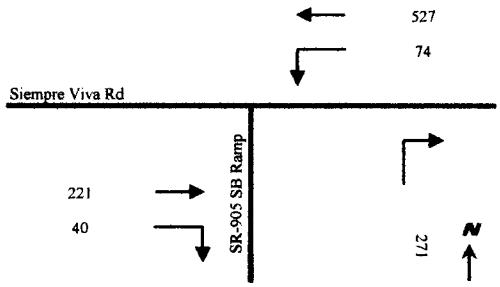
> 1500 ILV/HR = OVER CAPACITY

Date of Analysis:	March 19, 2011	Intersection:	Siempre Viva Rd @ SR-905 SB Ramp
Analyst:	VSH	Peak Hour Analyzed:	AM Peak Hour
Condition Analyzed:	Existing		

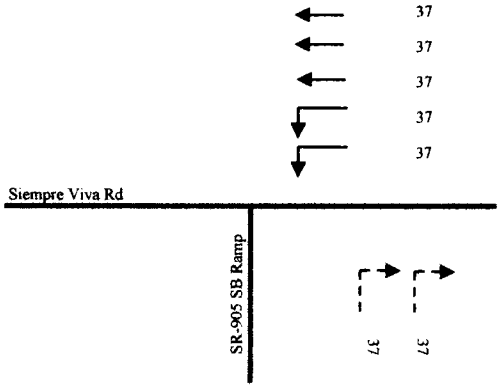
LANE GEOMETRY



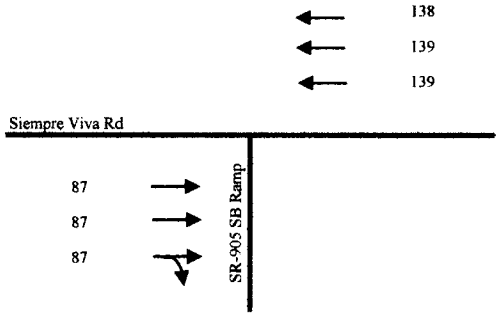
TRAFFIC VOLUMES



PHASE 1



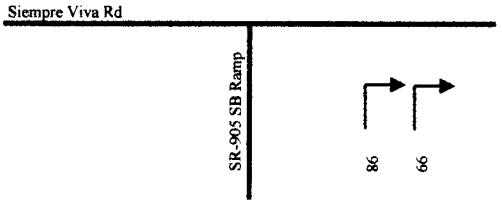
PHASE 2



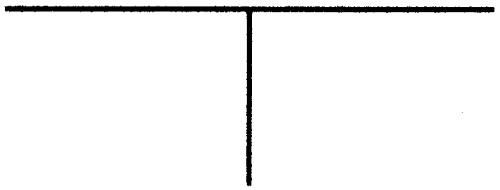
Phase 1 Critical ILV: 37

Phase 2 Critical ILV: 139

PHASE 3



PHASE 4



Phase 3 Critical ILV: 99

Phase 4 Critical ILV:

GRAND TOTAL ILV: 275

OPERATING CONDITION STABLE

LEGEND

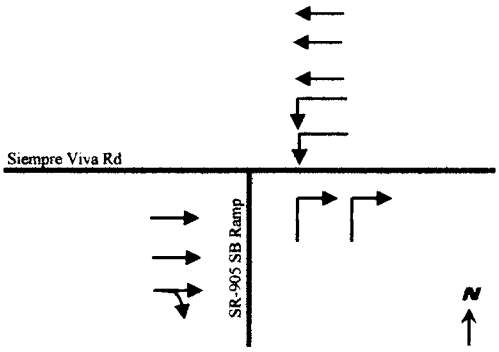
<1200 ILV = STABLE FLOW

1200 - 1500 ILV/HR = UNSTABLE FLOW

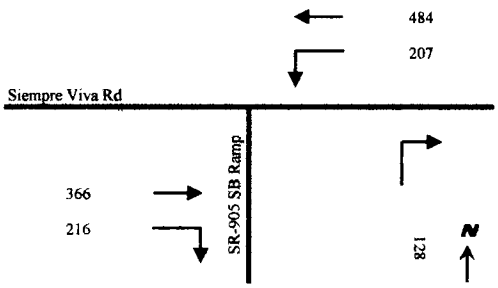
> 1500 ILV/HR = OVER CAPACITY

Date of Analysis:	March 19, 2011	Intersection:	Siempre Viva Rd @ SR-905 SB Ramp
Analyst:	VSH	Peak Hour Analyzed:	PM Peak Hour
Condition Analyzed:	Existing		

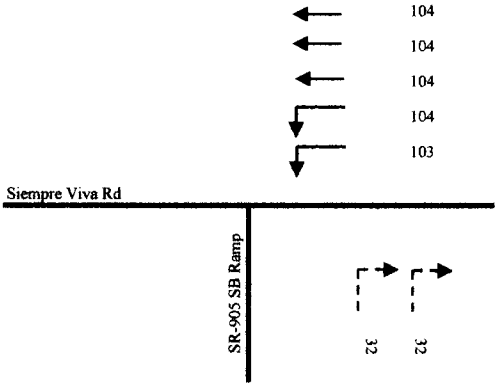
LANE GEOMETRY



TRAFFIC VOLUMES

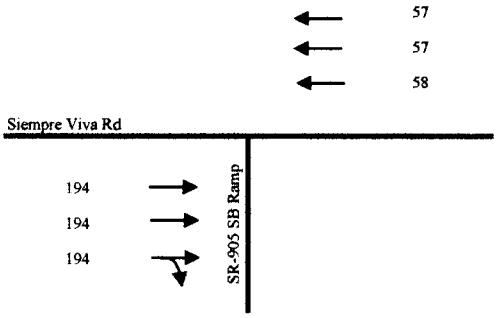


PHASE 1



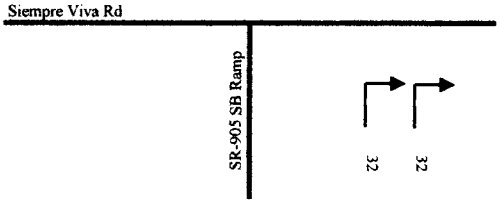
Phase 1 Critical ILV: 104

PHASE 2



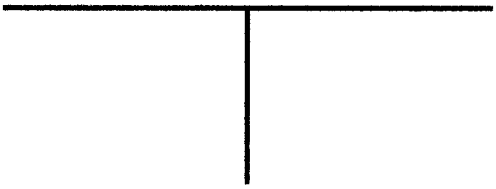
Phase 2 Critical ILV: 194

PHASE 3



Phase 3 Critical ILV: 32

PHASE 4



Phase 4 Critical ILV:

GRAND TOTAL ILV: **330**

OPERATING CONDITION **STABLE**

LEGEND

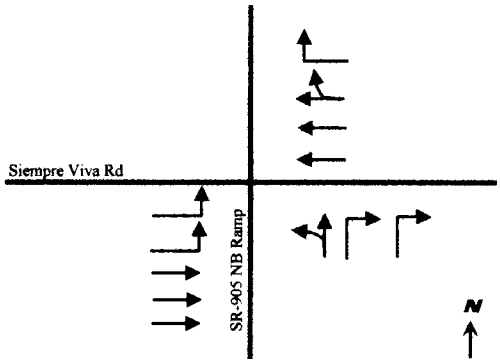
<1200 ILV = STABLE FLOW

1200 - 1500 ILV/HR = UNSTABLE FLOW

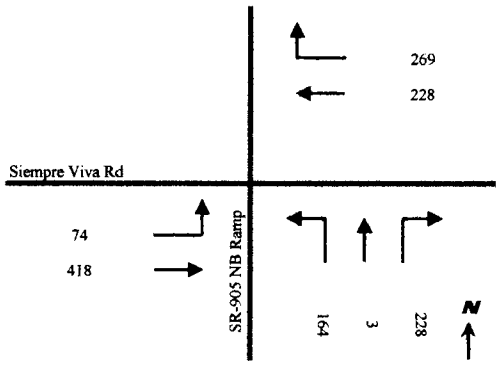
> 1500 ILV/HR = OVER CAPACITY

Date of Analysis:	March 19, 2011	Intersection:	Siempre Viva Rd & SR-905 NB
Analyst:	VJH	Peak Hour Analyzed:	AM Peak Hour
Condition Analyzed:	Existing		

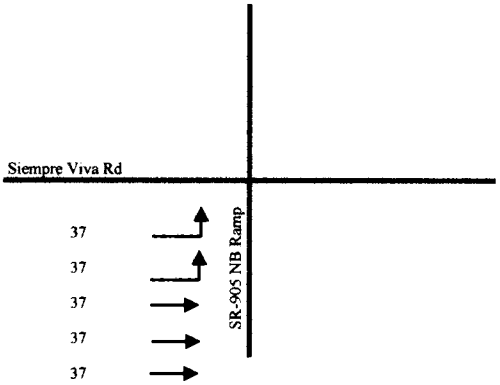
LANE GEOMETRY



TRAFFIC VOLUMES

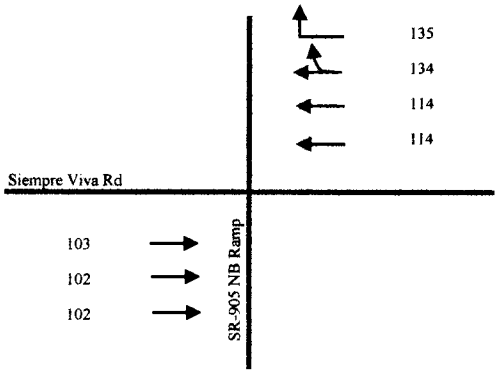


PHASE 1



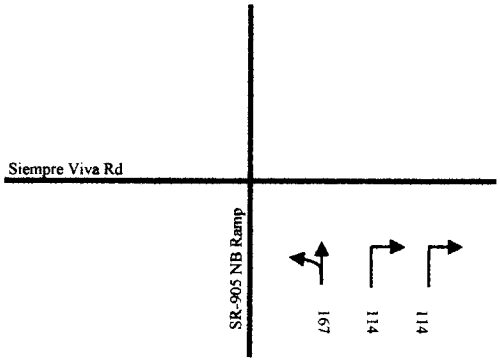
Phase 1 Critical ILV: 37

PHASE 2



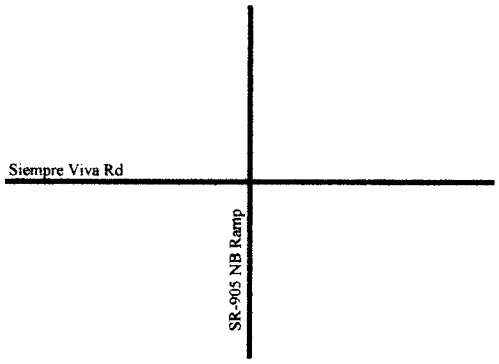
Phase 2 Critical ILV: 135

PHASE 3



Phase 3 Critical ILV: 167

PHASE 4



Phase 4 Critical ILV:

GRAND TOTAL ILV: **339**

OPERATING CONDITION **STABLE**

LEGEND

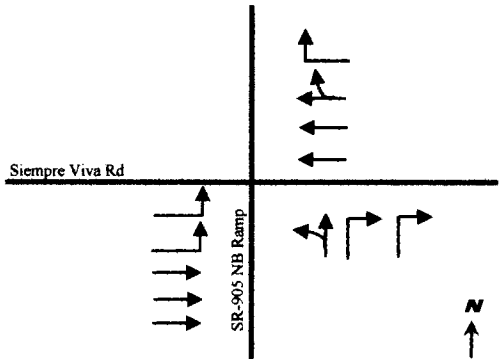
<1200 ILV = STABLE FLOW

1200 - 1500 ILV/HR = UNSTABLE FLOW

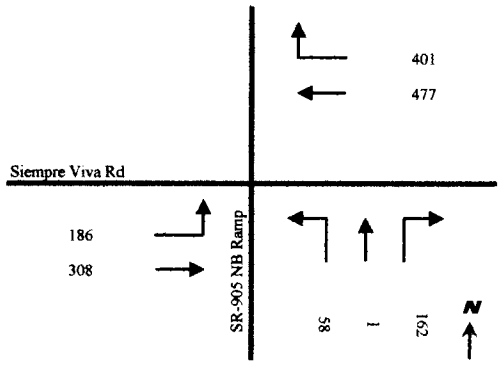
> 1500 ILV/HR = OVER CAPACITY

Date of Analysis:	March 19, 2011	Intersection:	Siempre Viva Rd & SR-905 NB
Analyst:	*VJK*	Peak Hour Analyzed:	PM Peak Hour
Condition Analyzed:	Existing		

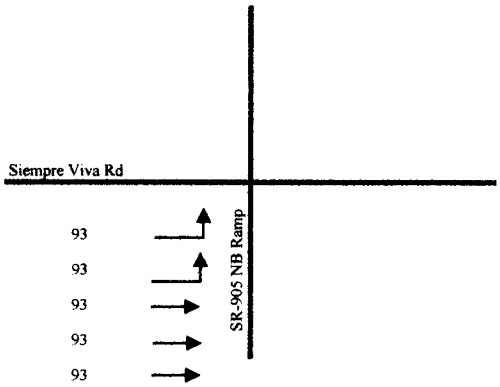
LANE GEOMETRY



TRAFFIC VOLUMES

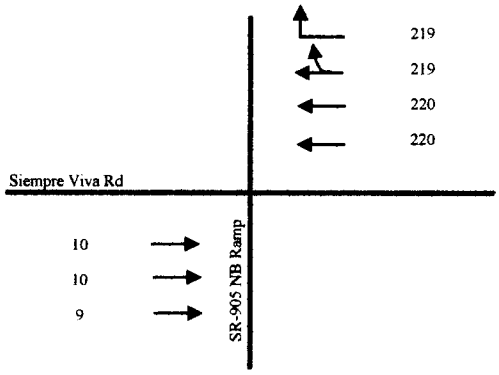


PHASE 1



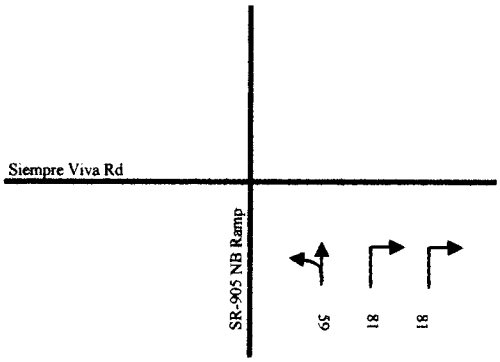
Phase 1 Critical ILV: 93

PHASE 2



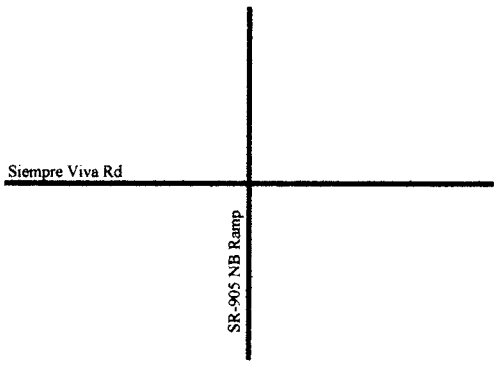
Phase 2 Critical ILV: 220

PHASE 3



Phase 3 Critical ILV: 81

PHASE 4



Phase 4 Critical ILV:

GRAND TOTAL ILV: **394**

OPERATING CONDITION **STABLE**

LEGEND

<1200 ILV = STABLE FLOW

1200 - 1500 ILV/HR = UNSTABLE FLOW

> 1500 ILV/HR = OVER CAPACITY

Existing – Queuing Summaries

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	129	2479	228	38	1243	117	77	110	254	62	63
v/c Ratio	0.57	0.74	0.17	0.37	0.40	0.09	0.41	0.88	1.08	0.47	0.25
Control Delay	79.2	16.2	0.6	71.6	9.8	0.8	71.6	89.8	141.5	79.2	16.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.2	16.2	0.6	71.6	9.8	0.8	71.6	89.8	141.5	79.2	16.6
Queue Length 50th (ft)	64	540	0	19	172	9	73	56	~280	60	0
Queue Length 95th (ft)	92	489	10	m32	198	0	120	#145	#402	100	21
Internal Link Dist (ft)		1361			2600			2637		1263	
Turn Bay Length (ft)	550		510	550		550	200		440		440
Base Capacity (vph)	235	3359	1356	102	3132	1306	189	125	235	169	310
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.74	0.17	0.37	0.40	0.09	0.41	0.88	1.08	0.37	0.20

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	135	1318	94	35	2215	349	228	135	244	48	263
v/c Ratio	0.61	0.46	0.10	0.15	0.78	0.27	0.68	0.71	0.92	0.43	0.66
Control Delay	85.8	20.6	3.3	62.1	24.1	3.1	74.0	84.5	108.6	87.2	42.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	85.8	20.6	3.3	62.1	24.1	3.1	74.0	84.5	108.6	87.2	42.6
Queue Length 50th (ft)	76	304	0	19	556	62	235	130	268	52	90
Queue Length 95th (ft)	#176	369	29	m21	567	94	332	203	#437	99	132
Internal Link Dist (ft)		1361			2600			2637		1263	
Turn Bay Length (ft)	550		510	550		550	200		440		440
Base Capacity (vph)	223	2874	985	266	2836	1296	335	246	271	258	396
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.46	0.10	0.13	0.78	0.27	0.68	0.55	0.90	0.19	0.66

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBR	SBL	SBR
Lane Group Flow (vph)	5	2912	70	1363	94	85	1	1
v/c Ratio	0.03	0.81	0.59	0.36	0.59	0.27	0.01	0.00
Control Delay	48.5	7.7	78.6	11.4	80.6	2.0	64.0	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.5	7.7	78.6	11.4	80.6	2.0	64.0	0.0
Queue Length 50th (ft)	4	128	72	14	91	0	1	0
Queue Length 95th (ft)	m6	m712	m84	455	133	0	6	0
Internal Link Dist (ft)		2600		2650				
Turn Bay Length (ft)	550		550		250	120	25	25
Base Capacity (vph)	155	3588	128	3920	239	398	202	316
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.81	0.55	0.35	0.39	0.21	0.00	0.00

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	2	1652	86	2442	200	1	138	4	1	4
v/c Ratio	0.02	0.60	0.53	0.76	0.60	0.00	0.34	0.03	0.01	0.03
Control Delay	31.5	14.8	47.2	15.7	37.8	24.0	7.2	36.5	36.0	24.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.5	14.8	47.2	15.7	37.8	24.0	7.2	36.5	36.0	24.5
Queue Length 50th (ft)	1	142	45	190	97	0	0	2	1	0
Queue Length 95th (ft)	m2	371	m67	#722	150	4	42	12	6	10
Internal Link Dist (ft)		2600		2650		2628			1880	
Turn Bay Length (ft)	550		550		250		120	25		25
Base Capacity (vph)	105	2749	169	3207	351	470	502	190	366	314
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.60	0.51	0.76	0.57	0.00	0.27	0.02	0.00	0.01

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1645	1162	41	466	940	61
v/c Ratio	0.64	0.79	0.35	0.16	0.95	0.12
Control Delay	15.2	12.9	42.4	3.6	46.2	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.2	12.9	42.4	3.6	46.2	6.7
Queue Length 50th (ft)	302	865	21	25	222	0
Queue Length 95th (ft)	323	662	48	15	#288	21
Internal Link Dist (ft)	2650			5401	660	
Turn Bay Length (ft)		540	550			
Base Capacity (vph)	2566	1471	116	2907	994	502
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.79	0.35	0.16	0.95	0.12

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	611	995	18	1279	1245	62
v/c Ratio	0.32	0.65	0.19	0.61	0.78	0.08
Control Delay	9.8	11.1	28.8	10.1	22.5	3.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.8	11.1	28.8	10.1	22.5	3.2
Queue Length 50th (ft)	69	640	9	115	243	0
Queue Length 95th (ft)	39	308	m20	125	317	18
Internal Link Dist (ft)	2650			5401	660	
Turn Bay Length (ft)		540	550			
Base Capacity (vph)	1914	1531	95	2108	1766	844
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.65	0.19	0.61	0.70	0.07

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	94	902	318	192	335	86	132	13	83
v/c Ratio	0.45	0.49	0.33	0.64	0.15	0.38	0.26	0.07	0.39
Control Delay	22.4	6.7	3.6	31.1	5.7	34.6	10.5	35.2	24.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.4	6.7	3.6	31.1	5.7	34.6	10.5	35.2	24.8
Queue Length 50th (ft)	49	48	19	79	9	38	17	3	21
Queue Length 95th (ft)	m67	124	73	152	61	72	54	11	55
Internal Link Dist (ft)		5401			908		520		2547
Turn Bay Length (ft)	550		500	550				150	
Base Capacity (vph)	224	1852	972	337	2224	233	526	181	394
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.49	0.33	0.57	0.15	0.37	0.25	0.07	0.21

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	64	344	298	131	720	308	173	42	195
v/c Ratio	0.43	0.23	0.29	0.56	0.40	0.78	0.26	0.24	0.66
Control Delay	43.5	9.6	1.3	33.7	11.9	44.1	6.9	42.1	33.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.5	9.6	1.3	33.7	11.9	44.1	6.9	42.1	33.9
Queue Length 50th (ft)	48	33	5	65	78	151	18	11	67
Queue Length 95th (ft)	65	65	4	m128	103	233	54	27	129
Internal Link Dist (ft)		5401			908		520		2547
Turn Bay Length (ft)	550		500	550				150	
Base Capacity (vph)	154	1479	1038	253	1822	470	744	175	376
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.23	0.29	0.52	0.40	0.66	0.23	0.24	0.52

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	207	817	501	137	61
v/c Ratio	0.42	0.29	0.22	0.36	0.30
Control Delay	11.6	0.8	10.2	21.2	13.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	11.6	0.8	10.2	21.2	13.3
Queue Length 50th (ft)	94	7	30	17	0
Queue Length 95th (ft)	28	13	71	40	32
Internal Link Dist (ft)		1591	1489	1149	
Turn Bay Length (ft)	600				125
Base Capacity (vph)	498	2810	2309	972	451
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.42	0.29	0.22	0.14	0.14

Intersection Summary

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	169	691	1274	319	202
v/c Ratio	0.41	0.25	0.50	0.58	0.59
Control Delay	35.3	2.2	10.9	17.3	12.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	35.3	2.2	10.9	17.3	12.5
Queue Length 50th (ft)	96	16	111	29	0
Queue Length 95th (ft)	119	30	166	63	62
Internal Link Dist (ft)		1591	1489	1149	
Turn Bay Length (ft)	600				125
Base Capacity (vph)	411	2797	2568	937	504
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.41	0.25	0.50	0.34	0.40

Intersection Summary

Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	921	262	506	267
v/c Ratio	0.27	0.08	0.67	0.48
Control Delay	1.4	4.4	31.2	6.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	1.4	4.4	31.2	6.2
Queue Length 50th (ft)	8	1	113	0
Queue Length 95th (ft)	16	23	134	40
Internal Link Dist (ft)	1489	570	1201	
Turn Bay Length (ft)				
Base Capacity (vph)	3429	3429	1563	866
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.27	0.08	0.32	0.31

Intersection Summary

Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	430	779	78	124
v/c Ratio	0.10	0.18	0.24	0.49
Control Delay	1.1	1.5	36.5	15.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	1.1	1.5	36.5	15.5
Queue Length 50th (ft)	5	11	20	4
Queue Length 95th (ft)	14	39	38	51
Internal Link Dist (ft)	1489	570	1201	
Turn Bay Length (ft)				
Base Capacity (vph)	4296	4296	1533	770
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.10	0.18	0.05	0.16

Intersection Summary

Lane Group	EBL	EBT	WBT	WBR
Lane Group Flow (vph)	56	1425	272	44
v/c Ratio	0.18	0.40	0.09	0.02
Control Delay	37.7	0.4	0.5	0.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	37.7	0.4	0.5	0.0
Queue Length 50th (ft)	14	0	3	0
Queue Length 95th (ft)	m24	0	5	0
Internal Link Dist (ft)		570	460	
Turn Bay Length (ft)	430			400
Base Capacity (vph)	926	3539	3110	2454
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.06	0.40	0.09	0.02

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	WBR
Lane Group Flow (vph)	171	331	770	331
v/c Ratio	0.48	0.09	0.27	0.14
Control Delay	52.6	0.1	2.3	0.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	52.6	0.1	2.3	0.7
Queue Length 50th (ft)	50	0	36	1
Queue Length 95th (ft)	82	0	56	9
Internal Link Dist (ft)		570	460	
Turn Bay Length (ft)	430			400
Base Capacity (vph)	1206	3539	2834	2297
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.14	0.09	0.27	0.14

Intersection Summary

Lane Group	EBT	WBL	WBT	NBL
Lane Group Flow (vph)	1423	5	204	113
v/c Ratio	0.52	0.03	0.13	0.30
Control Delay	2.2	22.5	6.6	31.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	2.2	22.5	6.6	31.8
Queue Length 50th (ft)	4	2	50	24
Queue Length 95th (ft)	1	m8	72	41
Internal Link Dist (ft)	1003		1623	2621
Turn Bay Length (ft)		180		
Base Capacity (vph)	2722	221	1535	491
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.52	0.02	0.13	0.23

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBL	WBT	NBL
Lane Group Flow (vph)	326	15	687	403
v/c Ratio	0.16	0.05	0.50	0.67
Control Delay	3.9	22.4	5.1	39.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	3.9	22.4	5.1	39.2
Queue Length 50th (ft)	0	7	105	100
Queue Length 95th (ft)	33	m8	115	#178
Internal Link Dist (ft)	1003		1623	2621
Turn Bay Length (ft)		180		
Base Capacity (vph)	2333	304	1420	601
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.14	0.05	0.48	0.67

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	556	3	141	122	21
v/c Ratio	0.42	0.02	0.10	0.50	0.09
Control Delay	8.8	32.5	3.1	33.6	12.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	8.8	32.5	3.1	33.6	12.5
Queue Length 50th (ft)	99	1	13	49	0
Queue Length 95th (ft)	282	8	27	82	9
Internal Link Dist (ft)	1250		2512	2644	
Turn Bay Length (ft)		90		175	
Base Capacity (vph)	1334	175	1411	454	422
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.42	0.02	0.10	0.27	0.05

Intersection Summary

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	131	12	490	121	6
v/c Ratio	0.10	0.07	0.34	0.52	0.03
Control Delay	1.9	33.9	4.1	56.1	33.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	1.9	33.9	4.1	56.1	33.0
Queue Length 50th (ft)	5	6	59	68	1
Queue Length 95th (ft)	12	17	92	97	10
Internal Link Dist (ft)	1250		2512	2644	
Turn Bay Length (ft)		90		175	
Base Capacity (vph)	1313	284	1439	537	485
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.10	0.04	0.34	0.23	0.01

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	9	25	22	8	3	5	78	100	4	109
v/c Ratio	0.06	0.16	0.14	0.05	0.02	0.03	0.38	0.03	0.03	0.04
Control Delay	32.6	19.1	16.1	32.7	31.5	20.8	29.5	4.0	20.0	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.6	19.1	16.1	32.7	31.5	20.8	29.5	4.0	20.0	9.0
Queue Length 50th (ft)	4	2	0	4	1	0	22	2	2	16
Queue Length 95th (ft)	14	18	15	13	7	7	38	16	m4	28
Internal Link Dist (ft)		1210			1186			501		2644
Turn Bay Length (ft)	175			200			200		200	
Base Capacity (vph)	175	414	402	175	478	410	277	2896	175	2598
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.06	0.05	0.05	0.01	0.01	0.28	0.03	0.02	0.04

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	9	4	12	7	6	4	82	116	6	78
v/c Ratio	0.07	0.03	0.10	0.05	0.04	0.03	0.37	0.04	0.04	0.03
Control Delay	36.7	36.0	20.6	36.7	36.4	24.3	37.3	1.3	37.0	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.7	36.0	20.6	36.7	36.4	24.3	37.3	1.3	37.0	7.8
Queue Length 50th (ft)	5	2	0	4	3	0	46	0	3	4
Queue Length 95th (ft)	17	10	14	15	13	8	83	11	14	25
Internal Link Dist (ft)		1210			1186			501		2644
Turn Bay Length (ft)	175			200			200		200	
Base Capacity (vph)	200	453	394	200	477	408	303	3192	200	2668
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.01	0.03	0.04	0.01	0.01	0.27	0.04	0.03	0.03

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	20	138	49	286	14	8	66
v/c Ratio	0.12	0.05	0.30	0.10	0.09	0.05	0.33
Control Delay	33.0	8.1	38.0	7.9	32.8	20.9	24.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.0	8.1	38.0	7.9	32.8	20.9	24.8
Queue Length 50th (ft)	9	9	23	20	6	0	17
Queue Length 95th (ft)	28	20	55	38	22	13	51
Internal Link Dist (ft)		3989		1156		1019	1012
Turn Bay Length (ft)	270		200		300		
Base Capacity (vph)	160	2791	172	2938	408	378	417
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.05	0.28	0.10	0.03	0.02	0.16

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	48	264	64	333	29	21	108
v/c Ratio	0.28	0.10	0.36	0.12	0.19	0.13	0.48
Control Delay	38.6	10.3	42.1	3.9	37.8	18.7	37.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.6	10.3	42.1	3.9	37.8	18.7	37.2
Queue Length 50th (ft)	24	21	32	16	15	1	48
Queue Length 95th (ft)	55	45	64	29	39	22	93
Internal Link Dist (ft)		3989		1156		1019	1012
Turn Bay Length (ft)	270		200		300		
Base Capacity (vph)	208	2754	223	2740	411	388	421
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.10	0.29	0.12	0.07	0.05	0.26

Intersection Summary

Lane Group	EBT	WBL	WBT	NBR
Lane Group Flow (vph)	283	80	573	295
v/c Ratio	0.09	0.14	0.14	0.23
Control Delay	4.3	26.8	1.6	0.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	4.3	26.8	1.6	0.4
Queue Length 50th (ft)	12	17	10	0
Queue Length 95th (ft)	20	m36	28	0
Internal Link Dist (ft)	1279		201	
Turn Bay Length (ft)		200		
Base Capacity (vph)	3123	637	4148	1708
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.09	0.13	0.14	0.17

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBL	WBT	NBR
Lane Group Flow (vph)	593	211	494	131
v/c Ratio	0.18	0.52	0.11	0.11
Control Delay	2.1	36.3	1.9	0.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	2.1	36.3	1.9	0.2
Queue Length 50th (ft)	9	55	20	0
Queue Length 95th (ft)	21	84	22	0
Internal Link Dist (ft)	1279		201	
Turn Bay Length (ft)		200		
Base Capacity (vph)	3372	813	4407	1602
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.18	0.26	0.11	0.08

Intersection Summary

Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	77	435	378	140	174	238
v/c Ratio	0.23	0.12	0.13	0.15	0.58	0.36
Control Delay	34.4	2.3	2.9	1.9	36.4	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.4	2.3	2.9	1.9	36.4	5.3
Queue Length 50th (ft)	16	10	3	0	77	0
Queue Length 95th (ft)	31	19	36	m32	125	28
Internal Link Dist (ft)		653	439		1142	
Turn Bay Length (ft)	250			200		200
Base Capacity (vph)	637	3695	2918	912	596	1093
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.12	0.13	0.15	0.29	0.22

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	198	328	680	254	63	172
v/c Ratio	0.46	0.08	0.23	0.27	0.35	0.39
Control Delay	38.3	1.0	2.2	0.8	39.7	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.3	1.0	2.2	0.8	39.7	8.5
Queue Length 50th (ft)	53	4	12	0	32	0
Queue Length 95th (ft)	86	7	29	m0	66	30
Internal Link Dist (ft)		653	439		1142	
Turn Bay Length (ft)	250			200		200
Base Capacity (vph)	756	4080	2953	952	539	966
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.08	0.23	0.27	0.12	0.18

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	406	111	121	9	142	94	33	4	57	283
v/c Ratio	0.78	0.04	0.12	0.09	0.14	0.59	0.05	0.01	0.44	0.54
Control Delay	34.1	6.3	1.6	39.6	25.1	49.5	25.8	17.0	44.4	26.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.1	6.3	1.6	39.6	25.1	49.5	25.8	17.0	44.4	26.5
Queue Length 50th (ft)	155	4	0	5	32	43	7	0	26	50
Queue Length 95th (ft)	#307	15	15	m15	58	#103	18	8	61	83
Internal Link Dist (ft)		493			1124		842			1095
Turn Bay Length (ft)	250		120	325		475			250	
Base Capacity (vph)	538	3156	1028	105	1040	163	853	385	130	789
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.75	0.04	0.12	0.09	0.14	0.58	0.04	0.01	0.44	0.36

Intersection Summary

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	365	60	98	17	253	271	137	5	5	182
v/c Ratio	0.87	0.02	0.12	0.14	0.29	0.67	0.11	0.01	0.05	0.45
Control Delay	52.7	13.8	3.9	52.8	46.1	38.1	18.4	11.6	37.4	19.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.7	13.8	3.9	52.8	46.1	38.1	18.4	11.6	37.4	19.8
Queue Length 50th (ft)	186	5	0	10	67	127	23	0	3	22
Queue Length 95th (ft)	#340	15	28	m23	107	208	47	8	m13	52
Internal Link Dist (ft)		493			1124		842			1095
Turn Bay Length (ft)	250		120	325		475			250	
Base Capacity (vph)	421	2506	830	118	874	408	1263	568	105	718
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.87	0.02	0.12	0.14	0.29	0.66	0.11	0.01	0.05	0.25

Intersection Summary

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	24	31	8	22	107	90	1	41
v/c Ratio	0.08	0.03	0.08	0.01	0.44	0.12	0.01	0.14
Control Delay	28.9	3.9	35.4	8.2	34.9	23.1	46.0	34.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.9	3.9	35.4	8.2	34.9	23.1	46.0	34.0
Queue Length 50th (ft)	4	1	4	1	47	16	0	2
Queue Length 95th (ft)	m11	m4	15	7	80	34	m5	20
Internal Link Dist (ft)		1204		311		851		533
Turn Bay Length (ft)	180		180		250		200	
Base Capacity (vph)	296	1107	105	1943	267	882	512	1251
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.03	0.08	0.01	0.40	0.10	0.00	0.03

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	24	6	12	27	204	126	3	66
v/c Ratio	0.09	0.01	0.09	0.01	0.65	0.13	0.02	0.22
Control Delay	41.0	10.8	35.9	10.6	41.5	22.5	40.3	24.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.0	10.8	35.9	10.6	41.5	22.5	40.3	24.0
Queue Length 50th (ft)	6	1	6	2	101	25	1	3
Queue Length 95th (ft)	19	10	21	11	159	48	12	30
Internal Link Dist (ft)		1204		311		851		533
Turn Bay Length (ft)	180		180		250		200	
Base Capacity (vph)	266	956	160	1845	417	1066	301	739
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.01	0.08	0.01	0.49	0.12	0.01	0.09

Intersection Summary

Lane Group	WBL	WBR	NBT	SBT
Lane Group Flow (vph)	2	2	520	88
v/c Ratio	0.02	0.03	0.29	0.05
Control Delay	16.5	12.0	0.8	0.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	16.5	12.0	0.8	0.4
Queue Length 50th (ft)	2	0	0	0
Queue Length 95th (ft)	11	9	59	10
Internal Link Dist (ft)	670		520	1210
Turn Bay Length (ft)				
Base Capacity (vph)	234	210	1814	1818
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.01	0.01	0.29	0.05

Intersection Summary

Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	9	1	66	2	364
v/c Ratio	0.07	0.01	0.04	0.02	0.20
Control Delay	36.9	28.0	1.7	36.5	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	36.9	28.0	1.7	36.5	0.8
Queue Length 50th (ft)	5	0	0	1	0
Queue Length 95th (ft)	19	5	20	8	46
Internal Link Dist (ft)	670		520		1210
Turn Bay Length (ft)				150	
Base Capacity (vph)	579	519	1724	327	1795
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.02	0.00	0.04	0.01	0.20

Intersection Summary

APPENDIX E

- Existing + Project Phase 1 - Arterial Analysis
- Existing + Project Phase 1 - Synchro Analysis
- Existing + Project Phase 1 - ILV Analysis
- Existing + Project Phase 1 – Queuing Summaries

Existing + Project Phase 1 - Arterial Analysis

Arterial Level of Service: EB Otay Mesa Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Heritage Road	II	45	28.4	22.2	50.6	0.27	19.4	D
Cactus Rd	II	45	44.7	10.6	55.3	0.51	33.0	B
Brittania Blvd	II	45	45.5	19.6	65.1	0.52	28.6	B
La Media	II	45	83.0	9.1	92.1	1.04	40.6	A
Piper Ranch Rd	II	45	44.3	2.6	46.9	0.50	38.7	A
SR125 SB	II	45	29.4	2.0	31.4	0.30	34.1	B
SR125 NB Ramp	II	45	13.4	1.0	14.4	0.12	30.8	B
Sanyo Ave	II	45	35.1	6.8	41.9	0.37	31.5	B
Enrico Fermi Dr	II	45	62.8	64.1	126.9	0.78	22.2	C
Total	II		386.6	138.0	524.6	4.41	30.3	B

Arterial Level of Service: WB Otay Mesa Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Enrico Fermi Dr	II	45	43.2	5.1	48.3	0.49	36.6	A
Sanyo Ave	II	45	62.8	9.1	71.9	0.78	39.3	A
SR125 NB Ramp	II	45	35.1	0.5	35.6	0.37	37.0	A
SR125 SB	II	45	13.4	8.8	22.2	0.12	20.0	D
Piper Ranch Rd	II	45	29.4	12.2	41.6	0.30	25.7	C
La Media	II	45	44.3	5.5	49.8	0.50	36.4	A
Brittania Blvd	II	45	83.0	3.0	86.0	1.04	43.5	A
Cactus Rd	II	45	45.5	3.1	48.6	0.52	38.3	A
Heritage Road	II	45	44.7	8.2	52.9	0.51	34.5	B
Total	II		401.4	55.5	456.9	4.63	36.5	A

Arterial Level of Service: EB Otay Mesa Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Heritage Road	II	45	28.4	21.4	49.8	0.27	19.7	D
Cactus Rd	II	45	44.7	15.4	60.1	0.51	30.4	B
Brittania Blvd	II	45	45.5	9.9	55.4	0.52	33.6	B
La Media	II	45	83.0	9.8	92.8	1.04	40.3	A
Piper Ranch Rd	II	45	44.3	2.4	46.7	0.50	38.8	A
SR125 SB	II	45	29.4	1.4	30.8	0.30	34.7	B
SR125 NB Ramp	II	45	13.4	0.1	13.5	0.12	32.8	B
Sanyo Ave	II	45	35.1	5.3	40.4	0.37	32.6	B
Enrico Fermi Dr	II	45	62.8	3.7	66.5	0.78	42.5	A
Total	II		386.6	69.4	456.0	4.41	34.8	B

Arterial Level of Service: WB Otay Mesa Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Enrico Fermi Dr	II	45	43.2	10.6	53.8	0.49	32.8	B
Sanyo Ave	II	45	62.8	6.6	69.4	0.78	40.7	A
SR125 NB Ramp	II	45	35.1	3.5	38.6	0.37	34.1	B
SR125 SB	II	45	13.4	3.2	16.6	0.12	26.7	C
Piper Ranch Rd	II	45	29.4	12.0	41.4	0.30	25.8	C
La Media	II	45	44.3	14.8	59.1	0.50	30.7	B
Brittania Blvd	II	45	83.0	11.3	94.3	1.04	39.6	A
Cactus Rd	II	45	45.5	16.7	62.2	0.52	29.9	B
Heritage Road	II	45	44.7	29.6	74.3	0.51	24.6	C
Total	II		401.4	108.3	509.7	4.63	32.7	B

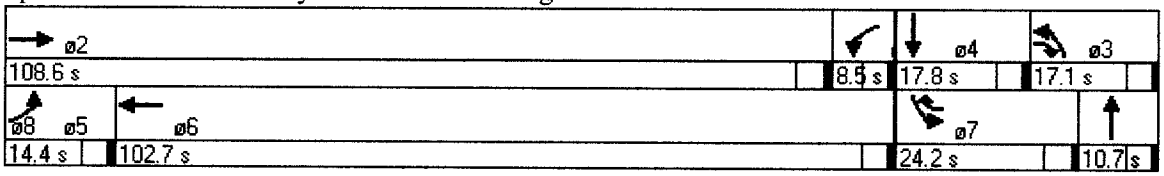
Existing + Project Phase 1 - Synchro Analysis

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	1.00	1.00	1.00	1.00	1.00	0.88
Frt			0.850			0.850		0.895				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	4803	1583	3433	4803	1583	1770	1667	0	1770	1863	2787
Flt Permitted	0.950			0.950			0.950			0.000		
Satd. Flow (perm)	3433	4803	1583	3433	4803	1583	1770	1667	0	0	1863	2787
Satd. Flow (RTOR)			228			121		48				63
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	106	2412	187	31	1114	99	63	27	63	221	51	52
Adj. Flow (vph)	129	2941	228	38	1359	121	77	33	77	270	62	63
Lane Group Flow (vph)	129	2941	228	38	1359	121	77	110	0	270	62	63
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot			pm+pt		Perm
Protected Phases	5	2	3	1	6	7	3	8		7	4	
Permitted Phases			2			6				4		4
Total Split (s)	14.4	108.6	17.1	8.5	102.7	24.2	17.1	10.7	0.0	24.2	17.8	17.8
Act Effct Green (s)	10.0	106.3	126.5	4.5	99.1	123.3	16.2	6.7		20.2	10.7	10.7
Actuated g/C Ratio	0.07	0.70	0.83	0.03	0.65	0.81	0.11	0.04		0.13	0.07	0.07
v/c Ratio	0.57	0.88	0.17	0.37	0.43	0.09	0.41	0.92		1.15	0.47	0.25
Control Delay	79.2	22.2	0.6	69.9	8.2	1.0	71.6	103.6		160.8	79.2	16.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	79.2	22.2	0.6	69.9	8.2	1.0	71.6	103.6		160.8	79.2	16.6
LOS	E	C	A	E	A	A	E	F		F	E	B
Approach Delay		22.9			9.2			90.4			125.0	
Approach LOS		C			A			F			F	

Intersection Summary

Cycle Length: 152
Actuated Cycle Length: 152
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green, Master Intersection
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.15
Intersection Signal Delay: 28.9 — Intersection LOS: C
Intersection Capacity Utilization 72.2% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 1: Otay Mesa Road & Heritage Road

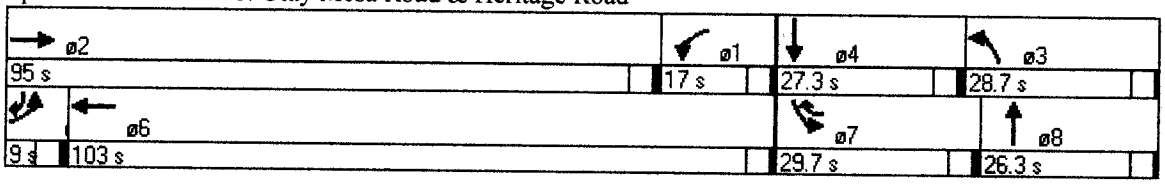


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	1.00	1.00	1.00	1.00	1.00	0.88
Frt			0.850			0.850		0.942				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	4803	1583	3433	4803	1583	1770	1755	0	1770	1863	2787
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	4803	1583	3433	4803	1583	1770	1755	0	1770	1863	2787
Satd. Flow (RTOR)			94			363		15				50
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	127	1334	88	33	2461	341	214	78	49	232	45	247
Adj. Flow (vph)	135	1419	94	35	2618	363	228	83	52	247	48	263
Lane Group Flow (vph)	135	1419	94	35	2618	363	228	135	0	247	48	263
Turn Type	Prot		Perm	Prot		pm+ov	Prot			Prot		pm+ov
Protected Phases	5	2		1	6	7	3	8		7	4	5
Permitted Phases			2			6						4
Total Split (s)	9.0	95.0	95.0	17.0	103.0	29.7	28.7	26.3	0.0	29.7	27.3	9.0
Act Effct Green (s)	10.9	100.4	100.4	11.6	99.1	128.2	32.0	16.9		25.1	10.0	21.0
Actuated g/C Ratio	0.06	0.60	0.60	0.07	0.59	0.76	0.19	0.10		0.15	0.06	0.12
v/c Ratio	0.61	0.49	0.10	0.15	0.92	0.28	0.68	0.71		0.93	0.43	0.67
Control Delay	85.8	21.4	3.3	60.5	29.6	2.5	73.7	84.5		109.6	87.2	43.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	85.8	21.4	3.3	60.5	29.6	2.5	73.7	84.5		109.6	87.2	43.9
LOS	F	C	A	E	C	A	E	F		F	F	D
Approach Delay		25.6			26.7			77.7			76.7	
Approach LOS		C			C			E			E	

Intersection Summary

Cycle Length: 168
Actuated Cycle Length: 168
Offset: 5 (3%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.93
Intersection Signal Delay: 34.7 — Intersection LOS: C
Intersection Capacity Utilization 84.3% — ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 1: Otay Mesa Road & Heritage Road

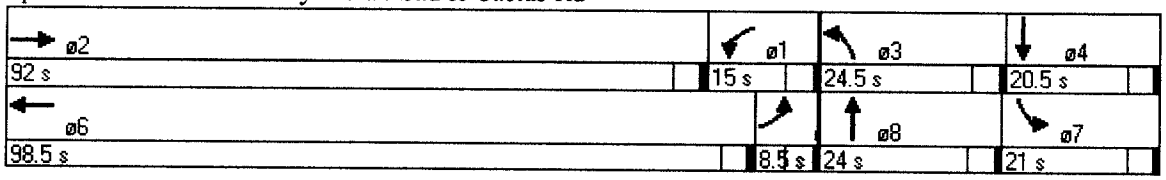


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.992			0.999				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4779	0	1770	4799	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	4779	0	1770	4799	0	1770	1863	1583	1770	1863	1583
Satd. Flow (RTOR)		10			1				218			151
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	4	2597	154	57	1196	6	76	0	69	1	0	1
Adj. Flow (vph)	5	3206	190	70	1477	7	94	0	85	1	0	1
Lane Group Flow (vph)	5	3396	0	70	1484	0	94	0	85	1	0	1
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases									8			4
Total Split (s)	8.5	92.0	0.0	15.0	98.5	0.0	24.5	24.0	24.0	21.0	20.5	20.5
Act Effct Green (s)	7.6	114.1		10.1	124.9		13.7		11.2	8.6		6.0
Actuated g/C Ratio	0.05	0.75		0.07	0.82		0.09		0.07	0.06		0.04
v/c Ratio	0.06	0.95		0.59	0.38		0.59		0.27	0.01		0.00
Control Delay	58.2	10.6		77.9	3.1		80.6		2.0	64.0		0.0
Queue Delay	0.0	0.0		0.0	0.0		0.0		0.0	0.0		0.0
Total Delay	58.2	10.6		77.9	3.1		80.6		2.0	64.0		0.0
LOS	E	B		E	A		F		A	E		A
Approach Delay		10.7			6.4							
Approach LOS		B			A							

Intersection Summary

Cycle Length: 152
Actuated Cycle Length: 152
Offset: 42 (28%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.95
Intersection Signal Delay: 10.6 — Intersection LOS: B
Intersection Capacity Utilization 71.2% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 2: Otay Mesa Road & Cactus Rd

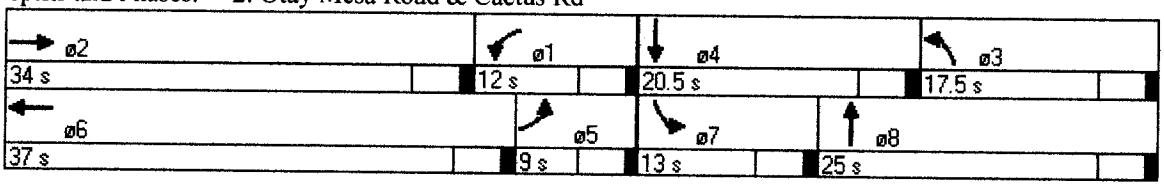


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.988			0.999				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4767	0	1770	4799	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	4767	0	1770	4799	0	1770	1863	1583	1770	1863	1583
Satd. Flow (RTOR)		20			1				138			4
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	2	1514	137	81	2674	13	188	1	130	4	1	4
Adj. Flow (vph)	2	1611	146	86	2845	14	200	1	138	4	1	4
Lane Group Flow (vph)	2	1757	0	86	2859	0	200	1	138	4	1	4
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases									8			4
Total Split (s)	9.0	34.0	0.0	12.0	37.0	0.0	17.5	25.0	25.0	13.0	20.5	20.5
Act Effct Green (s)	5.0	48.3		7.7	56.1		15.9	15.9	15.9	6.2	6.2	6.2
Actuated g/C Ratio	0.06	0.58		0.09	0.67		0.19	0.19	0.19	0.07	0.07	0.07
v/c Ratio	0.02	0.64		0.53	0.89		0.60	0.00	0.34	0.03	0.01	0.03
Control Delay	31.5	15.4		42.9	16.7		37.8	24.0	7.2	36.5	36.0	24.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.5	15.4		42.9	16.7		37.8	24.0	7.2	36.5	36.0	24.5
LOS	C	B		D	B		D	C	A	D	D	C
Approach Delay		15.4			17.5			25.3			31.1	
Approach LOS		B			B			C			C	

Intersection Summary

Cycle Length: 84
Actuated Cycle Length: 84
Offset: 33 (39%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 17.3 — Intersection LOS: B
Intersection Capacity Utilization 82.4% — ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 2: Otay Mesa Road & Cactus Rd

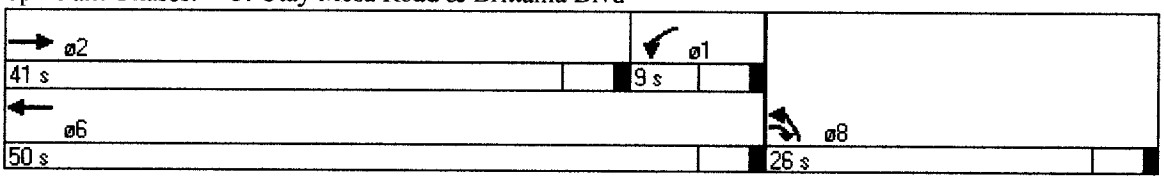


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.91	1.00	1.00	0.91	0.97	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	4803	1583	1770	4803	3433	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	4803	1583	1770	4803	3433	1583
Satd. Flow (RTOR)		488				61
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	1721	973	34	475	776	50
Adj. Flow (vph)	2099	1187	41	579	946	61
Lane Group Flow (vph)	2099	1187	41	579	946	61
Turn Type		pm+ov	Prot			Perm
Protected Phases	2	8	1	6	8	
Permitted Phases		2				8
Total Split (s)	41.0	26.0	9.0	50.0	26.0	26.0
Act Effct Green (s)	40.6	68.2	5.0	46.0	22.0	22.0
Actuated g/C Ratio	0.53	0.90	0.07	0.61	0.29	0.29
v/c Ratio	0.82	0.81	0.35	0.20	0.95	0.12
Control Delay	19.6	10.4	40.6	3.0	47.2	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.6	10.4	40.6	3.0	47.2	6.7
LOS	B	B	D	A	D	A
Approach Delay	16.3			5.5	44.7	
Approach LOS	B			A	D	

Intersection Summary

Cycle Length: 76
Actuated Cycle Length: 76
Offset: 6 (8%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.95
Intersection Signal Delay: 20.7 — Intersection LOS: C
Intersection Capacity Utilization 70.2% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 3: Otay Mesa Road & Brittania Blvd

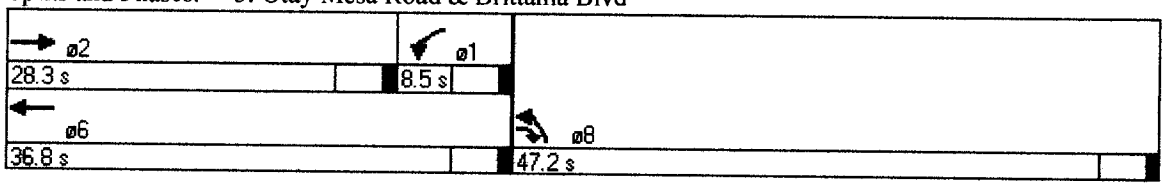


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.91	1.00	1.00	0.91	0.97	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	4803	1583	1770	4803	3433	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	4803	1583	1770	4803	3433	1583
Satd. Flow (RTOR)		712				62
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	686	970	17	1613	1228	60
Adj. Flow (vph)	707	1000	18	1663	1266	62
Lane Group Flow (vph)	707	1000	18	1663	1266	62
Turn Type		pm+ov	Prot			Perm
Protected Phases	2	8	1	6	8	
Permitted Phases		2				8
Total Split (s)	28.3	47.2	8.5	36.8	47.2	47.2
Act Effct Green (s)	33.3	79.0	4.5	36.7	39.3	39.3
Actuated g/C Ratio	0.40	0.94	0.05	0.44	0.47	0.47
v/c Ratio	0.37	0.65	0.19	0.79	0.79	0.08
Control Delay	9.9	10.8	24.7	11.3	22.7	3.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.9	10.8	24.7	11.3	22.7	3.2
LOS	A	B	C	B	C	A
Approach Delay	10.4			11.5	21.8	
Approach LOS	B			B	C	

Intersection Summary

Cycle Length: 84
Actuated Cycle Length: 84
Offset: 74 (88%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.79
Intersection Signal Delay: 14.0 — Intersection LOS: B
Intersection Capacity Utilization 72.9% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 3: Otay Mesa Road & Brittania Blvd

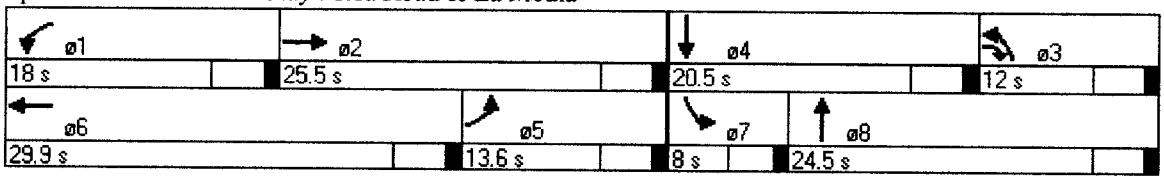


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.91	1.00	1.00	1.00	0.97	1.00	1.00
Frt			0.850		0.989			0.905			0.935	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4803	1583	1770	4770	0	1770	1650	0	3433	1686	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	4803	1583	1770	4770	0	1770	1650	0	3433	1686	0
Satd. Flow (RTOR)			318		18			84			36	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	82	1157	277	167	356	29	75	42	73	11	41	31
Adj. Flow (vph)	94	1330	318	192	409	33	86	48	84	13	47	36
Lane Group Flow (vph)	94	1330	318	192	442	0	86	132	0	13	83	0
Turn Type	Prot		pm+ov	Prot			Prot			Prot		
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2									
Total Split (s)	13.6	25.5	12.0	18.0	29.9	0.0	12.0	24.5	0.0	8.0	20.5	0.0
Act Effct Green (s)	8.9	29.4	39.0	12.8	35.3		9.6	20.2		4.0	8.2	
Actuated g/C Ratio	0.12	0.39	0.51	0.17	0.46		0.13	0.27		0.05	0.11	
v/c Ratio	0.45	0.72	0.33	0.64	0.20		0.38	0.26		0.07	0.39	
Control Delay	19.0	9.1	2.3	30.6	5.5		34.6	10.5		35.2	24.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	19.0	9.1	2.3	30.6	5.5		34.6	10.5		35.2	24.8	
LOS	B	A	A	C	A		C	B		D	C	
Approach Delay		8.4			13.1			20.0			26.2	
Approach LOS		A			B			C			C	

Intersection Summary

Cycle Length: 76
Actuated Cycle Length: 76
Offset: 29 (38%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.72
Intersection Signal Delay: 11.1 — Intersection LOS: B
Intersection Capacity Utilization 52.4% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 4: Otay Mesa Road & La Media

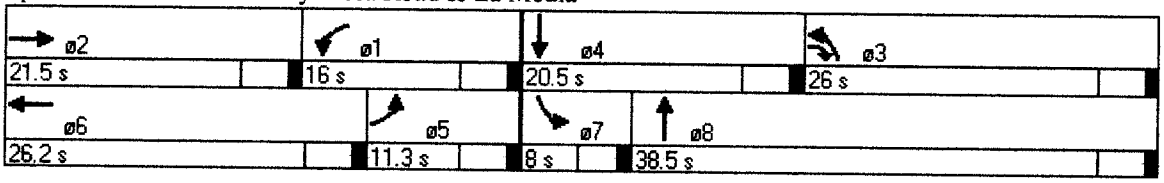


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.91	1.00	1.00	1.00	0.97	1.00	1.00
Frt			0.850		0.995			0.893			0.921	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4803	1583	1770	4788	0	1770	1636	0	3433	1669	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	4803	1583	1770	4788	0	1770	1636	0	3433	1669	0
Satd. Flow (RTOR)			298		6			123			60	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	58	403	268	118	985	35	277	45	111	38	83	93
Adj. Flow (vph)	64	448	298	131	1094	39	308	50	123	42	92	103
Lane Group Flow (vph)	64	448	298	131	1133	0	308	173	0	42	195	0
Turn Type	Prot		pm+ov	Prot			Prot			Prot		
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2									
Total Split (s)	11.3	21.5	26.0	16.0	26.2	0.0	26.0	38.5	0.0	8.0	20.5	0.0
Act Effct Green (s)	7.0	25.9	48.7	11.1	31.9		18.8	30.2		4.3	12.2	
Actuated g/C Ratio	0.08	0.31	0.58	0.13	0.38		0.22	0.36		0.05	0.15	
v/c Ratio	0.43	0.30	0.29	0.56	0.62		0.78	0.26		0.24	0.66	
Control Delay	42.9	9.8	1.0	29.8	14.8		44.1	6.9		42.1	33.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	42.9	9.8	1.0	29.8	14.8		44.1	6.9		42.1	33.9	
LOS	D	A	A	C	B		D	A		D	C	
Approach Delay		9.2			16.4			30.7			35.3	
Approach LOS		A			B			C			D	

Intersection Summary

Cycle Length: 84
Actuated Cycle Length: 84
Offset: 3 (4%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 18.4 — Intersection LOS: B
Intersection Capacity Utilization 61.9% — ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 4: Otay Mesa Road & La Media

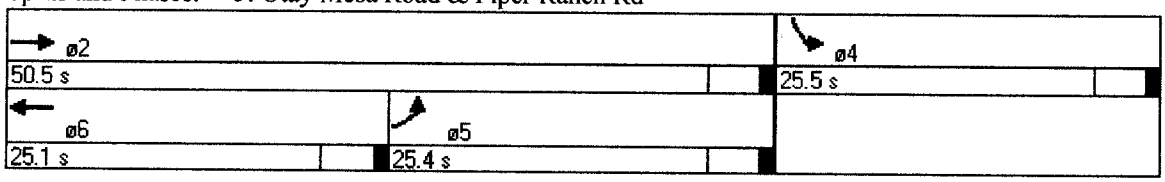


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.91	0.91	0.97	0.91
Frt			0.979		0.940	0.850
Flt Protected	0.950				0.971	
Satd. Flow (prot)	1770	3539	4979	0	3298	1441
Flt Permitted	0.950				0.971	
Satd. Flow (perm)	1770	3539	4979	0	3298	1441
Satd. Flow (RTOR)			41		57	64
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	180	1083	456	75	74	105
Adj. Flow (vph)	207	1245	524	86	85	121
Lane Group Flow (vph)	207	1245	610	0	142	64
Turn Type	Prot					Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Total Split (s)	25.4	50.5	25.1	0.0	25.5	25.5
Act Effct Green (s)	21.4	60.2	34.8		7.8	7.8
Actuated g/C Ratio	0.28	0.79	0.46		0.10	0.10
v/c Ratio	0.42	0.44	0.26		0.36	0.31
Control Delay	8.9	2.6	12.2		22.1	13.2
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	8.9	2.6	12.2		22.1	13.2
LOS	A	A	B		C	B
Approach Delay		3.5	12.2		19.3	
Approach LOS		A	B		B	

Intersection Summary

Cycle Length: 76
Actuated Cycle Length: 76
Offset: 50 (66%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.44
Intersection Signal Delay: 7.3 — Intersection LOS: A
Intersection Capacity Utilization 39.9% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 5: Otay Mesa Road & Piper Ranch Rd

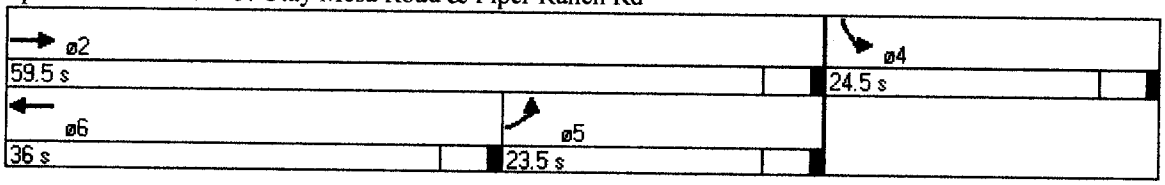


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.91	0.91	0.97	0.91
Frt			0.986		0.906	0.850
Flt Protected	0.950				0.982	
Satd. Flow (prot)	1770	3539	5014	0	3215	1441
Flt Permitted	0.950				0.982	
Satd. Flow (perm)	1770	3539	5014	0	3215	1441
Satd. Flow (RTOR)			24		202	202
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	167	777	1489	152	118	400
Adj. Flow (vph)	169	785	1504	154	119	404
Lane Group Flow (vph)	169	785	1658	0	321	202
Turn Type	Prot					Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Total Split (s)	23.5	59.5	36.0	0.0	24.5	24.5
Act Effct Green (s)	19.5	66.4	42.9		9.6	9.6
Actuated g/C Ratio	0.23	0.79	0.51		0.11	0.11
v/c Ratio	0.41	0.28	0.65		0.59	0.59
Control Delay	36.2	2.4	12.0		17.5	12.5
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	36.2	2.4	12.0		17.5	12.5
LOS	D	A	B		B	B
Approach Delay		8.4	12.0		15.5	
Approach LOS		A	B		B	

Intersection Summary

Cycle Length: 84
Actuated Cycle Length: 84
Offset: 46 (55%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.65
Intersection Signal Delay: 11.5 — Intersection LOS: B
Intersection Capacity Utilization 59.0% — ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 5: Otay Mesa Road & Piper Ranch Rd

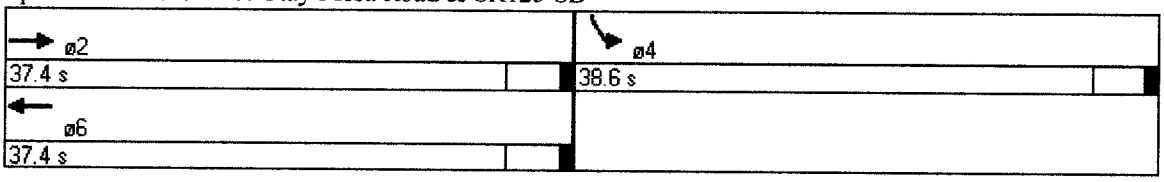


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.91	1.00	0.97	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	5085	5085	0	3433	1583
Flt Permitted					0.950	
Satd. Flow (perm)	0	5085	5085	0	3433	1583
Satd. Flow (RTOR)						267
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	0	1153	315	0	465	224
Adj. Flow (vph)	0	1373	375	0	554	267
Lane Group Flow (vph)	0	1373	375	0	554	267
Turn Type						Perm
Protected Phases		2	6		4	
Permitted Phases						4
Total Split (s)	0.0	37.4	37.4	0.0	38.6	38.6
Act Effct Green (s)		50.3	50.3		17.7	17.7
Actuated g/C Ratio		0.66	0.66		0.23	0.23
v/c Ratio		0.41	0.11		0.69	0.47
Control Delay		2.0	8.8		30.9	5.8
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		2.0	8.8		30.9	5.8
LOS		A	A		C	A
Approach Delay		2.0	8.8		22.8	
Approach LOS		A	A		C	

Intersection Summary

Cycle Length: 76
Actuated Cycle Length: 76
Offset: 23 (30%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.69
Intersection Signal Delay: 9.6 — Intersection LOS: A
Intersection Capacity Utilization 46.8% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 6: Otay Mesa Road & SR125 SB

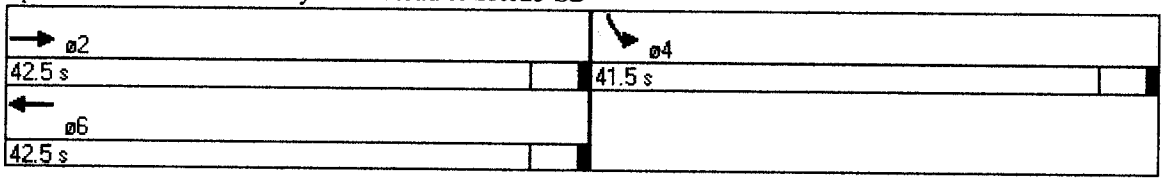


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.91	1.00	0.97	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	5085	5085	0	3433	1583
Flt Permitted					0.950	
Satd. Flow (perm)	0	5085	5085	0	3433	1583
Satd. Flow (RTOR)						31
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	0	478	1072	0	79	110
Adj. Flow (vph)	0	537	1204	0	89	124
Lane Group Flow (vph)	0	537	1204	0	89	124
Turn Type						Perm
Protected Phases		2	6		4	
Permitted Phases						4
Total Split (s)	0.0	42.5	42.5	0.0	41.5	41.5
Act Effct Green (s)		68.7	68.7		10.1	10.1
Actuated g/C Ratio		0.82	0.82		0.12	0.12
v/c Ratio		0.13	0.29		0.21	0.57
Control Delay		1.4	3.2		33.3	35.6
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		1.4	3.2		33.3	35.6
LOS		A	A		C	D
Approach Delay		1.4	3.2		34.7	
Approach LOS		A	A		C	

Intersection Summary

Cycle Length: 84
Actuated Cycle Length: 84
Offset: 56 (67%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.57
Intersection Signal Delay: 6.2 — Intersection LOS: A
Intersection Capacity Utilization 40.7% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 6: Otay Mesa Road & SR125 SB

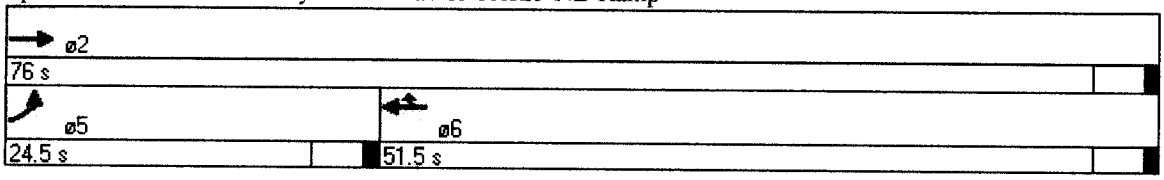


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	0.95	0.88	1.00	1.00
Frt				0.850		
Flt Protected	0.950					
Satd. Flow (prot)	3433	3539	3539	2787	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	3433	3539	3539	2787	0	0
Satd. Flow (RTOR)				57		
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	45	1573	315	46	0	0
Adj. Flow (vph)	56	1942	389	57	0	0
Lane Group Flow (vph)	56	1942	389	57	0	0
Turn Type	Prot			Perm		
Protected Phases	5	2	6			
Permitted Phases				6		
Total Split (s)	24.5	76.0	51.5	51.5	0.0	0.0
Act Effct Green (s)	7.0	76.0	66.7	66.7		
Actuated g/C Ratio	0.09	1.00	0.88	0.88		
v/c Ratio	0.18	0.55	0.13	0.02		
Control Delay	32.8	1.0	0.5	0.0		
Queue Delay	0.0	0.0	0.0	0.0		
Total Delay	32.8	1.0	0.5	0.0		
LOS	C	A	A	A		
Approach Delay		1.9	0.4			
Approach LOS		A	A			

Intersection Summary

Cycle Length: 76
Actuated Cycle Length: 76
Offset: 22 (29%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.55
Intersection Signal Delay: 1.6 — Intersection LOS: A
Intersection Capacity Utilization 46.8% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 7: Otay Mesa Road & SR125 NB Ramp

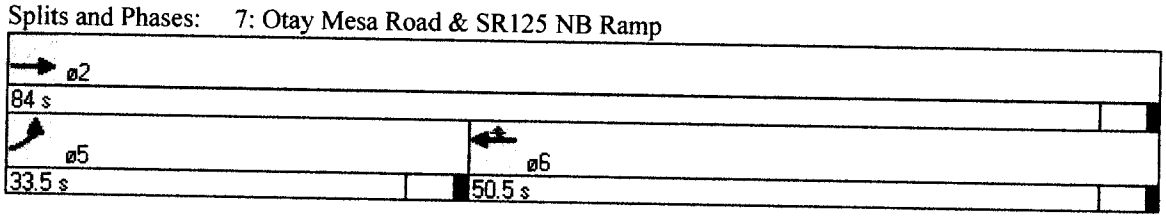


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	0.95	0.88	1.00	1.00
Frt				0.850		
Flt Protected	0.950					
Satd. Flow (prot)	3433	3539	3539	2787	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	3433	3539	3539	2787	0	0
Satd. Flow (RTOR)				376		
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	154	403	1072	338	0	0
Adj. Flow (vph)	171	448	1191	376	0	0
Lane Group Flow (vph)	171	448	1191	376	0	0
Turn Type	Prot			Perm		
Protected Phases	5	2	6			
Permitted Phases				6		
Total Split (s)	33.5	84.0	50.5	50.5	0.0	0.0
Act Effct Green (s)	9.2	84.0	66.8	66.8		
Actuated g/C Ratio	0.11	1.00	0.80	0.80		
v/c Ratio	0.46	0.13	0.42	0.16		
Control Delay	30.0	0.1	3.5	0.5		
Queue Delay	0.0	0.0	0.0	0.0		
Total Delay	30.0	0.1	3.5	0.5		
LOS	C	A	A	A		
Approach Delay		8.3	2.8			
Approach LOS		A	A			

Intersection Summary

Cycle Length: 84
Actuated Cycle Length: 84
Offset: 31 (37%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.46
Intersection Signal Delay: 4.3 — Intersection LOS: A
Intersection Capacity Utilization 40.7% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 7: Otay Mesa Road & SR125 NB Ramp

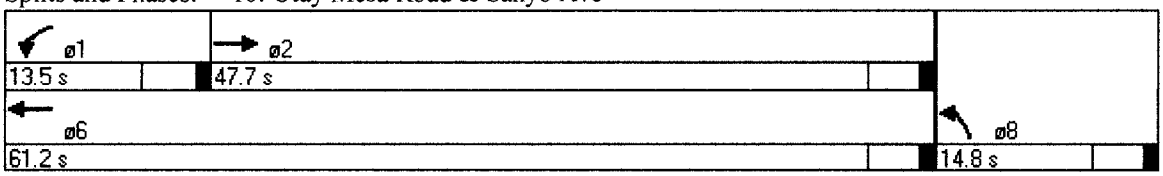


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	0.95	1.00	1.00	0.97	0.95
Frt	0.954				0.995	
Flt Protected			0.950		0.954	
Satd. Flow (prot)	3376	0	1770	1863	3430	0
Flt Permitted			0.950		0.954	
Satd. Flow (perm)	3376	0	1770	1863	3430	0
Satd. Flow (RTOR)	159				4	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	1085	487	4	270	88	3
Adj. Flow (vph)	1340	601	5	333	109	4
Lane Group Flow (vph)	1941	0	5	333	113	0
Turn Type			Prot			
Protected Phases	2		1	6	8	
Permitted Phases						
Total Split (s)	47.7	0.0	13.5	61.2	14.8	0.0
Act Effct Green (s)	60.4		6.3	62.6	8.2	
Actuated g/C Ratio	0.79		0.08	0.82	0.11	
v/c Ratio	0.71		0.03	0.22	0.30	
Control Delay	6.8		24.5	9.1	31.8	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	6.8		24.5	9.1	31.8	
LOS	A		C	A	C	
Approach Delay	6.8			9.3	31.8	
Approach LOS	A			A	C	

Intersection Summary

Cycle Length: 76
Actuated Cycle Length: 76
Offset: 28 (37%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.71
Intersection Signal Delay: 8.4 — Intersection LOS: A
Intersection Capacity Utilization 55.6% — ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 10: Otay Mesa Road & Sanyo Ave

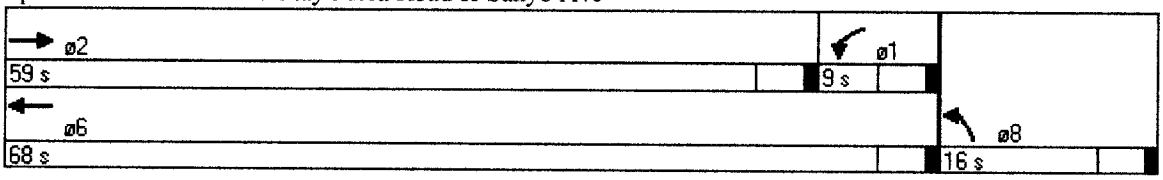


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	0.95	1.00	1.00	0.97	0.95
Frt	0.931				0.999	
Flt Protected			0.950		0.953	
Satd. Flow (prot)	3295	0	1770	1863	3440	0
Flt Permitted			0.950		0.953	
Satd. Flow (perm)	3295	0	1770	1863	3440	0
Satd. Flow (RTOR)	204				1	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	216	186	14	1044	363	4
Adj. Flow (vph)	237	204	15	1147	399	4
Lane Group Flow (vph)	441	0	15	1147	403	0
Turn Type			Prot			
Protected Phases	2		1	6	8	
Permitted Phases						
Total Split (s)	59.0	0.0	9.0	68.0	16.0	0.0
Act Effct Green (s)	54.6		13.6	63.8	12.2	
Actuated g/C Ratio	0.65		0.16	0.76	0.15	
v/c Ratio	0.20		0.05	0.81	0.81	
Control Delay	5.3		21.4	6.6	48.9	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	5.3		21.4	6.6	48.9	
LOS	A		C	A	D	
Approach Delay	5.3			6.8	48.9	
Approach LOS	A			A	D	

Intersection Summary

Cycle Length: 84
Actuated Cycle Length: 84
Offset: 24 (29%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 14.9 — Intersection LOS: B
Intersection Capacity Utilization 72.1% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 10: Otay Mesa Road & Sanyo Ave

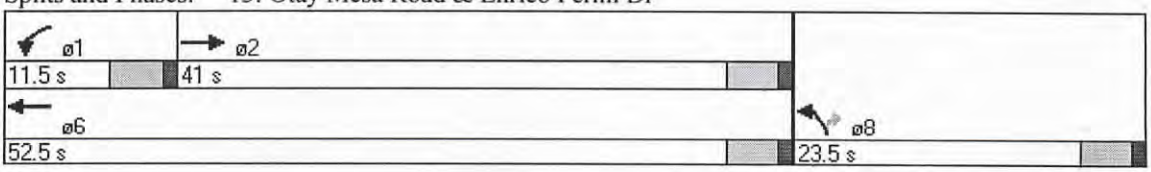


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.921					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1716	0	1770	1863	1770	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1716	0	1770	1863	1770	1583
Satd. Flow (RTOR)	131					33
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	341	484	42	103	194	24
Adj. Flow (vph)	467	663	58	141	266	33
Lane Group Flow (vph)	1130	0	58	141	266	33
Turn Type			Prot			Perm
Protected Phases	2		1	6	8	
Permitted Phases						8
Total Split (s)	41.0	0.0	11.5	52.5	23.5	23.5
Act Effct Green (s)	44.7		7.2	51.8	16.2	16.2
Actuated g/C Ratio	0.59		0.09	0.68	0.21	0.21
v/c Ratio	1.06		0.35	0.11	0.70	0.09
Control Delay	64.8		38.0	5.1	34.3	8.5
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	64.8		38.0	5.1	34.3	8.5
LOS	E		D	A	C	A
Approach Delay	64.8			14.7	31.5	
Approach LOS	E			B	C	

Intersection Summary

Cycle Length: 76
Actuated Cycle Length: 76
Offset: 45 (59%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.06
Intersection Signal Delay: 52.5 — Intersection LOS: D
Intersection Capacity Utilization 65.0% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 13: Otay Mesa Road & Enrico Fermi Dr

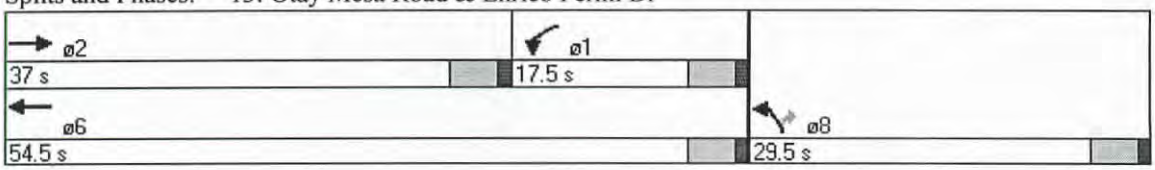


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.913					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1701	0	1770	1863	1770	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1701	0	1770	1863	1770	1583
Satd. Flow (RTOR)	127					52
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	78	141	20	426	524	45
Adj. Flow (vph)	90	162	23	490	603	52
Lane Group Flow (vph)	252	0	23	490	603	52
Turn Type			Prot			Perm
Protected Phases	2		1	6	8	
Permitted Phases						8
Total Split (s)	37.0	0.0	17.5	54.5	29.5	29.5
Act Effct Green (s)	43.5		9.1	50.5	25.5	25.5
Actuated g/C Ratio	0.52		0.11	0.60	0.30	0.30
v/c Ratio	0.27		0.12	0.44	1.12	0.10
Control Delay	3.7		33.1	10.6	110.8	14.9
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	3.7		33.1	10.6	110.8	14.9
LOS	A		C	B	F	B
Approach Delay	3.7			11.6	103.2	
Approach LOS	A			B	F	

Intersection Summary

Cycle Length: 84
Actuated Cycle Length: 84
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.12
Intersection Signal Delay: 52.5 — Intersection LOS: D
Intersection Capacity Utilization 49.9% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 13: Otay Mesa Road & Enrico Fermi Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	481	1	0	0	0	0	0	0	1	0	0	108
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 (vph)	523	1	0	0	0	0	0	0	1	0	0	117

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	524	0	1	117
Volume Left (vph)	523	0	0	0
Volume Right (vph)	0	0	1	117
Hadj (s)	0.23	0.00	-0.57	-0.57
Departure Headway (s)	4.4	4.8	4.8	4.6
Degree Utilization, x	0.64	0.00	0.00	0.15
Capacity (veh/h)	794	730	668	707
Control Delay (s)	15.0	7.8	7.8	8.4
Approach Delay (s)	15.0	0.0	7.8	8.4
Approach LOS	C	A	A	A

Intersection Summary			
Delay	13.8		
HCM Level of Service	B		
Intersection Capacity Utilization	40.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	87	0	0	0	0	0	2	0	0	0	0	350
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 (vph)	95	0	0	0	0	0	2	0	0	0	0	380

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	95	0	2	380
Volume Left (vph)	95	0	2	0
Volume Right (vph)	0	0	0	380
Hadj (s)	0.23	0.00	0.23	-0.57
Departure Headway (s)	4.9	4.8	4.7	3.6
Degree Utilization, x	0.13	0.00	0.00	0.38
Capacity (veh/h)	684	696	725	984
Control Delay (s)	8.6	7.8	7.7	8.8
Approach Delay (s)	8.6	0.0	7.7	8.8
Approach LOS	A	A	A	A

Intersection Summary			
Delay	8.7		
HCM Level of Service	A		
Intersection Capacity Utilization	33.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	7	60	28	4	84	83	23	41	3	95	272	72
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	8	66	31	4	92	91	25	45	3	104	299	79

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	104	97	91	25	48	403	79
Volume Left (vph)	8	4	0	25	0	104	0
Volume Right (vph)	31	0	91	0	3	0	79
Hadj (s)	-0.13	0.06	-0.67	0.53	-0.01	0.16	-0.67
Departure Headway (s)	6.1	6.2	5.5	6.5	5.9	5.6	4.8
Degree Utilization, x	0.18	0.17	0.14	0.05	0.08	0.63	0.11
Capacity (veh/h)	547	540	608	518	564	624	723
Control Delay (s)	10.4	9.2	8.1	8.6	8.3	16.5	7.1
Approach Delay (s)	10.4	8.7		8.4		14.9	
Approach LOS	B	A		A		B	

Intersection Summary			
Delay	12.4		
HCM Level of Service	B		
Intersection Capacity Utilization	43.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	50	65	15	8	102	136	36	175	1	42	131	38
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	57	74	17	9	116	155	41	199	1	48	149	43

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	148	125	155	41	200	197	43
Volume Left (vph)	57	9	0	41	0	48	0
Volume Right (vph)	17	0	155	0	1	0	43
Hadj (s)	0.04	0.07	-0.67	0.53	0.03	0.16	-0.67
Departure Headway (s)	6.3	6.2	5.5	6.6	6.1	6.3	5.4
Degree Utilization, x	0.26	0.22	0.23	0.08	0.34	0.34	0.07
Capacity (veh/h)	528	543	614	510	555	542	616
Control Delay (s)	11.5	9.7	8.9	9.0	11.1	11.3	7.6
Approach Delay (s)	11.5	9.3		10.7		10.6	
Approach LOS	B	A		B		B	

Intersection Summary			
Delay	10.4		
HCM Level of Service	B		
Intersection Capacity Utilization	42.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	17	113	28	6	75	2	33	4	15	2	0	63
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	19	126	31	7	83	2	37	4	17	2	0	70
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	86			157			304	278	78	217	292	43
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	86			157			304	278	78	217	292	43
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			94	99	98	100	100	93
cM capacity (veh/h)	1509			1421			575	618	966	695	607	1018

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1
Volume Total	19	84	73	7	56	30	41	17	72
Volume Left	19	0	0	7	0	0	37	0	2
Volume Right	0	0	31	0	0	2	0	17	70
cSH	1509	1700	1700	1421	1700	1700	579	966	1004
Volume to Capacity	0.01	0.05	0.04	0.00	0.03	0.02	0.07	0.02	0.07
Queue Length 95th (ft)	1	0	0	0	0	0	6	1	6
Control Delay (s)	7.4	0.0	0.0	7.5	0.0	0.0	11.7	8.8	8.9
Lane LOS	A			A			B	A	A
Approach Delay (s)	0.8			0.5			10.9		8.9
Approach LOS							B		A

Intersection Summary			
Average Delay	3.7		
Intersection Capacity Utilization	23.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	21	63	24	32	154	1	82	3	11	0	2	10
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	24	72	28	37	177	1	94	3	13	0	2	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	178			100			309	386	50	350	399	89
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	178			100			309	386	50	350	399	89
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			98			84	99	99	100	100	99
cM capacity (veh/h)	1395			1490			591	524	1008	552	515	951

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1
Volume Total	24	48	52	37	118	60	98	13	14
Volume Left	24	0	0	37	0	0	94	0	0
Volume Right	0	0	28	0	0	1	0	13	11
cSH	1395	1700	1700	1490	1700	1700	589	1008	834
Volume to Capacity	0.02	0.03	0.03	0.02	0.07	0.04	0.17	0.01	0.02
Queue Length 95th (ft)	1	0	0	2	0	0	15	1	1
Control Delay (s)	7.6	0.0	0.0	7.5	0.0	0.0	12.3	8.6	9.4
Lane LOS	A			A			B	A	A
Approach Delay (s)	1.5			1.3			11.9		9.4
Approach LOS							B		A

Intersection Summary			
Average Delay	4.1		
Intersection Capacity Utilization	29.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	64	37	4	70	23	11
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	82	47	5	90	29	14
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)				1290		
pX, platoon unblocked						
vC, conflicting volume			129		206	65
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			129		206	65
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		96	99
cM capacity (veh/h)			1454		761	986

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2
Volume Total	55	75	5	90	29	14
Volume Left	0	0	5	0	29	0
Volume Right	0	47	0	0	0	14
cSH	1700	1700	1454	1700	761	986
Volume to Capacity	0.03	0.04	0.00	0.05	0.04	0.01
Queue Length 95th (ft)	0	0	0	0	3	1
Control Delay (s)	0.0	0.0	7.5	0.0	9.9	8.7
Lane LOS			A		A	A
Approach Delay (s)	0.0		0.4		9.5	
Approach LOS					A	

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	13.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	27	36	1	108	55	1
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	32	43	1	129	65	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)				1290		
pX, platoon unblocked						
vC, conflicting volume			75		185	38
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			75		185	38
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		92	100
cM capacity (veh/h)			1522		787	1026

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2
Volume Total	21	54	1	129	65	1
Volume Left	0	0	1	0	65	0
Volume Right	0	43	0	0	0	1
cSH	1700	1700	1522	1700	787	1026
Volume to Capacity	0.01	0.03	0.00	0.08	0.08	0.00
Queue Length 95th (ft)	0	0	0	0	7	0
Control Delay (s)	0.0	0.0	7.4	0.0	10.0	8.5
Lane LOS			A		A	A
Approach Delay (s)	0.0		0.1		10.0	
Approach LOS					A	

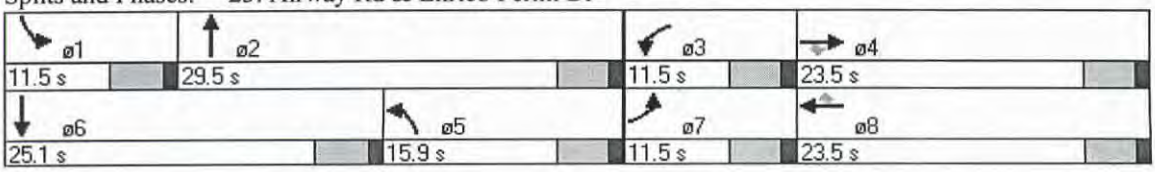
Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	15.7%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850			0.850		0.968			0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1770	1504	1770	1863	1583	1770	3426	0	1770	3529	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1770	1504	1770	1863	1583	1770	3426	0	1770	3529	0
Satd. Flow (RTOR)			42			43		49			2	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	7	37	31	6	4	32	65	157	43	223	314	6
Adj. Flow (vph)	9	50	42	8	5	43	88	212	58	301	424	8
Lane Group Flow (vph)	9	50	42	8	5	43	88	270	0	301	432	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Total Split (s)	11.5	23.5	23.5	11.5	23.5	23.5	15.9	29.5	0.0	11.5	25.1	0.0
Act Effct Green (s)	6.4	8.0	8.0	6.3	8.0	8.0	9.6	25.0		30.8	49.0	
Actuated g/C Ratio	0.08	0.11	0.11	0.08	0.11	0.11	0.13	0.33		0.41	0.64	
v/c Ratio	0.06	0.27	0.21	0.05	0.03	0.21	0.39	0.23		0.42	0.19	
Control Delay	32.6	34.3	13.0	32.7	29.5	12.9	44.4	23.5		15.5	10.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	32.6	34.3	13.0	32.7	29.5	12.9	44.4	23.5		15.5	10.9	
LOS	C	C	B	C	C	B	D	C		B	B	
Approach Delay		25.3			17.2			28.7			12.8	
Approach LOS		C			B			C			B	

Intersection Summary

Cycle Length: 76
Actuated Cycle Length: 76
Offset: 10 (13%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.42
Intersection Signal Delay: 18.6 — Intersection LOS: B
Intersection Capacity Utilization 33.9% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 23: Airway Rd & Enrico Fermi Dr



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850			0.850		0.995			0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1770	1504	1770	1863	1583	1770	3522	0	1770	3522	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1770	1504	1770	1863	1583	1770	3522	0	1770	3522	0
Satd. Flow (RTOR)			12			141		5			4	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	7	11	10	6	11	116	94	435	16	60	120	4
Adj. Flow (vph)	9	13	12	7	13	141	115	530	20	73	146	5
Lane Group Flow (vph)	9	13	12	7	13	141	115	550	0	73	151	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Total Split (s)	13.5	25.5	25.5	13.5	25.5	25.5	18.4	31.5	0.0	13.5	26.6	0.0
Act Effct Green (s)	6.4	7.6	7.6	6.3	7.6	7.6	16.3	54.8		9.3	48.1	
Actuated g/C Ratio	0.08	0.09	0.09	0.08	0.09	0.09	0.19	0.65		0.11	0.57	
v/c Ratio	0.07	0.08	0.08	0.05	0.08	0.52	0.34	0.24		0.37	0.07	
Control Delay	36.7	34.5	18.5	36.7	34.5	13.9	27.5	6.4		40.2	15.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	36.7	34.5	18.5	36.7	34.5	13.9	27.5	6.4		40.2	15.0	
LOS	D	C	B	D	C	B	C	A		D	B	
Approach Delay		29.5			16.5			10.0			23.2	
Approach LOS		C			B			B			C	

Intersection Summary

Cycle Length: 84
Actuated Cycle Length: 84
Offset: 53 (63%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.52
Intersection Signal Delay: 14.3 — Intersection LOS: B
Intersection Capacity Utilization 33.0% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 23: Airway Rd & Enrico Fermi Dr

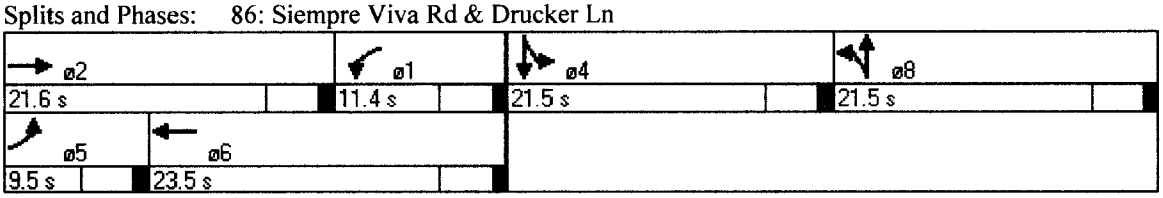
ø1	ø2	ø3	ø4
13.5 s	31.5 s	13.5 s	25.5 s
ø6	ø5	ø7	ø8
26.6 s	18.4 s	13.5 s	25.5 s

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.974			0.976			0.869			0.943	
Flt Protected	0.950			0.950			0.950				0.978	
Satd. Flow (prot)	1770	4953	0	1770	4963	0	1770	1619	0	0	1718	0
Flt Permitted	0.950			0.950			0.950				0.978	
Satd. Flow (perm)	1770	4953	0	1770	4963	0	1770	1619	0	0	1718	0
Satd. Flow (RTOR)		25			47			7			28	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	18	111	23	53	222	43	13	1	6	28	7	26
Adj. Flow (vph)	20	121	25	58	241	47	14	1	7	30	8	28
Lane Group Flow (vph)	20	146	0	58	288	0	14	8	0	0	66	0
Turn Type	Prot			Prot			Split			Split		
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases												
Total Split (s)	9.5	21.6	0.0	11.4	23.5	0.0	21.5	21.5	0.0	21.5	21.5	0.0
Act Effct Green (s)	6.9	42.7		7.1	44.7		6.7	6.7			7.8	
Actuated g/C Ratio	0.09	0.56		0.09	0.59		0.09	0.09			0.10	
v/c Ratio	0.12	0.05		0.35	0.10		0.09	0.05			0.33	
Control Delay	33.0	8.2		38.8	7.5		32.8	20.9			24.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay	33.0	8.2		38.8	7.5		32.8	20.9			24.8	
LOS	C	A		D	A		C	C			C	
Approach Delay		11.2			12.8			28.4			24.8	
Approach LOS		B			B			C			C	

Intersection Summary

Cycle Length: 76
Actuated Cycle Length: 76
Offset: 48 (63%), Referenced to phase 2:EBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.35
Intersection Signal Delay: 14.2 — Intersection LOS: B
Intersection Capacity Utilization 28.8% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 86: Siempre Viva Rd & Drucker Ln

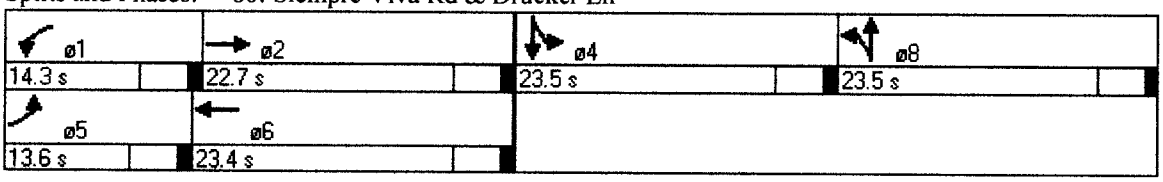


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.980			0.962			0.864			0.978	
Flt Protected	0.950			0.950			0.950				0.976	
Satd. Flow (prot)	1770	4984	0	1770	4892	0	1770	1609	0	0	1778	0
Flt Permitted	0.950			0.950			0.950				0.976	
Satd. Flow (perm)	1770	4984	0	1770	4892	0	1770	1609	0	0	1778	0
Satd. Flow (RTOR)		31			87			19			11	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	44	210	32	91	231	79	26	2	17	49	33	16
Adj. Flow (vph)	48	231	35	100	254	87	29	2	19	54	36	18
Lane Group Flow (vph)	48	266	0	100	341	0	29	21	0	0	108	0
Turn Type	Prot			Prot			Split			Split		
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases												
Total Split (s)	13.6	22.7	0.0	14.3	23.4	0.0	23.5	23.5	0.0	23.5	23.5	0.0
Act Effct Green (s)	8.2	42.2		10.4	46.4		7.3	7.3			10.2	
Actuated g/C Ratio	0.10	0.50		0.12	0.55		0.09	0.09			0.12	
v/c Ratio	0.28	0.11		0.46	0.12		0.19	0.13			0.48	
Control Delay	38.6	12.2		44.1	2.9		37.8	18.7			37.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay	38.6	12.2		44.1	2.9		37.8	18.7			37.2	
LOS	D	B		D	A		D	B			D	
Approach Delay		16.2			12.2			29.8			37.2	
Approach LOS		B			B			C			D	

Intersection Summary

Cycle Length: 84
Actuated Cycle Length: 84
Offset: 47 (56%), Referenced to phase 2:EBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.48
Intersection Signal Delay: 17.5 — Intersection LOS: B
Intersection Capacity Utilization 31.9% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 86: Siempre Viva Rd & Drucker Ln

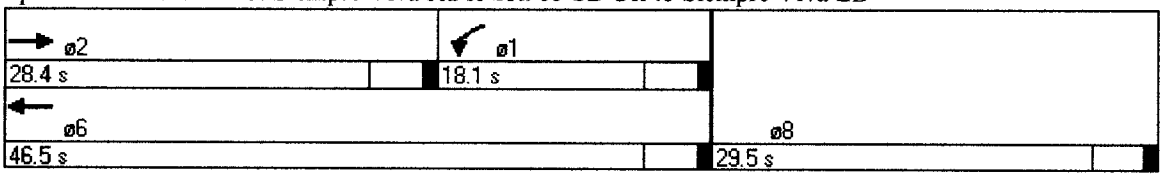


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.91	0.91	0.97	0.91	1.00	0.88
Frt	0.978					0.850
Flt Protected			0.950			
Satd. Flow (prot)	4973	0	3433	5085	0	2787
Flt Permitted			0.950			
Satd. Flow (perm)	4973	0	3433	5085	0	2787
Satd. Flow (RTOR)	43					1137
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	234	40	94	539	0	291
Adj. Flow (vph)	254	43	102	586	0	316
Lane Group Flow (vph)	297	0	102	586	0	316
Turn Type			Prot			custom
Protected Phases	2		1	6		
Permitted Phases						8
Total Split (s)	28.4	0.0	18.1	46.5	0.0	29.5
Act Effct Green (s)	47.5		12.5	62.0		6.0
Actuated g/C Ratio	0.62		0.16	0.82		0.08
v/c Ratio	0.10		0.18	0.14		0.25
Control Delay	4.2		27.2	1.7		0.5
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	4.2		27.2	1.7		0.5
LOS	A		C	A		A
Approach Delay	4.2			5.5		
Approach LOS	A			A		

Intersection Summary

Cycle Length: 76
Actuated Cycle Length: 76
Offset: 22 (29%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.25
Intersection Signal Delay: 4.0 — Intersection LOS: A
Intersection Capacity Utilization 22.3% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 28: Siempre Viva Rd & SR905 SB Off to Siempre Viva EB

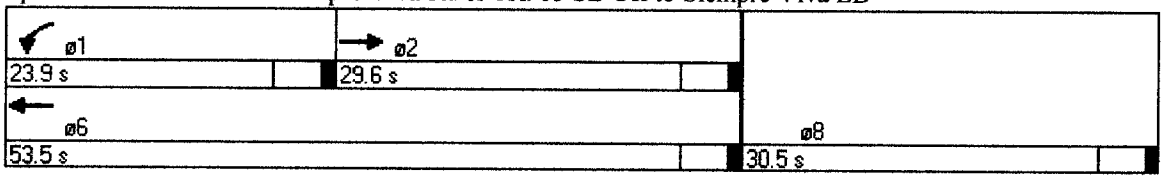


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.91	0.91	0.97	0.91	1.00	0.88
Frt	0.945					0.850
Flt Protected			0.950			
Satd. Flow (prot)	4806	0	3433	5085	0	2787
Flt Permitted			0.950			
Satd. Flow (perm)	4806	0	3433	5085	0	2787
Satd. Flow (RTOR)	181					1052
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	369	216	287	530	0	133
Adj. Flow (vph)	377	220	293	541	0	136
Lane Group Flow (vph)	597	0	293	541	0	136
Turn Type			Prot			custom
Protected Phases	2		1	6		
Permitted Phases						8
Total Split (s)	29.6	0.0	23.9	53.5	0.0	30.5
Act Effct Green (s)	56.5		11.5	72.8		6.0
Actuated g/C Ratio	0.67		0.14	0.87		0.07
v/c Ratio	0.18		0.63	0.12		0.12
Control Delay	2.1		38.0	1.7		0.2
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	2.1		38.0	1.7		0.2
LOS	A		D	A		A
Approach Delay	2.1			14.5		
Approach LOS	A			B		

Intersection Summary

Cycle Length: 84
Actuated Cycle Length: 84
Offset: 26 (31%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.63
Intersection Signal Delay: 8.5 — Intersection LOS: A
Intersection Capacity Utilization 26.8% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 28: Siempre Viva Rd & SR905 SB Off to Siempre Viva EB



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑			↱
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	525	424	0	0	209
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	559	451	0	0	222
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		281	733			
pX, platoon unblocked						
vC, conflicting volume	451				637	150
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	451				637	150
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	74
cM capacity (veh/h)	1106				409	869

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1
Volume Total	186	186	186	150	150	150	222
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	222
cSH	1700	1700	1700	1700	1700	1700	869
Volume to Capacity	0.11	0.11	0.11	0.09	0.09	0.09	0.26
Queue Length 95th (ft)	0	0	0	0	0	0	25
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	10.6
Lane LOS							B
Approach Delay (s)	0.0			0.0			10.6
Approach LOS							B

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	33.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑			↱
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	502	661	0	0	156
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	0	512	674	0	0	159
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		281	733			
pX, platoon unblocked						
vC, conflicting volume	674				845	225
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	674				845	225
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	80
cM capacity (veh/h)	913				302	778

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1
Volume Total	171	171	171	225	225	225	159
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	159
cSH	1700	1700	1700	1700	1700	1700	778
Volume to Capacity	0.10	0.10	0.10	0.13	0.13	0.13	0.20
Queue Length 95th (ft)	0	0	0	0	0	0	19
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	10.8
Lane LOS							B
Approach Delay (s)	0.0			0.0			10.8
Approach LOS							B

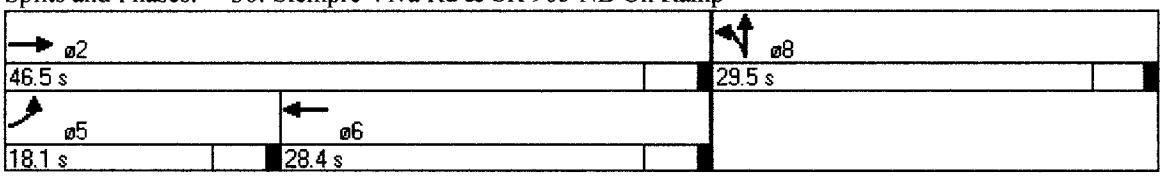
Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	36.0%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	1.00	0.86	0.86	1.00	1.00	0.88	1.00	1.00	1.00
Frt					0.948	0.850			0.850			
Flt Protected	0.950							0.953				
Satd. Flow (prot)	3433	5085	0	0	4556	1362	0	1775	2787	0	0	0
Flt Permitted	0.950							0.953				
Satd. Flow (perm)	3433	5085	0	0	4556	1362	0	1775	2787	0	0	0
Satd. Flow (RTOR)					142	143			321			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	74	451	0	0	260	274	164	3	308	0	0	0
Adj. Flow (vph)	77	470	0	0	271	285	171	3	321	0	0	0
Lane Group Flow (vph)	77	470	0	0	413	143	0	174	321	0	0	0
Turn Type	Prot					Perm	Split		Perm			
Protected Phases	5	2			6		8	8				
Permitted Phases						6			8			
Total Split (s)	18.1	46.5	0.0	0.0	28.4	28.4	29.5	29.5	29.5	0.0	0.0	0.0
Act Effct Green (s)	7.4	55.0			47.8	47.8		13.0	13.0			
Actuated g/C Ratio	0.10	0.72			0.63	0.63		0.17	0.17			
v/c Ratio	0.23	0.13			0.14	0.16		0.57	0.43			
Control Delay	34.4	2.4			3.1	2.1		35.9	5.2			
Queue Delay	0.0	0.0			0.0	0.0		0.0	0.0			
Total Delay	34.4	2.4			3.1	2.1		35.9	5.2			
LOS	C	A			A	A		D	A			
Approach Delay		6.9			2.8			15.9				
Approach LOS		A			A			B				

Intersection Summary

Cycle Length: 76
Actuated Cycle Length: 76
Offset: 53 (70%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.57
Intersection Signal Delay: 8.3 — Intersection LOS: A
Intersection Capacity Utilization 33.9% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 30: Siempre Viva Rd & SR 905 NB On Ramp

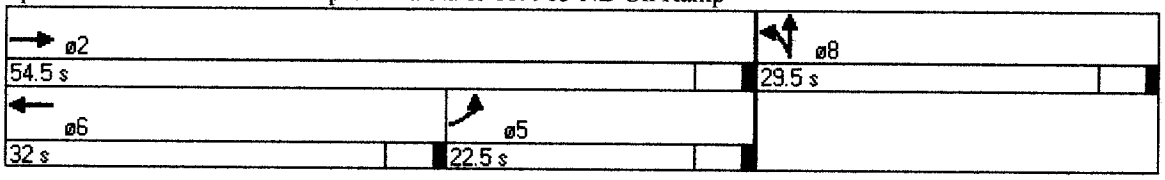


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	1.00	0.86	0.86	1.00	1.00	0.88	1.00	1.00	1.00
Frt					0.975	0.850			0.850			
Flt Protected	0.950							0.953				
Satd. Flow (prot)	3433	5085	0	0	4686	1362	0	1775	2787	0	0	0
Flt Permitted	0.950							0.953				
Satd. Flow (perm)	3433	5085	0	0	4686	1362	0	1775	2787	0	0	0
Satd. Flow (RTOR)					49	318			194			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	186	316	0	0	603	421	58	1	182	0	0	0
Adj. Flow (vph)	198	336	0	0	641	448	62	1	194	0	0	0
Lane Group Flow (vph)	198	336	0	0	771	318	0	63	194	0	0	0
Turn Type	Prot					Perm	Split		Perm			
Protected Phases	5	2			6		8	8				
Permitted Phases						6			8			
Total Split (s)	22.5	54.5	0.0	0.0	32.0	32.0	29.5	29.5	29.5	0.0	0.0	0.0
Act Effct Green (s)	10.5	67.4			52.9	52.9		8.6	8.6			
Actuated g/C Ratio	0.12	0.80			0.63	0.63		0.10	0.10			
v/c Ratio	0.46	0.08			0.26	0.33		0.35	0.42			
Control Delay	37.8	1.0			2.5	0.9		39.7	8.5			
Queue Delay	0.0	0.0			0.0	0.0		0.0	0.0			
Total Delay	37.8	1.0			2.5	0.9		39.7	8.5			
LOS	D	A			A	A		D	A			
Approach Delay		14.6			2.0			16.1				
Approach LOS		B			A			B				

Intersection Summary

Cycle Length: 84
Actuated Cycle Length: 84
Offset: 40 (48%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.46
Intersection Signal Delay: 7.5 — Intersection LOS: A
Intersection Capacity Utilization 36.0% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 30: Siempre Viva Rd & SR 905 NB On Ramp

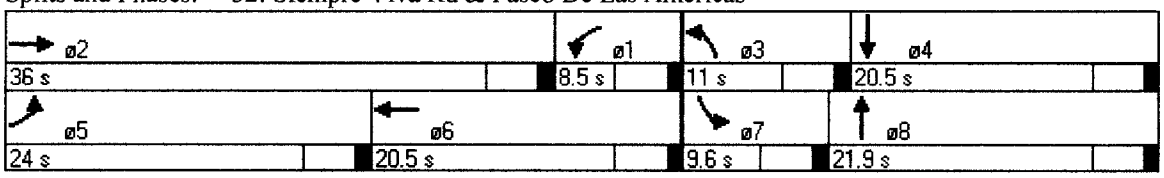


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850		0.994				0.850		0.958	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5085	1583	1770	3518	0	1770	3539	1583	1770	3391	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	5085	1583	1770	3518	0	1770	3539	1583	1770	3391	0
Satd. Flow (RTOR)			121		5				12		68	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	382	217	114	9	164	7	88	31	11	54	192	74
Adj. Flow (vph)	406	231	121	10	174	7	94	33	12	57	204	79
Lane Group Flow (vph)	406	231	121	10	181	0	94	33	12	57	283	0
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2						8			
Total Split (s)	24.0	36.0	36.0	8.5	20.5	0.0	11.0	21.9	21.9	9.6	20.5	0.0
Act Effct Green (s)	22.5	47.2	47.2	4.5	22.4		6.9	13.4	13.4	5.6	10.3	
Actuated g/C Ratio	0.30	0.62	0.62	0.06	0.29		0.09	0.18	0.18	0.07	0.14	
v/c Ratio	0.78	0.07	0.12	0.10	0.17		0.59	0.05	0.04	0.44	0.54	
Control Delay	34.0	6.1	1.6	36.0	23.5		49.5	25.8	14.2	45.2	26.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	34.0	6.1	1.6	36.0	23.5		49.5	25.8	14.2	45.2	26.4	
LOS	C	A	A	D	C		D	C	B	D	C	
Approach Delay		20.3			24.1			40.8			29.5	
Approach LOS		C			C			D			C	

Intersection Summary

Cycle Length: 76
Actuated Cycle Length: 76
Offset: 3 (4%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 25.0 — Intersection LOS: C
Intersection Capacity Utilization 51.8% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 32: Siempre Viva Rd & Paseo De Las Americas

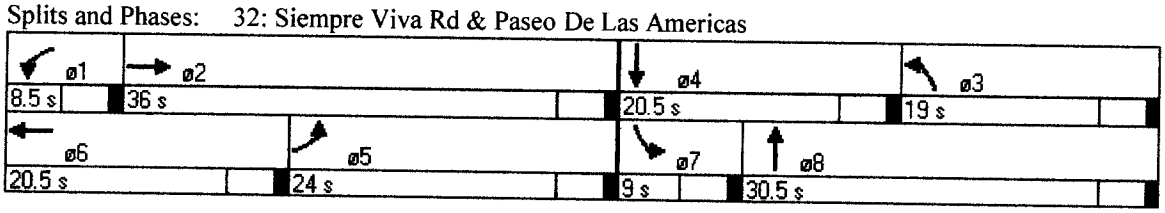


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850		0.996				0.850		0.919	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5085	1583	1770	3525	0	1770	3539	1583	1770	3253	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	5085	1583	1770	3525	0	1770	3539	1583	1770	3253	0
Satd. Flow (RTOR)			98		3				7		98	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	358	87	96	24	382	12	266	134	7	5	82	96
Adj. Flow (vph)	365	89	98	24	390	12	271	137	7	5	84	98
Lane Group Flow (vph)	365	89	98	24	402	0	271	137	7	5	182	0
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2						8			
Total Split (s)	24.0	36.0	36.0	8.5	20.5	0.0	19.0	30.5	30.5	9.0	20.5	0.0
Act Effct Green (s)	20.0	41.4	41.4	5.7	20.8		19.1	29.4	29.4	5.0	8.1	
Actuated g/C Ratio	0.24	0.49	0.49	0.07	0.25		0.23	0.35	0.35	0.06	0.10	
v/c Ratio	0.87	0.04	0.12	0.20	0.46		0.67	0.11	0.01	0.05	0.45	
Control Delay	52.5	13.5	3.9	48.2	42.6		38.1	18.4	10.9	36.4	19.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	52.5	13.5	3.9	48.2	42.6		38.1	18.4	10.9	36.4	19.1	
LOS	D	B	A	D	D		D	B	B	D	B	
Approach Delay		37.6			42.9			31.1			19.5	
Approach LOS		D			D			C			B	

Intersection Summary

Cycle Length: 84
Actuated Cycle Length: 84
Offset: 37 (44%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 35.2 — Intersection LOS: D
Intersection Capacity Utilization 64.2% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 32: Siempre Viva Rd & Paseo De Las Americas



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	16	162	11	12	141	10	29	10	0	10	5	18
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	20	205	14	15	178	13	37	13	0	13	6	23
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		1204			1284							
pX, platoon unblocked												
vC, conflicting volume	191			219			398	474	109	365	475	96
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	191			219			398	474	109	365	475	96
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			93	97	100	98	99	98
cM capacity (veh/h)	1380			1348			508	475	923	544	475	942

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1	SB 2
Volume Total	20	137	82	15	119	72	49	19	23
Volume Left	20	0	0	15	0	0	37	13	0
Volume Right	0	0	14	0	0	13	0	0	23
cSH	1380	1700	1700	1348	1700	1700	499	519	942
Volume to Capacity	0.01	0.08	0.05	0.01	0.07	0.04	0.10	0.04	0.02
Queue Length 95th (ft)	1	0	0	1	0	0	8	3	2
Control Delay (s)	7.6	0.0	0.0	7.7	0.0	0.0	13.0	12.2	8.9
Lane LOS	A			A			B	B	A
Approach Delay (s)	0.6			0.6			13.0	10.4	
Approach LOS							B	B	

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	27.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	40	71	28	9	362	8	55	9	3	3	10	46
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	47	83	33	10	421	9	64	10	3	3	12	53
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		1204			1284							
pX, platoon unblocked												
vC, conflicting volume	430			115			483	643	58	590	655	215
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	430			115			483	643	58	590	655	215
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			99			84	97	100	99	97	93
cM capacity (veh/h)	1126			1472			409	371	996	368	366	790

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1	SB 2
Volume Total	47	55	60	10	281	150	78	15	53
Volume Left	47	0	0	10	0	0	64	3	0
Volume Right	0	0	33	0	0	9	3	0	53
cSH	1126	1700	1700	1472	1700	1700	414	366	790
Volume to Capacity	0.04	0.03	0.04	0.01	0.17	0.09	0.19	0.04	0.07
Queue Length 95th (ft)	3	0	0	1	0	0	17	3	5
Control Delay (s)	8.3	0.0	0.0	7.5	0.0	0.0	15.7	15.3	9.9
Lane LOS	A			A			C	C	A
Approach Delay (s)	2.4			0.2			15.7	11.1	
Approach LOS							C	B	

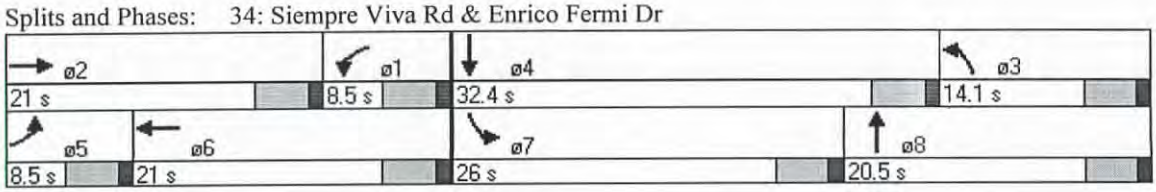
Intersection Summary			
Average Delay	3.3		
Intersection Capacity Utilization	34.0%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.988			0.899			0.959			0.938	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	1840	0	1770	3182	0	1770	3394	0	1770	3320	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	1840	0	1770	3182	0	1770	3394	0	1770	3320	0
Satd. Flow (RTOR)		5			123			40			17	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	47	116	10	10	49	102	89	88	33	240	20	14
Adj. Flow (vph)	57	140	12	12	59	123	107	106	40	289	24	17
Lane Group Flow (vph)	57	152	0	12	182	0	107	146	0	289	41	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Total Split (s)	8.5	21.0	0.0	8.5	21.0	0.0	14.1	20.5	0.0	26.0	32.4	0.0
Act Effct Green (s)	7.3	35.9		4.5	30.5		19.1	8.2		18.2	9.4	
Actuated g/C Ratio	0.10	0.47		0.06	0.40		0.25	0.11		0.24	0.12	
v/c Ratio	0.17	0.17		0.11	0.13		0.24	0.36		0.68	0.10	
Control Delay	44.3	10.9		37.1	8.3		22.2	24.9		42.9	36.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	44.3	10.9		37.1	8.3		22.2	24.9		42.9	36.0	
LOS	D	B		D	A		C	C		D	D	
Approach Delay		20.0			10.1			23.8			42.0	
Approach LOS		B			B			C			D	

Intersection Summary

Cycle Length: 76
Actuated Cycle Length: 76
Offset: 36 (47%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.68
Intersection Signal Delay: 26.4 — Intersection LOS: C
Intersection Capacity Utilization 40.2% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 34: Siempre Viva Rd & Enrico Fermi Dr

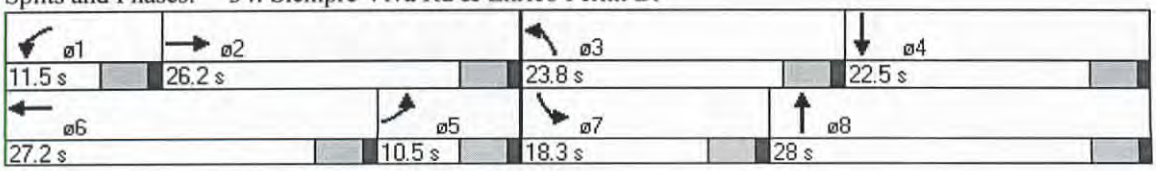


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.982			0.897			0.990			0.907	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	1829	0	1770	3175	0	1770	3504	0	1770	3210	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	1829	0	1770	3175	0	1770	3504	0	1770	3210	0
Satd. Flow (RTOR)		4			419			8			41	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	29	27	4	24	176	381	186	118	8	63	23	37
Adj. Flow (vph)	32	30	4	26	193	419	204	130	9	69	25	41
Lane Group Flow (vph)	32	34	0	26	612	0	204	139	0	69	66	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Total Split (s)	10.5	26.2	0.0	11.5	27.2	0.0	23.8	28.0	0.0	18.3	22.5	0.0
Act Effct Green (s)	6.4	45.1		7.3	43.9		14.9	14.6		9.2	7.0	
Actuated g/C Ratio	0.08	0.54		0.09	0.52		0.18	0.17		0.11	0.08	
v/c Ratio	0.12	0.03		0.17	0.33		0.65	0.23		0.36	0.22	
Control Delay	42.3	14.8		37.0	6.0		41.5	29.5		36.4	36.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	42.3	14.8		37.0	6.0		41.5	29.5		36.4	36.1	
LOS	D	B		D	A		D	C		D	D	
Approach Delay		28.1			7.2			36.7			36.2	
Approach LOS		C			A			D			D	

Intersection Summary

Cycle Length: 84
Actuated Cycle Length: 84
Offset: 46 (55%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.65
Intersection Signal Delay: 20.3 — Intersection LOS: C
Intersection Capacity Utilization 40.8% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 34: Siempre Viva Rd & Enrico Fermi Dr

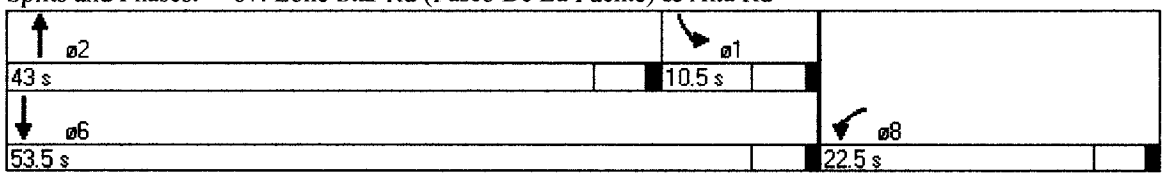


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850	0.997			
Flt Protected	0.950					
Satd. Flow (prot)	1770	1583	1857	0	1863	1863
Flt Permitted	0.950					
Satd. Flow (perm)	1770	1583	1857	0	1863	1863
Satd. Flow (RTOR)		2	2			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	9	2	475	10	0	101
Adj. Flow (vph)	10	2	516	11	0	110
Lane Group Flow (vph)	10	2	527	0	0	110
Turn Type		Perm			Prot	
Protected Phases	8		2		1	6
Permitted Phases		8				
Total Split (s)	22.5	22.5	43.0	0.0	10.5	53.5
Act Effct Green (s)	6.7	6.7	108.2			108.2
Actuated g/C Ratio	0.06	0.06	0.96			0.96
v/c Ratio	0.10	0.02	0.29			0.06
Control Delay	17.9	12.5	1.0			0.6
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	17.9	12.5	1.0			0.6
LOS	B	B	A			A
Approach Delay	17.0		1.0			0.6
Approach LOS	B		A			A

Intersection Summary

Cycle Length: 76
Actuated Cycle Length: 112.2
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.29
Intersection Signal Delay: 1.2 — Intersection LOS: A
Intersection Capacity Utilization 35.6% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 67: Lone Star Rd (Paseo De La Fuente) & Alta Rd

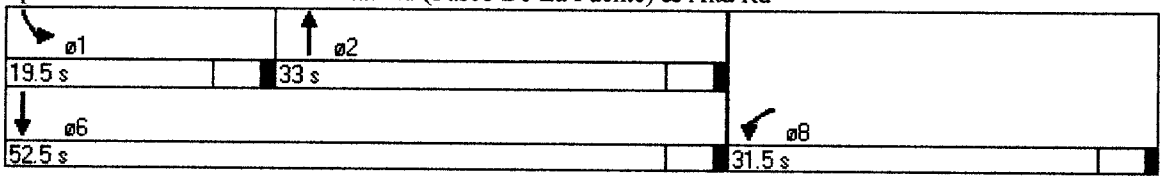


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850	0.980			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	1825	0	1770	1863
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1583	1825	0	1770	1863
Satd. Flow (RTOR)		1	11			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	10	1	74	13	2	340
Adj. Flow (vph)	11	1	80	14	2	370
Lane Group Flow (vph)	11	1	94	0	2	370
Turn Type		Perm			Prot	
Protected Phases	8		2		1	6
Permitted Phases		8				
Total Split (s)	31.5	31.5	33.0	0.0	19.5	52.5
Act Effct Green (s)	6.4	6.4	78.8		6.1	80.9
Actuated g/C Ratio	0.08	0.08	0.94		0.07	0.96
v/c Ratio	0.08	0.01	0.05		0.02	0.21
Control Delay	37.0	28.0	1.6		36.5	0.8
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	37.0	28.0	1.6		36.5	0.8
LOS	D	C	A		D	A
Approach Delay	36.3		1.6			1.0
Approach LOS	D		A			A

Intersection Summary

Cycle Length: 84
Actuated Cycle Length: 84
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.21
Intersection Signal Delay: 2.0 — Intersection LOS: A
Intersection Capacity Utilization 27.9% — ICU Level of Service A
Analysis Period (min) 15

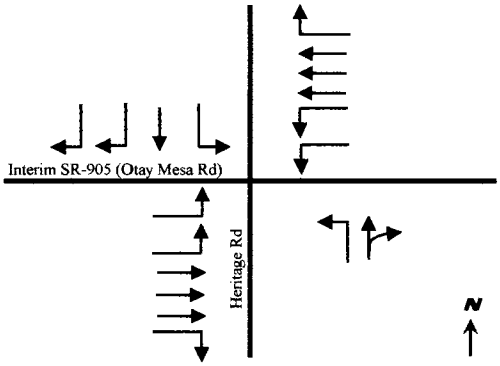
Splits and Phases: 67: Lone Star Rd (Paseo De La Fuente) & Alta Rd



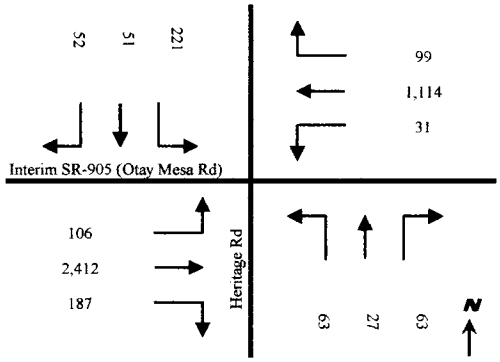
Existing + Project Phase 1 - ILV Analysis

Date of Analysis:	March 19, 2011	Intersection:	Otay Mesa Rd @ Heritage Rd
Analyst:	VSH	Peak Hour Analyzed:	AM Peak Hour
Condition Analyzed:	Existing + Phase 1		

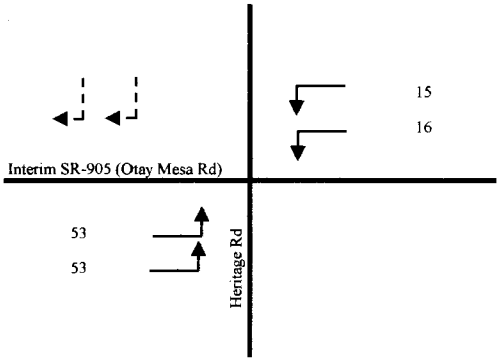
LANE GEOMETRY



TRAFFIC VOLUMES

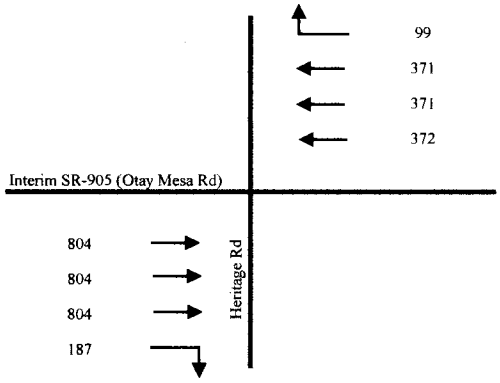


PHASE 1



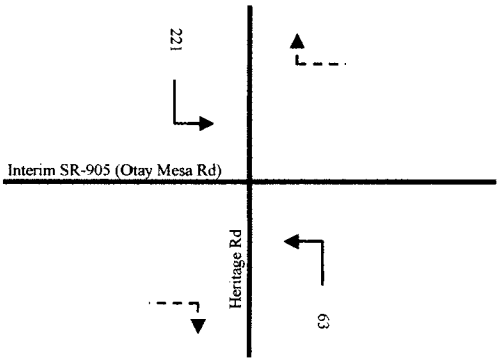
Phase 1 Critical ILV: 53

PHASE 2



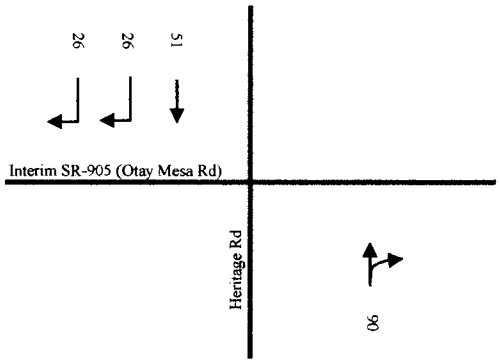
Phase 2 Critical ILV: 804

PHASE 3



Phase 3 Critical ILV: 221

PHASE 4



Phase 4 Critical ILV: 90

GRAND TOTAL ILV: **1,168**

OPERATING CONDITION **STABLE**

LEGEND

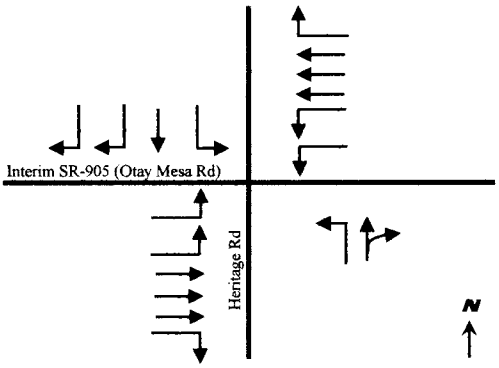
<1200 ILV = STABLE FLOW

1200 - 1500 ILV/HR = UNSTABLE FLOW

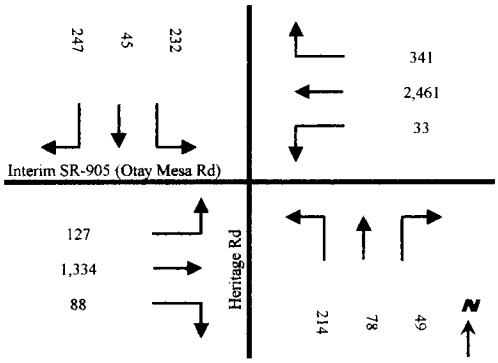
> 1500 ILV/HR = OVER CAPACITY

Date of Analysis:	March 19, 2011	Intersection:	Otay Mesa Rd @ Heritage Rd
Analyst:	DJH	Peak Hour Analyzed:	PM Peak Hour
Condition Analyzed:	Existing + Phase 1		

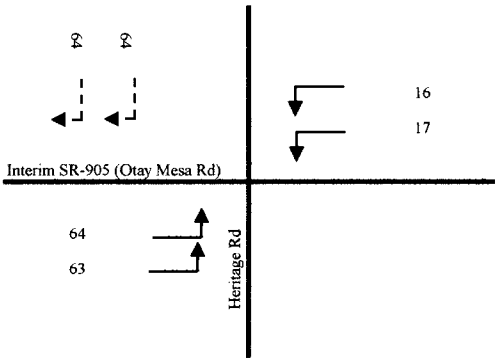
LANE GEOMETRY



TRAFFIC VOLUMES

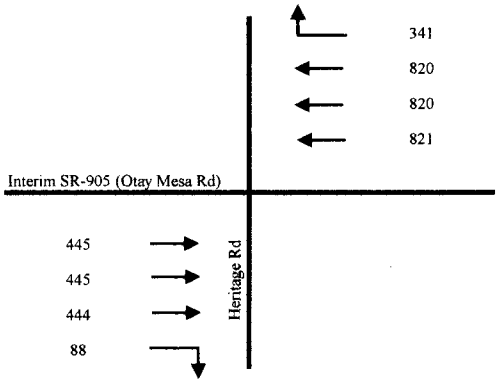


PHASE 1



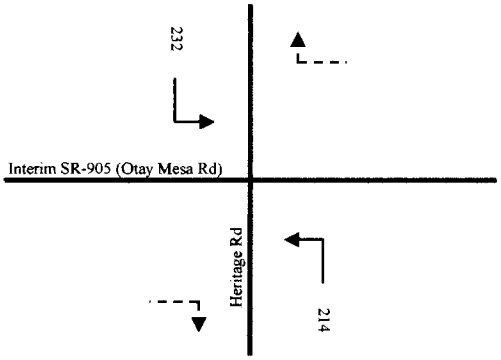
Phase 1 Critical ILV: 64

PHASE 2



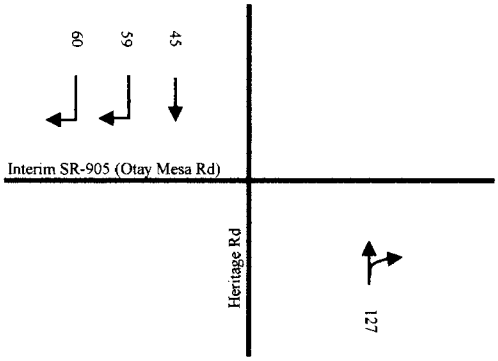
Phase 2 Critical ILV: 821

PHASE 3



Phase 3 Critical ILV: 232

PHASE 4



Phase 4 Critical ILV: 127

GRAND TOTAL ILV: **1,244**

OPERATING CONDITION **UNSTABLE**

LEGEND

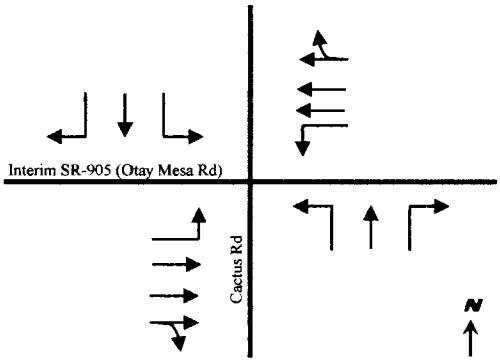
<1200 ILV = STABLE FLOW

1200 - 1500 ILV/HR = UNSTABLE FLOW

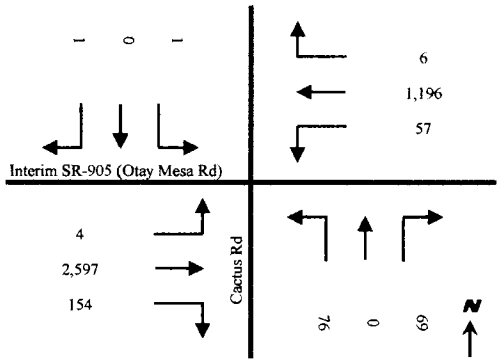
> 1500 ILV/HR = OVER CAPACITY

Date of Analysis:	March 19, 2011	Intersection:	Otay Mesa Rd @ Cactus Rd
Analyst:	USJC	Peak Hour Analyzed:	AM Peak Hour
Condition Analyzed:	Existing + Phase 1		

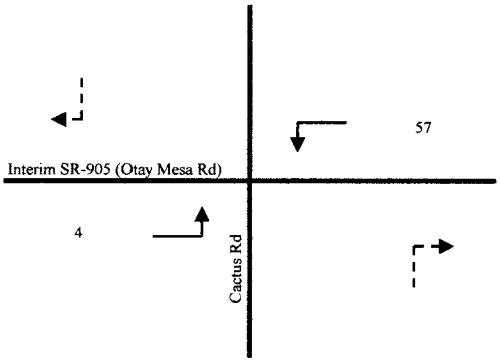
LANE GEOMETRY



TRAFFIC VOLUMES

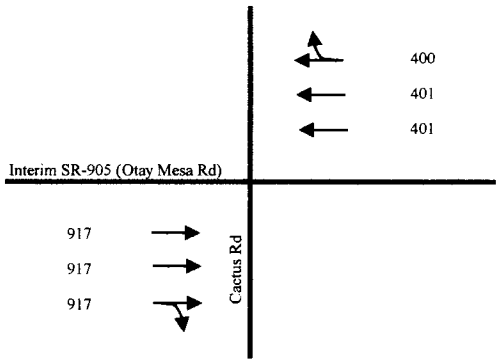


PHASE 1



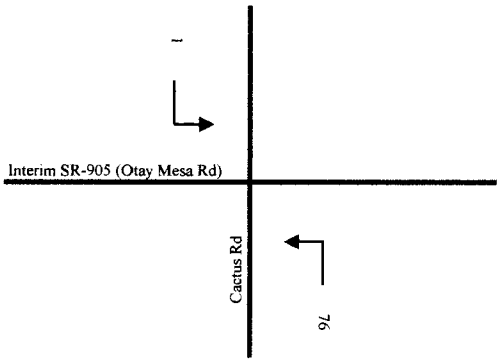
Phase 1 Critical ILV: 57

PHASE 2



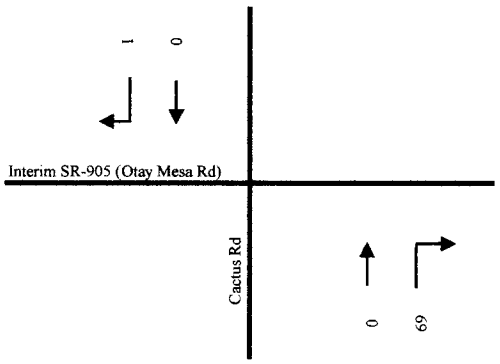
Phase 2 Critical ILV: 917

PHASE 3



Phase 3 Critical ILV: 76

PHASE 4



Phase 4 Critical ILV: 69

GRAND TOTAL ILV: 1,119

OPERATING CONDITION STABLE

LEGEND

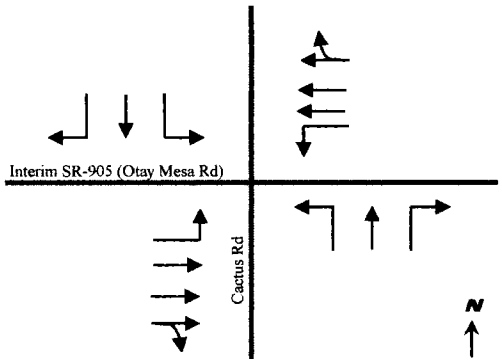
<1200 ILV = STABLE FLOW

1200 - 1500 ILV/HR = UNSTABLE FLOW

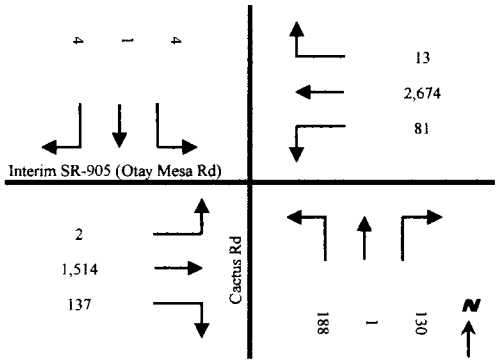
> 1500 ILV/HR = OVER CAPACITY

Date of Analysis:	March 19, 2011	Intersection:	Otay Mesa Rd @ Cactus Rd
Analyst:	USJ	Peak Hour Analyzed:	PM Peak Hour
Condition Analyzed:	Existing + Phase 1		

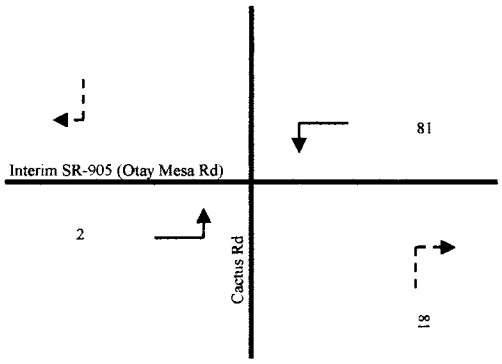
LANE GEOMETRY



TRAFFIC VOLUMES

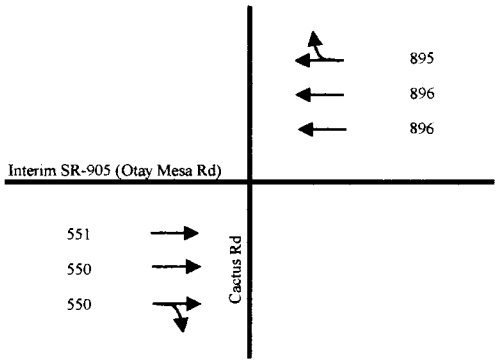


PHASE 1



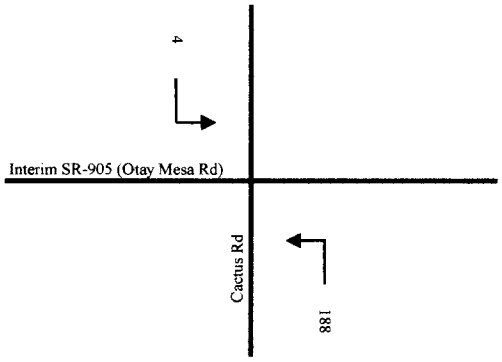
Phase 1 Critical ILV: 81

PHASE 2



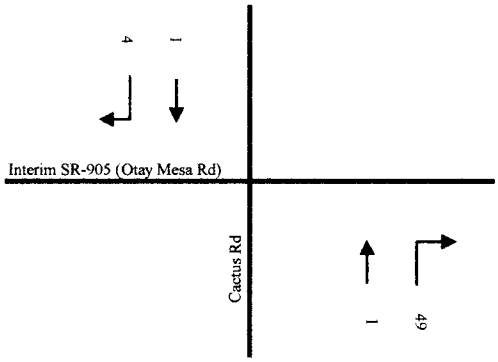
Phase 2 Critical ILV: 896

PHASE 3



Phase 3 Critical ILV: 188

PHASE 4



Phase 4 Critical ILV: 49

GRAND TOTAL ILV: 1,214

OPERATING CONDITION UNSTABLE

LEGEND

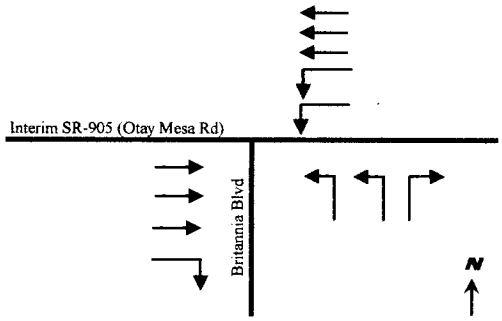
<1200 ILV = STABLE FLOW

1200 - 1500 ILV/HR = UNSTABLE FLOW

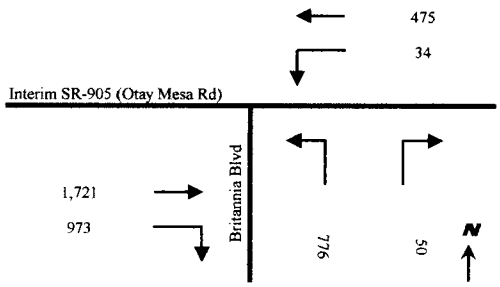
> 1500 ILV/HR = OVER CAPACITY

Date of Analysis:	March 19, 2011	Intersection:	Otay Mesa Rd @ Britannia Blvd
Analyst:	DJH	Peak Hour Analyzed:	AM Peak Hour
Condition Analyzed:	Existing + Phase 1		

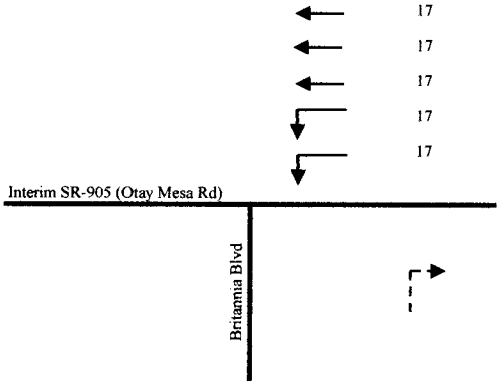
LANE GEOMETRY



TRAFFIC VOLUMES

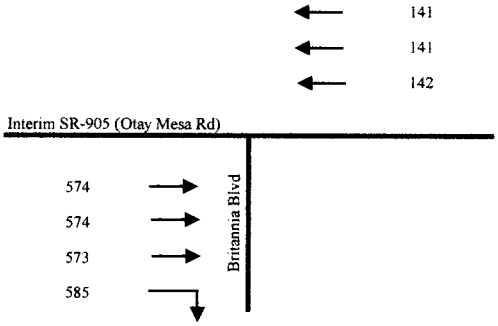


PHASE 1



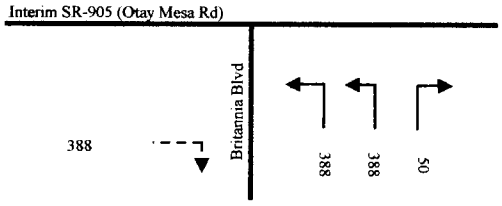
Phase 1 Critical ILV: 17

PHASE 2



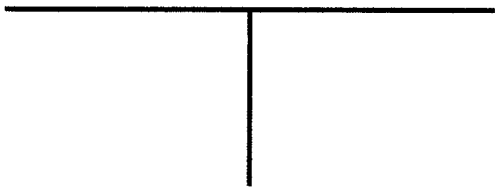
Phase 2 Critical ILV: 585

PHASE 3



Phase 3 Critical ILV: 388

PHASE 4



Phase 4 Critical ILV:

GRAND TOTAL ILV: 990

OPERATING CONDITION STABLE

LEGEND

<1200 ILV = STABLE FLOW

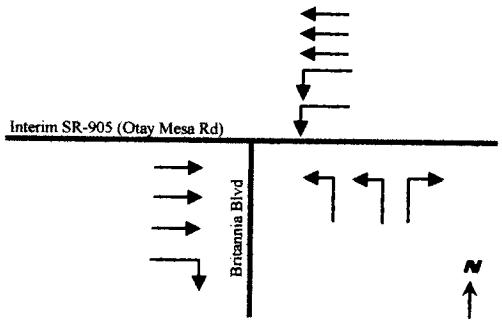
1200 - 1500 ILV/HR = UNSTABLE FLOW

> 1500 ILV/HR = OVER CAPACITY

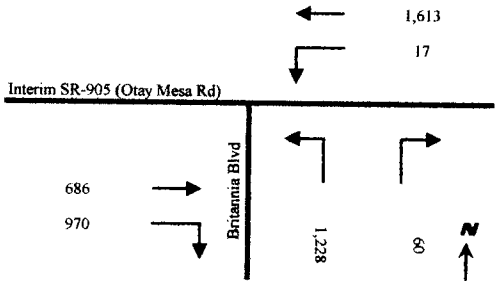
Date of Analysis:	March 19, 2011
Analyst:	VFH
Condition Analyzed:	Existing + Phase 1

Intersection:	Otay Mesa Rd @ Britannia Blvd
Peak Hour Analyzed:	PM Peak Hour

LANE GEOMETRY



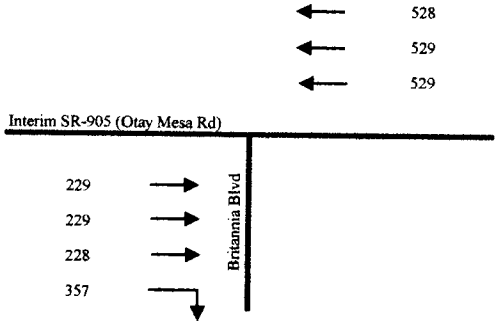
TRAFFIC VOLUMES



PHASE 1

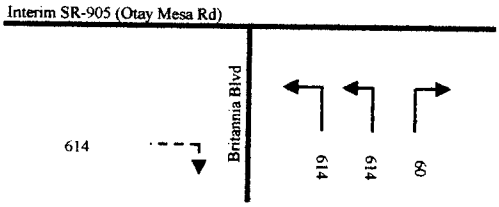
Phase 1 Critical ILV: 9

PHASE 2



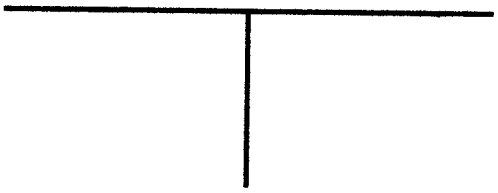
Phase 2 Critical ILV: 529

PHASE 3



Phase 3 Critical ILV: 614

PHASE 4



Phase 4 Critical ILV:

GRAND TOTAL ILV: 1,152

OPERATING CONDITION STABLE

LEGEND

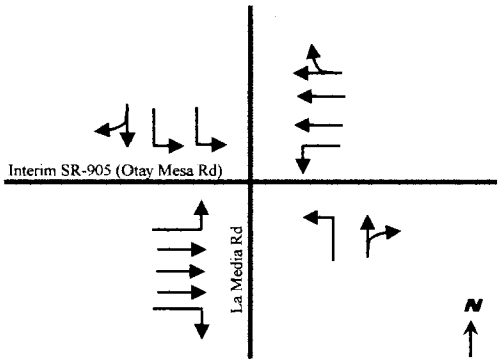
<1200 ILV = STABLE FLOW

1200 - 1500 ILV/HR = UNSTABLE FLOW

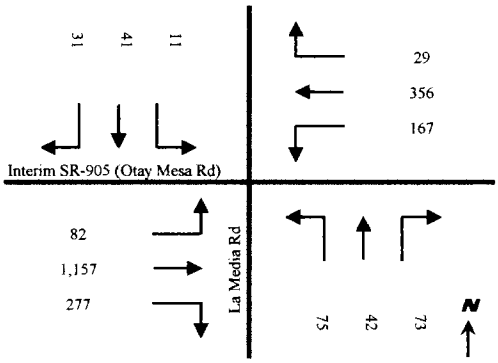
> 1500 ILV/HR = OVER CAPACITY

Date of Analysis:	March 19, 2011	Intersection:	Otay Mesa Rd @ La Media Rd
Analyst:	VJH	Peak Hour Analyzed:	AM Peak Hour
Condition Analyzed:	Existing + Phase 1		

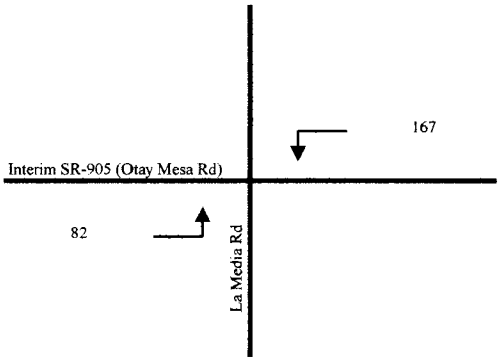
LANE GEOMETRY



TRAFFIC VOLUMES

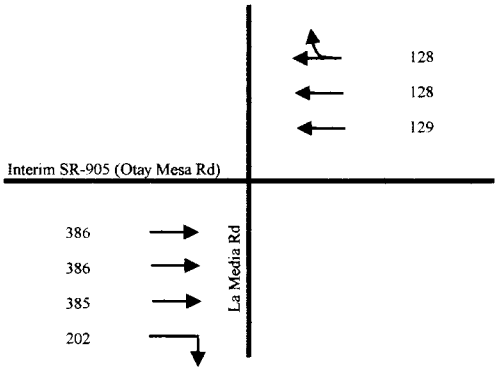


PHASE 1



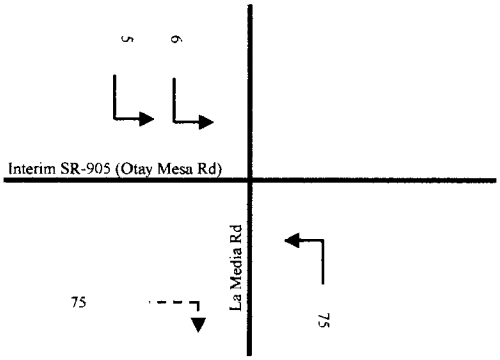
Phase 1 Critical ILV: 167

PHASE 2



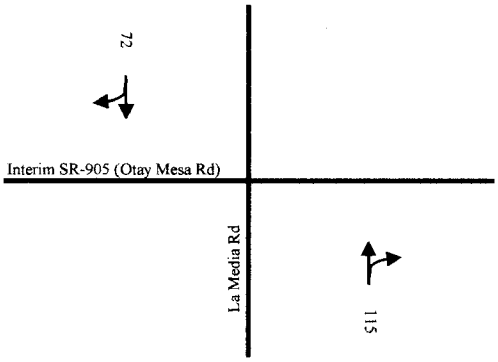
Phase 2 Critical ILV: 386

PHASE 3



Phase 3 Critical ILV: 75

PHASE 4



Phase 4 Critical ILV: 115

GRAND TOTAL ILV:	**743**
OPERATING CONDITION	**STABLE**

LEGEND

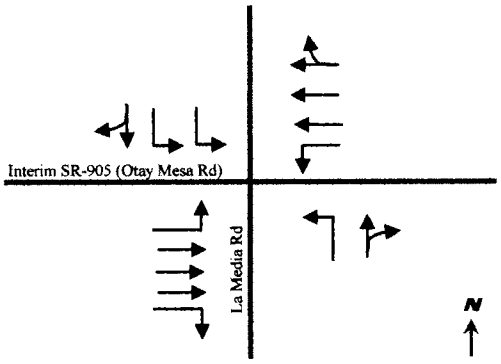
<1200 ILV = STABLE FLOW

1200 - 1500 ILV/HR = UNSTABLE FLOW

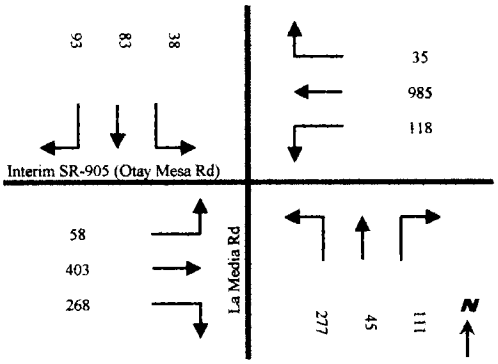
> 1500 ILV/HR = OVER CAPACITY

Date of Analysis:	March 19, 2011	Intersection:	Otay Mesa Rd @ La Media Rd
Analyst:	VJH	Peak Hour Analyzed:	PM Peak Hour
Condition Analyzed:	Existing + Phase 1		

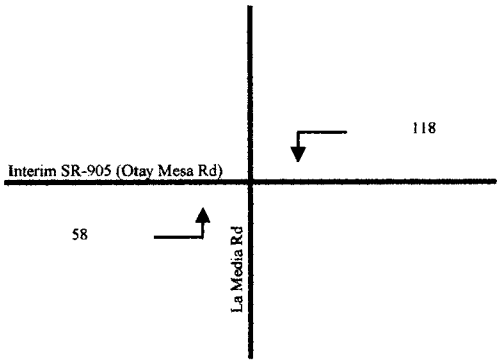
LANE GEOMETRY



TRAFFIC VOLUMES

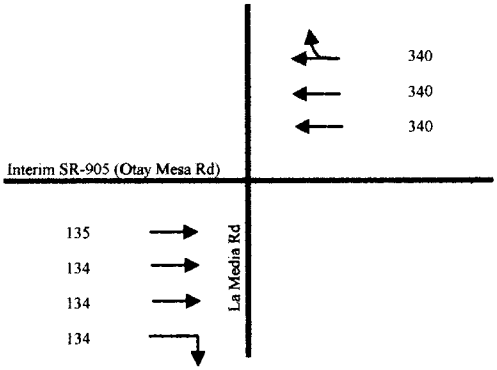


PHASE 1



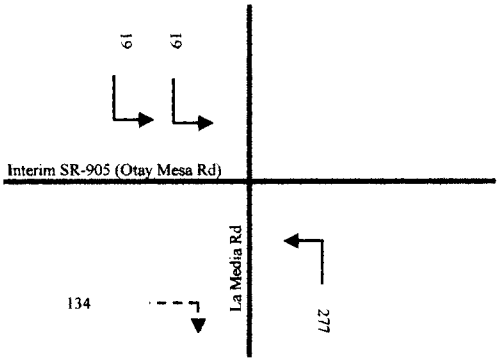
Phase 1 Critical ILV: 118

PHASE 2



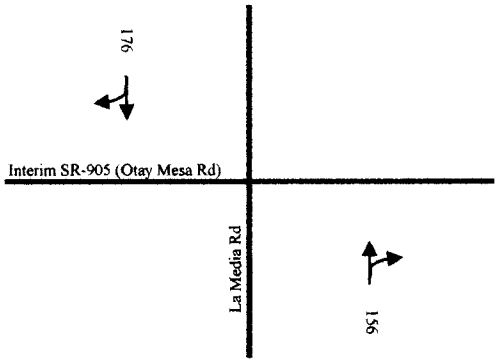
Phase 2 Critical ILV: 340

PHASE 3



Phase 3 Critical ILV: 277

PHASE 4



Phase 4 Critical ILV: 176

GRAND TOTAL ILV:	**911**
OPERATING CONDITION	**STABLE**

LEGEND

<1200 ILV = STABLE FLOW

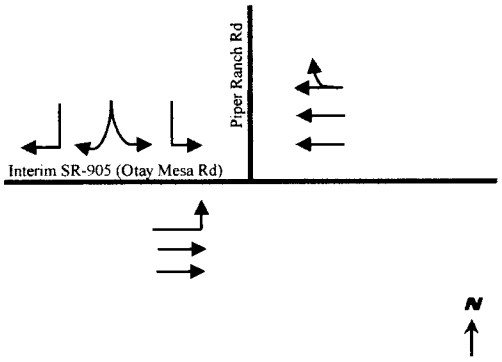
1200 - 1500 ILV/HR = UNSTABLE FLOW

> 1500 ILV/HR = OVER CAPACITY

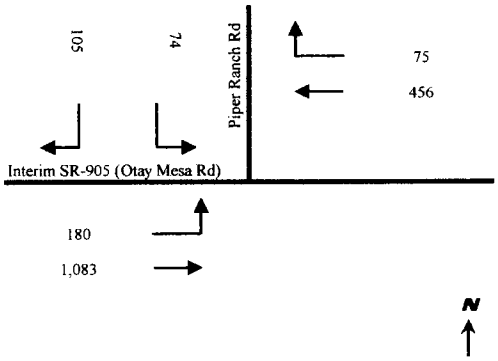
Date of Analysis:	March 19, 2011
Analyst:	DJK
Condition Analyzed:	Existing + Phase 1

Intersection:	Otay Mesa Rd @ Piper Ranch Rd
Peak Hour Analyzed:	AM Peak Hour

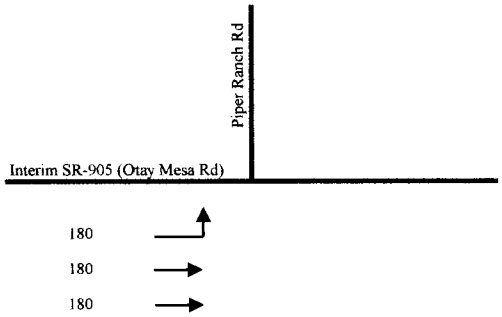
LANE GEOMETRY



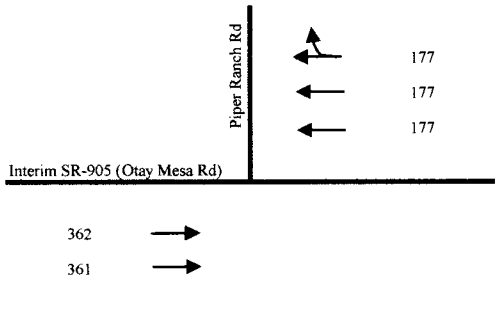
TRAFFIC VOLUMES



PHASE 1



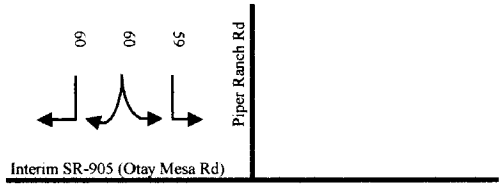
PHASE 2



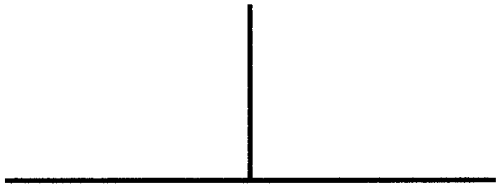
Phase 1 Critical ILV:	180

Phase 2 Critical ILV:	362

PHASE 3



PHASE 4



Phase 3 Critical ILV:	60

Phase 4 Critical ILV:	

GRAND TOTAL ILV:	**602**
OPERATING CONDITION	**STABLE**

LEGEND

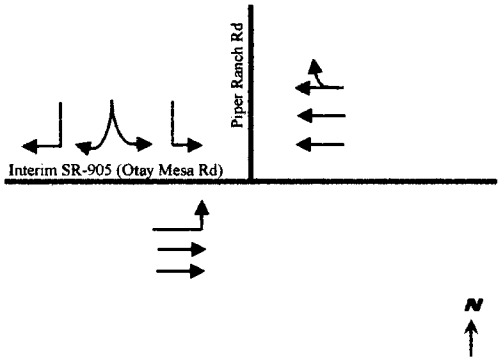
<1200 ILV = STABLE FLOW

1200 - 1500 ILV/HR = UNSTABLE FLOW

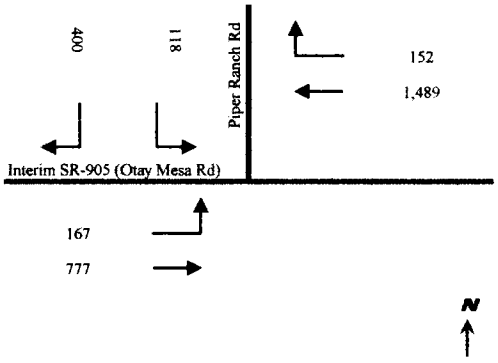
> 1500 ILV/HR = OVER CAPACITY

Date of Analysis:	March 19, 2011	Intersection:	Otay Mesa Rd @ Piper Ranch Rd
Analyst:	BSH	Peak Hour Analyzed:	PM Peak Hour
Condition Analyzed:	Existing + Phase 1		

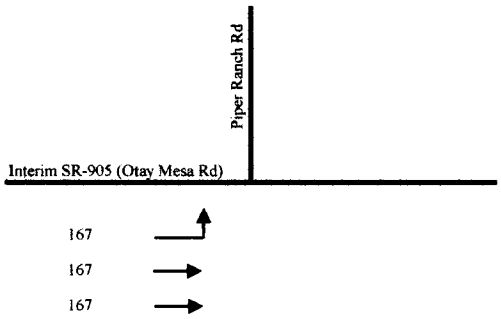
LANE GEOMETRY



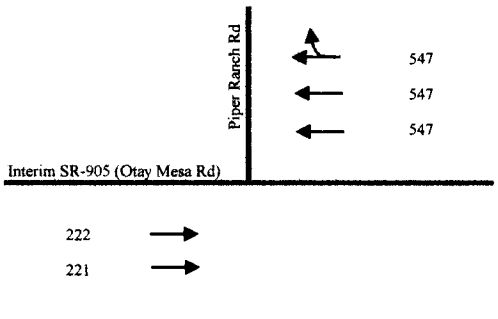
TRAFFIC VOLUMES



PHASE 1

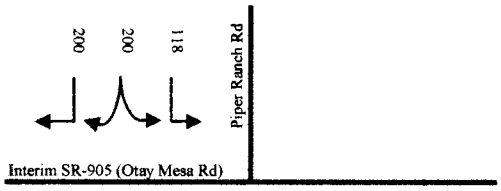


PHASE 2

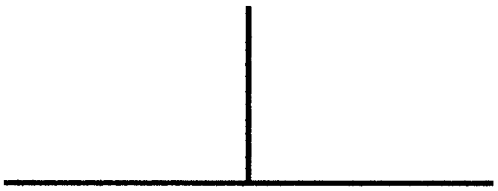


Phase 1 Critical ILV:	167	Phase 2 Critical ILV:	547

PHASE 3



PHASE 4



Phase 3 Critical ILV:	200	Phase 4 Critical ILV:	

GRAND TOTAL ILV:	**914**
OPERATING CONDITION	**STABLE**

LEGEND

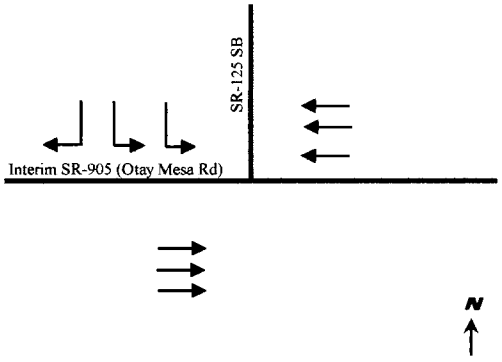
<1200 ILV = STABLE FLOW

1200 - 1500 ILV/HR = UNSTABLE FLOW

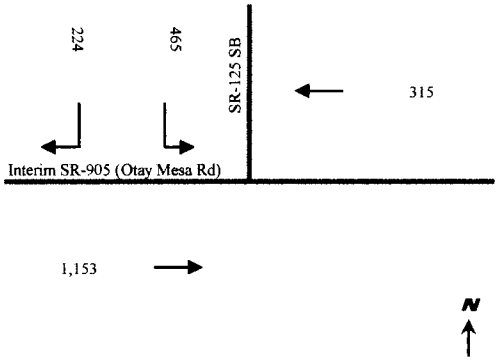
> 1500 ILV/HR = OVER CAPACITY

Date of Analysis:	March 19, 2011	Intersection:	Otay Mesa Rd @SR-125 SB
Analyst:	USJC	Peak Hour Analyzed:	AM Peak Hour
Condition Analyzed:	Existing + Phase 1		

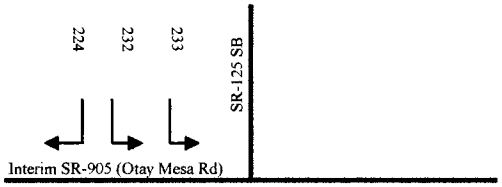
LANE GEOMETRY



TRAFFIC VOLUMES



PHASE 1



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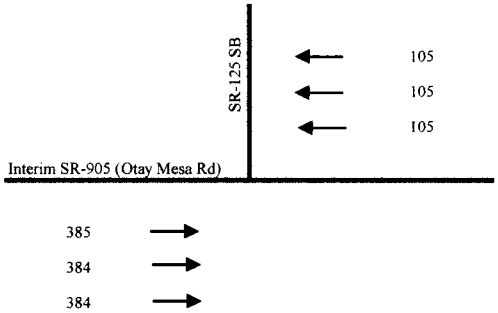
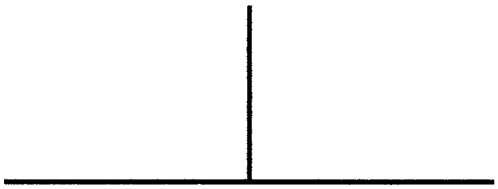


Phase 1 Critical ILV: 233

Phase 2 Critical ILV: 385

PHASE 3

PHASE 4



Phase 3 Critical ILV:

Phase 4 Critical ILV:

GRAND TOTAL ILV: 618

OPERATING CONDITION STABLE

LEGEND

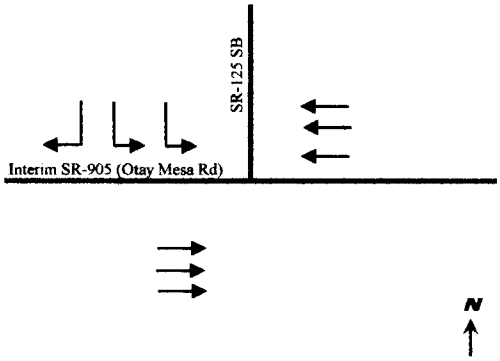
<1200 ILV = STABLE FLOW

1200 - 1500 ILV/HR = UNSTABLE FLOW

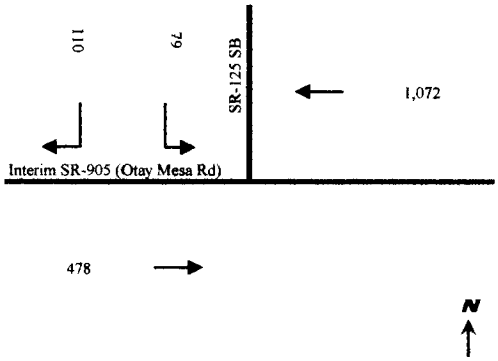
> 1500 ILV/HR = OVER CAPACITY

Date of Analysis:	March 19, 2011	Intersection:	Otay Mesa Rd @SR-125 SB
Analyst:	BSH	Peak Hour Analyzed:	PM Peak Hour
Condition Analyzed:	Existing + Phase 1		

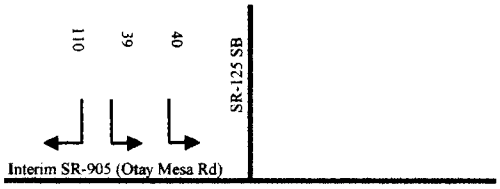
LANE GEOMETRY



TRAFFIC VOLUMES



PHASE 1



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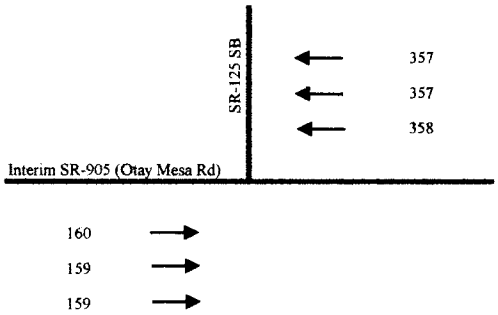
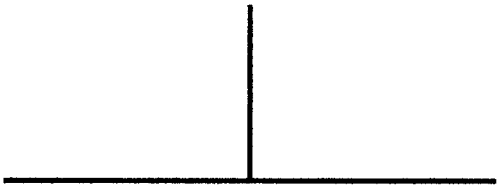


Phase 1 Critical ILV: 110

Phase 2 Critical ILV: 358

PHASE 3



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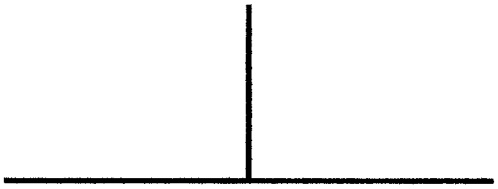


Phase 3 Critical ILV:

Phase 4 Critical ILV:

GRAND TOTAL ILV: 468

OPERATING CONDITION STABLE

LEGEND

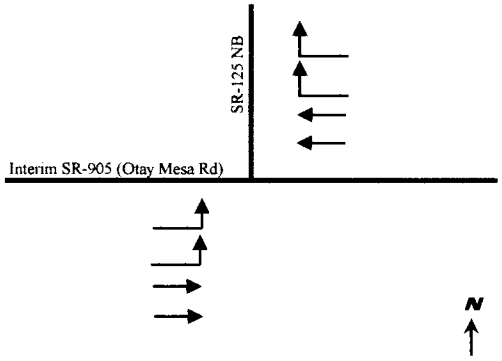
<1200 ILV = STABLE FLOW

1200 - 1500 ILV/HR = UNSTABLE FLOW

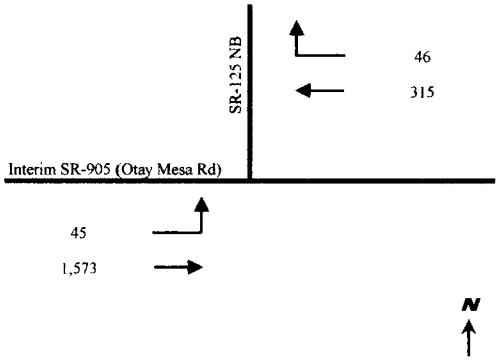
> 1500 ILV/HR = OVER CAPACITY

Date of Analysis:	March 19, 2011	Intersection:	Otay Mesa Rd @ SR-125 NB
Analyst:	USH	Peak Hour Analyzed:	AM Peak Hour
Condition Analyzed:	Existing + Phase 1		

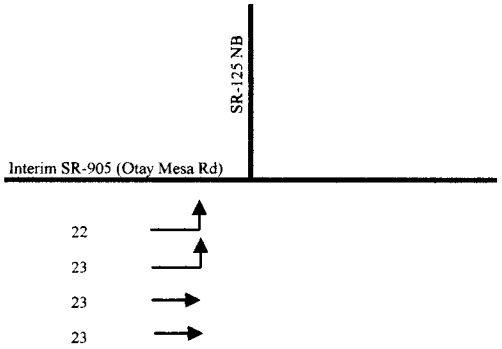
LANE GEOMETRY



TRAFFIC VOLUMES



PHASE 1



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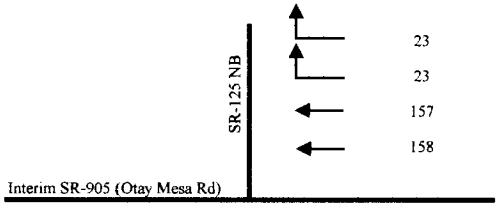
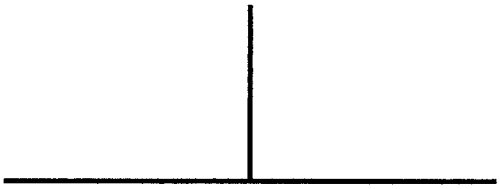


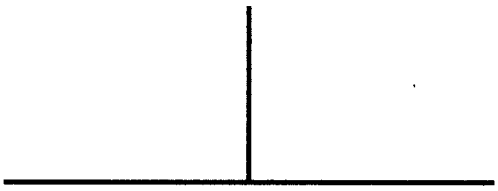
Phase 1 Critical ILV: 23

Phase 2 Critical ILV: 764

PHASE 3



PHASE 4



Phase 3 Critical ILV:

Phase 4 Critical ILV:

GRAND TOTAL ILV: 787

OPERATING CONDITION STABLE

LEGEND

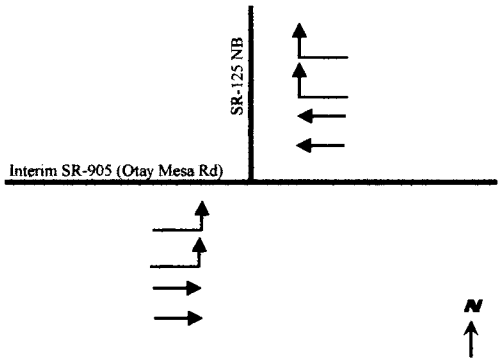
<1200 ILV = STABLE FLOW

1200 - 1500 ILV/HR = UNSTABLE FLOW

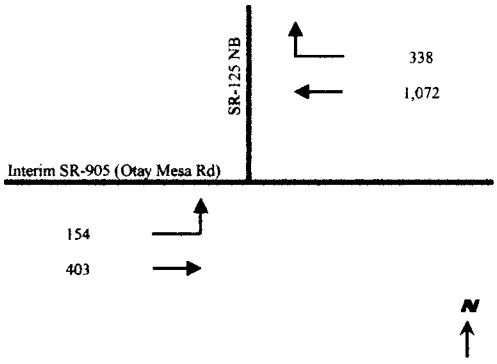
> 1500 ILV/HR = OVER CAPACITY

Date of Analysis:	March 19, 2011	Intersection:	Otay Mesa Rd @ SR-125 NB
Analyst:	VSH	Peak Hour Analyzed:	PM Peak Hour
Condition Analyzed:	Existing + Phase 1		

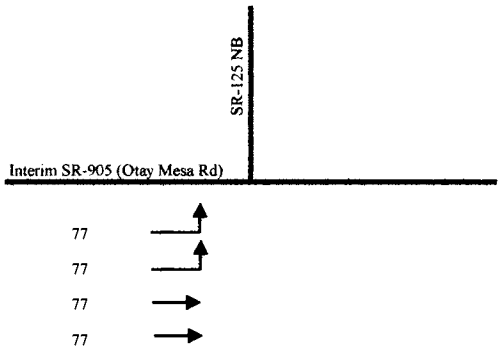
LANE GEOMETRY



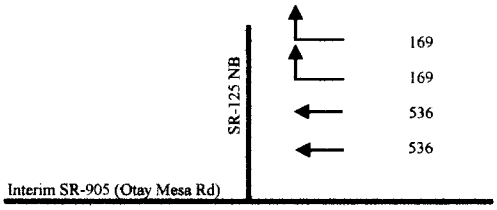
TRAFFIC VOLUMES



PHASE 1



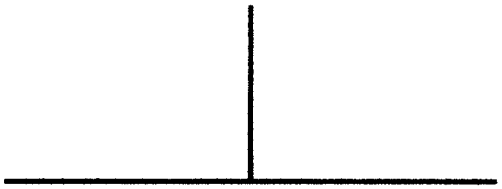
PHASE 2



Phase 1 Critical ILV: 77

Phase 2 Critical ILV: 536

PHASE 3



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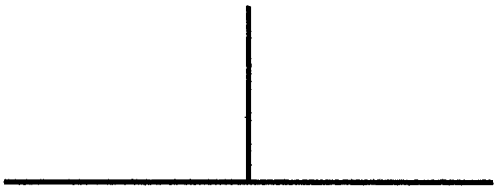


Phase 3 Critical ILV:

Phase 4 Critical ILV:

GRAND TOTAL ILV: 613

OPERATING CONDITION STABLE

LEGEND

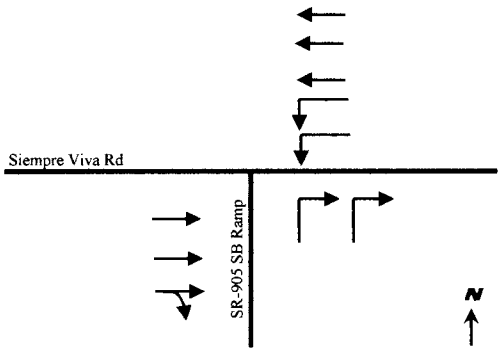
<1200 ILV = STABLE FLOW

1200 - 1500 ILV/HR = UNSTABLE FLOW

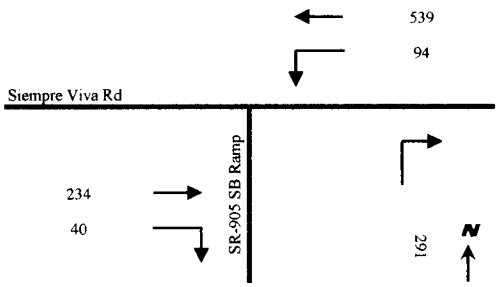
> 1500 ILV/HR = OVER CAPACITY

Date of Analysis:	March 19, 2011	Intersection:	Siempre Viva Rd @ SR-905 SB Ramp
Analyst:	*VSM*	Peak Hour Analyzed:	AM Peak Hour
Condition Analyzed:	Existing + Phase 1		

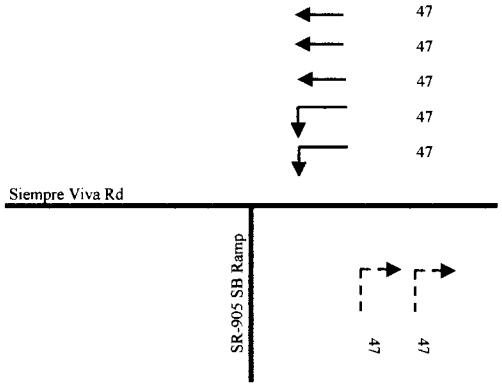
LANE GEOMETRY



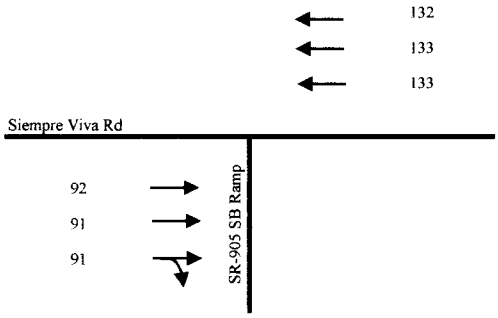
TRAFFIC VOLUMES



PHASE 1



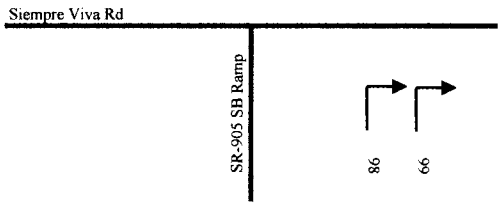
PHASE 2



Phase 1 Critical ILV: 47

Phase 2 Critical ILV: 133

PHASE 3



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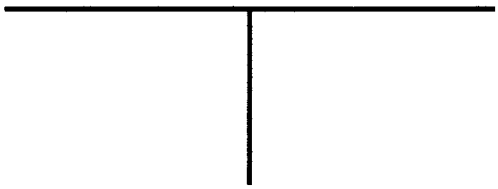


Phase 3 Critical ILV: 99

Phase 4 Critical ILV:

GRAND TOTAL ILV: 279

OPERATING CONDITION STABLE

LEGEND

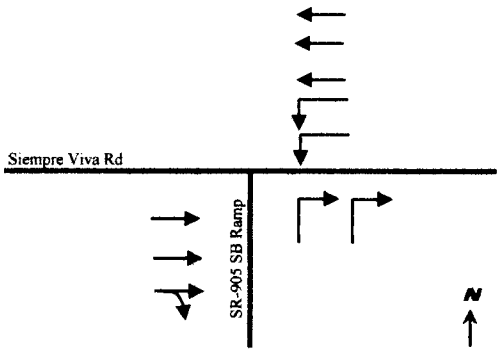
<1200 ILV = STABLE FLOW

1200 - 1500 ILV/HR = UNSTABLE FLOW

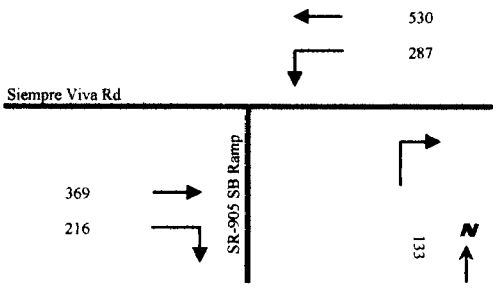
> 1500 ILV/HR = OVER CAPACITY

Date of Analysis:	March 19, 2011	Intersection:	Siempre Viva Rd @ SR-905 SB Ramp
Analyst:	VSH	Peak Hour Analyzed:	PM Peak Hour
Condition Analyzed:	Existing + Phase 1		

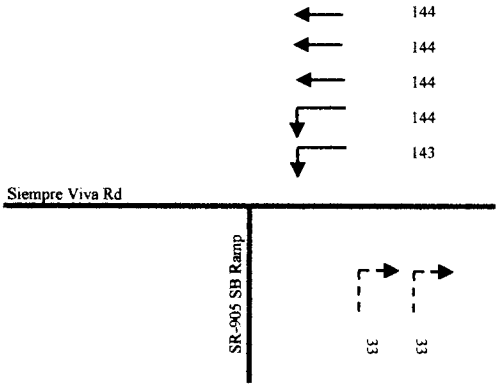
LANE GEOMETRY



TRAFFIC VOLUMES



PHASE 1



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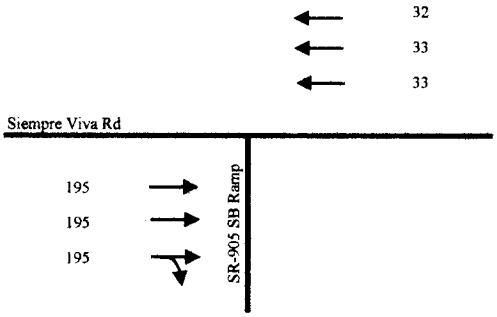
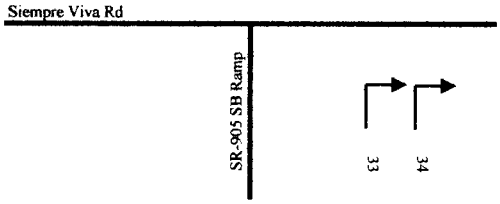


Phase 1 Critical ILV: 144

Phase 2 Critical ILV: 195

PHASE 3



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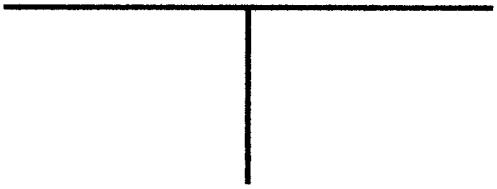


Phase 3 Critical ILV: 34

Phase 4 Critical ILV:

GRAND TOTAL ILV: **373**

OPERATING CONDITION **STABLE**

LEGEND

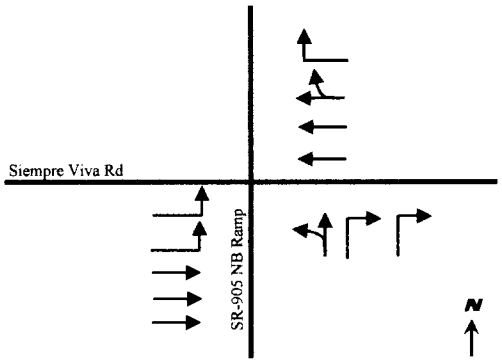
<1200 ILV = STABLE FLOW

1200 - 1500 ILV/HR = UNSTABLE FLOW

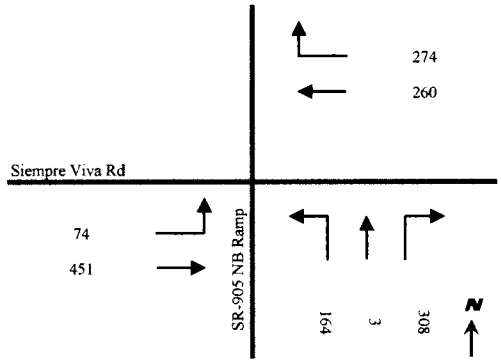
> 1500 ILV/HR = OVER CAPACITY

Date of Analysis:	March 19, 2011	Intersection:	Siempre Viva Rd & SR-905 NB
Analyst:	TGW	Peak Hour Analyzed:	AM Peak Hour
Condition Analyzed:	Existing + Phase 1		

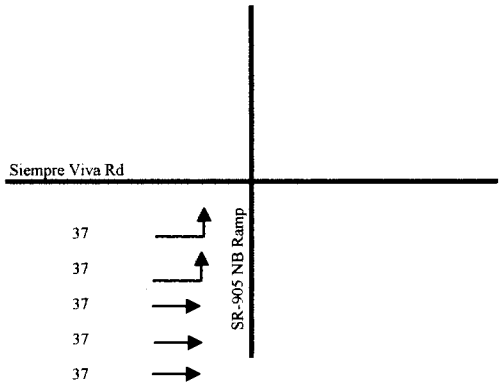
LANE GEOMETRY



TRAFFIC VOLUMES

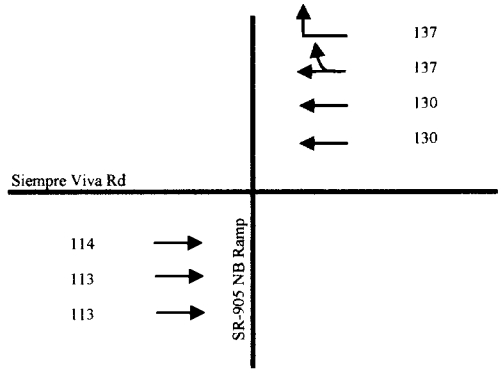


PHASE 1



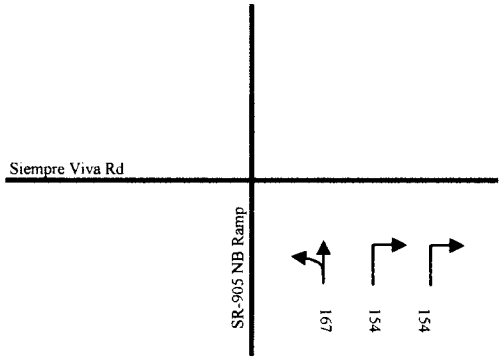
Phase 1 Critical ILV: 37

PHASE 2



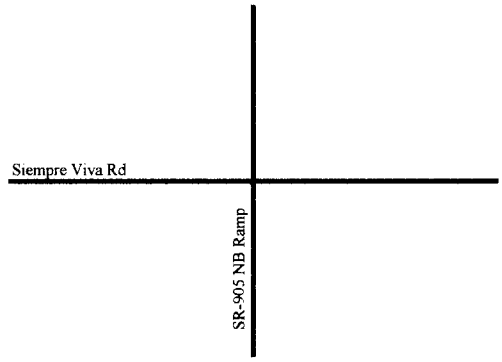
Phase 2 Critical ILV: 137

PHASE 3



Phase 3 Critical ILV: 167

PHASE 4



Phase 4 Critical ILV:

GRAND TOTAL ILV: **341**

OPERATING CONDITION **STABLE**

LEGEND

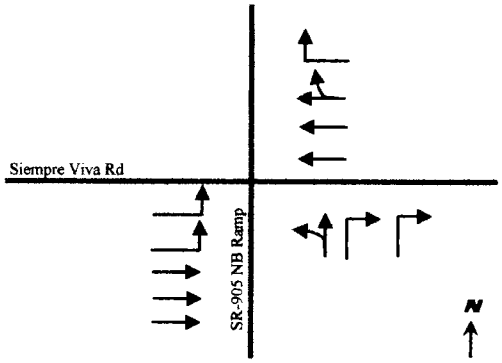
<1200 ILV = STABLE FLOW

1200 - 1500 ILV/HR = UNSTABLE FLOW

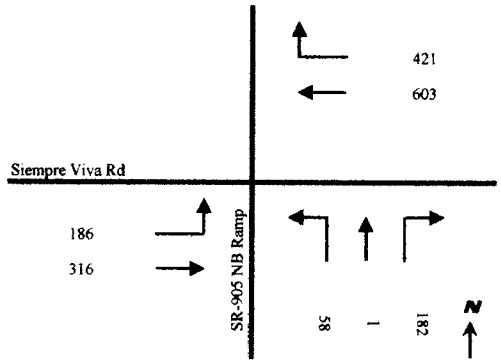
> 1500 ILV/HR = OVER CAPACITY

Date of Analysis:	March 19, 2011	Intersection:	Siempre Viva Rd & SR-905 NB
Analyst:	VJH	Peak Hour Analyzed:	PM Peak Hour
Condition Analyzed:	Existing + Phase 1		

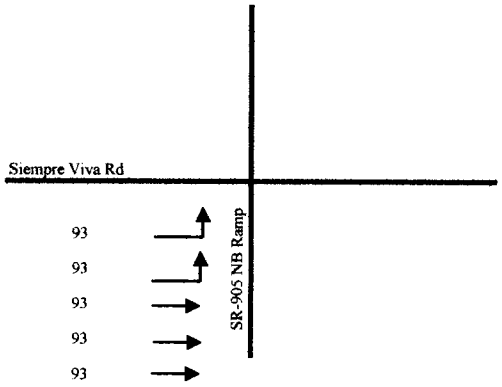
LANE GEOMETRY



TRAFFIC VOLUMES

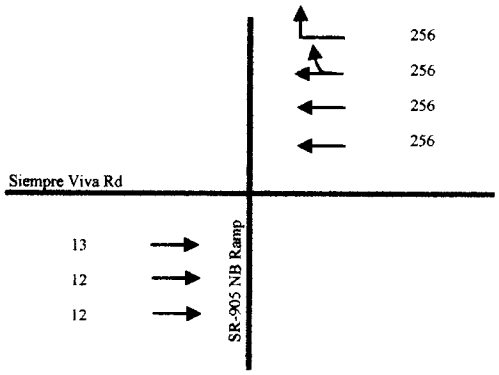


PHASE 1



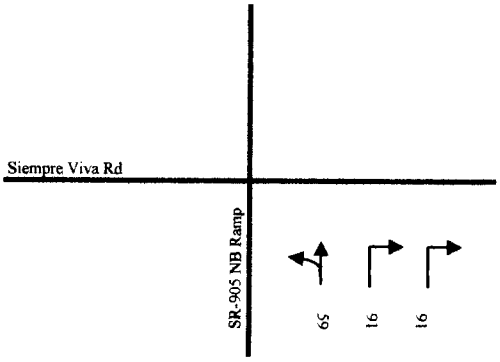
Phase 1 Critical ILV: 93

PHASE 2



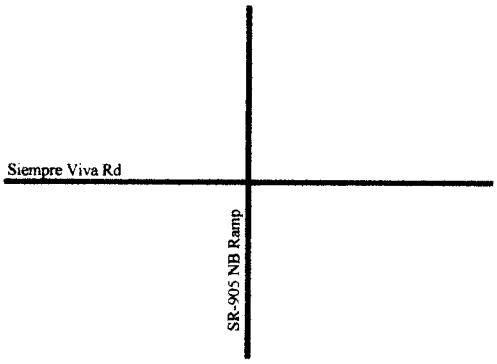
Phase 2 Critical ILV: 256

PHASE 3



Phase 3 Critical ILV: 91

PHASE 4



Phase 4 Critical ILV:

GRAND TOTAL ILV: **440**

OPERATING CONDITION **STABLE**

LEGEND

<1200 ILV = STABLE FLOW

1200 - 1500 ILV/HR = UNSTABLE FLOW

> 1500 ILV/HR = OVER CAPACITY

Existing + Project Phase 1 – Queuing Summaries

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	129	2941	228	38	1359	121	77	110	270	62	63
v/c Ratio	0.57	0.88	0.17	0.37	0.43	0.09	0.41	0.92	1.15	0.47	0.25
Control Delay	79.2	22.2	0.6	69.9	8.2	1.0	71.6	103.6	160.8	79.2	16.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.2	22.2	0.6	69.9	8.2	1.0	71.6	103.6	160.8	79.2	16.6
Queue Length 50th (ft)	64	799	0	18	182	8	73	62	~313	60	0
Queue Length 95th (ft)	92	688	10	m34	223	14	120	#157	#437	100	21
Internal Link Dist (ft)		1361			2600			2637		1263	
Turn Bay Length (ft)	550		510	550		550	200		440		440
Base Capacity (vph)	235	3359	1356	102	3132	1307	189	119	235	169	310
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.88	0.17	0.37	0.43	0.09	0.41	0.92	1.15	0.37	0.20

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	135	1419	94	35	2618	363	228	135	247	48	263
v/c Ratio	0.61	0.49	0.10	0.15	0.92	0.28	0.68	0.71	0.93	0.43	0.67
Control Delay	85.8	21.4	3.3	60.5	29.6	2.5	73.7	84.5	109.6	87.2	43.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	85.8	21.4	3.3	60.5	29.6	2.5	73.7	84.5	109.6	87.2	43.9
Queue Length 50th (ft)	76	337	0	18	647	45	235	130	272	52	92
Queue Length 95th (ft)	#176	407	29	m18	769	m69	332	203	#443	99	135
Internal Link Dist (ft)		1361			2600			2637		1263	
Turn Bay Length (ft)	550		510	550		550	200		440		440
Base Capacity (vph)	223	2870	984	266	2832	1298	337	246	271	258	392
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.49	0.10	0.13	0.92	0.28	0.68	0.55	0.91	0.19	0.67

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBR	SBL	SBR
Lane Group Flow (vph)	5	3396	70	1484	94	85	1	1
v/c Ratio	0.06	0.95	0.59	0.38	0.59	0.27	0.01	0.00
Control Delay	58.2	10.6	77.9	3.1	80.6	2.0	64.0	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.2	10.6	77.9	3.1	80.6	2.0	64.0	0.0
Queue Length 50th (ft)	4	138	72	19	91	0	1	0
Queue Length 95th (ft)	m6	m738	m83	253	133	0	6	0
Internal Link Dist (ft)		2600		2650				
Turn Bay Length (ft)	550		550		250	120	25	25
Base Capacity (vph)	89	3591	128	3944	239	398	202	306
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.95	0.55	0.38	0.39	0.21	0.00	0.00

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	2	1757	86	2859	200	1	138	4	1	4
v/c Ratio	0.02	0.64	0.53	0.89	0.60	0.00	0.34	0.03	0.01	0.03
Control Delay	31.5	15.4	42.9	16.7	37.8	24.0	7.2	36.5	36.0	24.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.5	15.4	42.9	16.7	37.8	24.0	7.2	36.5	36.0	24.5
Queue Length 50th (ft)	1	157	45	199	97	0	0	2	1	0
Queue Length 95th (ft)	m2	#410	m59	#880	150	4	42	12	6	10
Internal Link Dist (ft)		2600		2650		2628			1880	
Turn Bay Length (ft)	550		550		250		120	25		25
Base Capacity (vph)	105	2751	169	3207	351	470	502	190	366	314
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.64	0.51	0.89	0.57	0.00	0.27	0.02	0.00	0.01

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	2099	1187	41	579	946	61
v/c Ratio	0.82	0.81	0.35	0.20	0.95	0.12
Control Delay	19.6	10.4	40.6	3.0	47.2	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.6	10.4	40.6	3.0	47.2	6.7
Queue Length 50th (ft)	386	509	21	25	224	0
Queue Length 95th (ft)	406	688	48	15	#291	21
Internal Link Dist (ft)	2650			5401	660	
Turn Bay Length (ft)		540	550			
Base Capacity (vph)	2566	1471	116	2907	994	502
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.81	0.35	0.20	0.95	0.12

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	707	1000	18	1663	1266	62
v/c Ratio	0.37	0.65	0.19	0.79	0.79	0.08
Control Delay	9.9	10.8	24.7	11.3	22.7	3.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.9	10.8	24.7	11.3	22.7	3.2
Queue Length 50th (ft)	82	642	9	113	250	0
Queue Length 95th (ft)	43	312	m12	#139	325	18
Internal Link Dist (ft)	2650			5401	660	
Turn Bay Length (ft)		540	550			
Base Capacity (vph)	1904	1531	95	2098	1766	844
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.65	0.19	0.79	0.72	0.07

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	94	1330	318	192	442	86	132	13	83
v/c Ratio	0.45	0.72	0.33	0.64	0.20	0.38	0.26	0.07	0.39
Control Delay	19.0	9.1	2.3	30.6	5.5	34.6	10.5	35.2	24.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.0	9.1	2.3	30.6	5.5	34.6	10.5	35.2	24.8
Queue Length 50th (ft)	38	69	11	71	10	38	17	3	21
Queue Length 95th (ft)	m43	#278	m46	152	82	72	54	11	55
Internal Link Dist (ft)		5401			908		520		2547
Turn Bay Length (ft)	550		500	550				150	
Base Capacity (vph)	224	1855	973	337	2225	233	526	181	394
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.72	0.33	0.57	0.20	0.37	0.25	0.07	0.21

Intersection Summary

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	64	448	298	131	1133	308	173	42	195
v/c Ratio	0.43	0.30	0.29	0.56	0.62	0.78	0.26	0.24	0.66
Control Delay	42.9	9.8	1.0	29.8	14.8	44.1	6.9	42.1	33.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.9	9.8	1.0	29.8	14.8	44.1	6.9	42.1	33.9
Queue Length 50th (ft)	47	45	4	63	138	151	18	11	67
Queue Length 95th (ft)	66	87	4	m108	#275	233	54	27	129
Internal Link Dist (ft)		5401			908		520		2547
Turn Bay Length (ft)	550		500	550				150	
Base Capacity (vph)	154	1479	1038	253	1823	470	744	175	376
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.30	0.29	0.52	0.62	0.66	0.23	0.24	0.52

Intersection Summary

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	207	1245	610	142	64
v/c Ratio	0.42	0.44	0.26	0.36	0.31
Control Delay	8.9	2.6	12.2	22.1	13.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	8.9	2.6	12.2	22.1	13.2
Queue Length 50th (ft)	62	27	66	19	0
Queue Length 95th (ft)	17	60	98	41	34
Internal Link Dist (ft)		1591	1489	1149	
Turn Bay Length (ft)	600				125
Base Capacity (vph)	498	2803	2302	974	454
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.42	0.44	0.26	0.15	0.14

Intersection Summary

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	169	785	1658	321	202
v/c Ratio	0.41	0.28	0.65	0.59	0.59
Control Delay	36.2	2.4	12.0	17.5	12.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	36.2	2.4	12.0	17.5	12.5
Queue Length 50th (ft)	99	17	122	30	0
Queue Length 95th (ft)	122	30	186	64	62
Internal Link Dist (ft)		1591	1489	1149	
Turn Bay Length (ft)	600				125
Base Capacity (vph)	411	2796	2570	937	504
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.41	0.28	0.65	0.34	0.40

Intersection Summary

Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	1373	375	554	267
v/c Ratio	0.41	0.11	0.69	0.47
Control Delay	2.0	8.8	30.9	5.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	2.0	8.8	30.9	5.8
Queue Length 50th (ft)	10	25	124	0
Queue Length 95th (ft)	49	50	143	39
Internal Link Dist (ft)	1489	570	1201	
Turn Bay Length (ft)				
Base Capacity (vph)	3363	3363	1563	866
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.41	0.11	0.35	0.31

Intersection Summary

Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	537	1204	89	124
v/c Ratio	0.13	0.29	0.21	0.57
Control Delay	1.4	3.2	33.3	35.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	1.4	3.2	33.3	35.6
Queue Length 50th (ft)	12	100	22	47
Queue Length 95th (ft)	19	117	40	94
Internal Link Dist (ft)	1489	570	1201	
Turn Bay Length (ft)				
Base Capacity (vph)	4159	4159	1533	724
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.13	0.29	0.06	0.17

Intersection Summary

Lane Group	EBL	EBT	WBT	WBR
Lane Group Flow (vph)	56	1942	389	57
v/c Ratio	0.18	0.55	0.13	0.02
Control Delay	32.8	1.0	0.5	0.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	32.8	1.0	0.5	0.0
Queue Length 50th (ft)	11	4	4	0
Queue Length 95th (ft)	m22	0	5	0
Internal Link Dist (ft)		570	460	
Turn Bay Length (ft)	430			400
Base Capacity (vph)	926	3539	3106	2453
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.06	0.55	0.13	0.02

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	WBR
Lane Group Flow (vph)	171	448	1191	376
v/c Ratio	0.46	0.13	0.42	0.16
Control Delay	30.0	0.1	3.5	0.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	30.0	0.1	3.5	0.5
Queue Length 50th (ft)	41	0	85	2
Queue Length 95th (ft)	54	1	111	m4
Internal Link Dist (ft)		570	460	
Turn Bay Length (ft)	430			400
Base Capacity (vph)	1206	3539	2816	2294
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.14	0.13	0.42	0.16

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBL	WBT	NBL
Lane Group Flow (vph)	1941	5	333	113
v/c Ratio	0.71	0.03	0.22	0.30
Control Delay	6.8	24.5	9.1	31.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	6.8	24.5	9.1	31.8
Queue Length 50th (ft)	55	2	115	24
Queue Length 95th (ft)	228	m5	151	41
Internal Link Dist (ft)	1003		1623	2621
Turn Bay Length (ft)		180		
Base Capacity (vph)	2717	221	1535	491
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.71	0.02	0.22	0.23

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBL	WBT	NBL
Lane Group Flow (vph)	441	15	1147	403
v/c Ratio	0.20	0.05	0.81	0.81
Control Delay	5.3	21.4	6.6	48.9
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	5.3	21.4	6.6	48.9
Queue Length 50th (ft)	27	7	76	107
Queue Length 95th (ft)	42	m4	m80	#178
Internal Link Dist (ft)	1003		1623	2621
Turn Bay Length (ft)		180		
Base Capacity (vph)	2487	287	1420	499
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.18	0.05	0.81	0.81

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1130	58	141	266	33
v/c Ratio	1.06	0.35	0.11	0.70	0.09
Control Delay	64.8	38.0	5.1	34.3	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	64.8	38.0	5.1	34.3	8.5
Queue Length 50th (ft)	~599	26	20	127	0
Queue Length 95th (ft)	#650	48	34	155	20
Internal Link Dist (ft)	1250		2512	2644	
Turn Bay Length (ft)		90		175	
Base Capacity (vph)	1063	179	1269	454	431
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.06	0.32	0.11	0.59	0.08

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	252	23	490	603	52
v/c Ratio	0.27	0.12	0.44	1.12	0.10
Control Delay	3.7	33.1	10.6	110.8	14.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	3.7	33.1	10.6	110.8	14.9
Queue Length 50th (ft)	2	12	127	~304	0
Queue Length 95th (ft)	1	25	142	#420	33
Internal Link Dist (ft)	1250		2512	2644	
Turn Bay Length (ft)		90		175	
Base Capacity (vph)	942	284	1120	537	517
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.27	0.08	0.44	1.12	0.10

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	9	50	42	8	5	43	88	270	301	432
v/c Ratio	0.06	0.27	0.21	0.05	0.03	0.21	0.39	0.23	0.42	0.19
Control Delay	32.6	34.3	13.0	32.7	29.5	12.9	44.4	23.5	15.5	10.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.6	34.3	13.0	32.7	29.5	12.9	44.4	23.5	15.5	10.9
Queue Length 50th (ft)	4	23	0	4	2	0	42	50	68	41
Queue Length 95th (ft)	14	44	18	13	9	19	68	67	m150	m105
Internal Link Dist (ft)		1210			1186			501		2644
Turn Bay Length (ft)	175			200			200		200	
Base Capacity (vph)	175	454	417	175	478	438	283	1188	716	2274
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.11	0.10	0.05	0.01	0.10	0.31	0.23	0.42	0.19

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	9	13	12	7	13	141	115	550	73	151
v/c Ratio	0.07	0.08	0.08	0.05	0.08	0.52	0.34	0.24	0.37	0.07
Control Delay	36.7	34.5	18.5	36.7	34.5	13.9	27.5	6.4	40.2	15.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.7	34.5	18.5	36.7	34.5	13.9	27.5	6.4	40.2	15.0
Queue Length 50th (ft)	5	7	0	4	7	0	56	42	39	16
Queue Length 95th (ft)	17	21	13	15	20	39	78	104	74	58
Internal Link Dist (ft)		1210			1186			501		2644
Turn Bay Length (ft)	175			200			200		200	
Base Capacity (vph)	200	453	394	200	477	510	374	2299	219	2018
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.03	0.03	0.04	0.03	0.28	0.31	0.24	0.33	0.07

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	20	146	58	288	14	8	66
v/c Ratio	0.12	0.05	0.35	0.10	0.09	0.05	0.33
Control Delay	33.0	8.2	38.8	7.5	32.8	20.9	24.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.0	8.2	38.8	7.5	32.8	20.9	24.8
Queue Length 50th (ft)	9	9	27	19	6	0	17
Queue Length 95th (ft)	28	21	63	36	22	13	51
Internal Link Dist (ft)		3989		1156		1019	1012
Turn Bay Length (ft)	270		200		300		
Base Capacity (vph)	160	2794	172	2941	408	378	417
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.05	0.34	0.10	0.03	0.02	0.16

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	48	266	100	341	29	21	108
v/c Ratio	0.28	0.11	0.46	0.12	0.19	0.13	0.48
Control Delay	38.6	12.2	44.1	2.9	37.8	18.7	37.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.6	12.2	44.1	2.9	37.8	18.7	37.2
Queue Length 50th (ft)	24	23	48	14	15	1	48
Queue Length 95th (ft)	55	49	90	25	39	22	93
Internal Link Dist (ft)		3989		1156		1019	1012
Turn Bay Length (ft)	270		200		300		
Base Capacity (vph)	208	2517	246	2742	411	388	421
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.11	0.41	0.12	0.07	0.05	0.26

Intersection Summary

Lane Group	EBT	WBL	WBT	NBR
Lane Group Flow (vph)	297	102	586	316
v/c Ratio	0.10	0.18	0.14	0.25
Control Delay	4.2	27.2	1.7	0.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	4.2	27.2	1.7	0.5
Queue Length 50th (ft)	13	20	10	0
Queue Length 95th (ft)	21	m44	34	0
Internal Link Dist (ft)	1279		201	
Turn Bay Length (ft)		200		
Base Capacity (vph)	3126	637	4148	1691
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.10	0.16	0.14	0.19

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBL	WBT	NBR
Lane Group Flow (vph)	597	293	541	136
v/c Ratio	0.18	0.63	0.12	0.12
Control Delay	2.1	38.1	1.7	0.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	2.1	38.1	1.7	0.2
Queue Length 50th (ft)	10	75	20	0
Queue Length 95th (ft)	23	107	21	0
Internal Link Dist (ft)	1279		201	
Turn Bay Length (ft)		200		
Base Capacity (vph)	3294	813	4407	1599
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.18	0.36	0.12	0.09

Intersection Summary

Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	77	470	413	143	174	321
v/c Ratio	0.23	0.13	0.14	0.16	0.57	0.43
Control Delay	34.4	2.4	3.1	2.1	35.9	5.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.4	2.4	3.1	2.1	35.9	5.2
Queue Length 50th (ft)	16	11	3	0	77	0
Queue Length 95th (ft)	31	21	40	m0	125	32
Internal Link Dist (ft)		653	439		1142	
Turn Bay Length (ft)	250			200		200
Base Capacity (vph)	637	3683	2919	910	596	1148
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.13	0.14	0.16	0.29	0.28

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	198	336	775	314	63	194
v/c Ratio	0.46	0.08	0.26	0.32	0.35	0.42
Control Delay	37.8	1.0	2.5	0.9	39.7	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.8	1.0	2.5	0.9	39.7	8.5
Queue Length 50th (ft)	53	4	17	0	32	0
Queue Length 95th (ft)	87	7	35	0	66	31
Internal Link Dist (ft)		653	439		1142	
Turn Bay Length (ft)	250			200		200
Base Capacity (vph)	756	4080	2968	974	539	981
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.08	0.26	0.32	0.12	0.20

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	406	231	121	10	181	94	33	12	57	283
v/c Ratio	0.78	0.07	0.12	0.10	0.17	0.59	0.05	0.04	0.44	0.54
Control Delay	34.0	6.1	1.6	36.0	23.5	49.5	25.8	14.2	45.2	26.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.0	6.1	1.6	36.0	23.5	49.5	25.8	14.2	45.2	26.4
Queue Length 50th (ft)	154	9	0	5	41	43	7	0	26	50
Queue Length 95th (ft)	#307	28	16	18	65	#103	18	13	62	82
Internal Link Dist (ft)		493			1124		842			1095
Turn Bay Length (ft)	250		120	325		475			250	
Base Capacity (vph)	539	3156	1028	105	1040	163	853	391	130	789
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.75	0.07	0.12	0.10	0.17	0.58	0.04	0.03	0.44	0.36

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	365	89	98	24	402	271	137	7	5	182
v/c Ratio	0.87	0.04	0.12	0.20	0.46	0.67	0.11	0.01	0.05	0.45
Control Delay	52.5	13.5	3.9	48.2	42.6	38.1	18.4	10.9	36.4	19.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.5	13.5	3.9	48.2	42.6	38.1	18.4	10.9	36.4	19.1
Queue Length 50th (ft)	186	8	0	13	108	127	23	0	2	21
Queue Length 95th (ft)	#341	19	28	m30	160	208	47	9	m13	52
Internal Link Dist (ft)		493			1124		842			1095
Turn Bay Length (ft)	250		120	325		475			250	
Base Capacity (vph)	421	2507	830	120	876	409	1262	569	105	718
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.87	0.04	0.12	0.20	0.46	0.66	0.11	0.01	0.05	0.25

Intersection Summary

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	57	152	12	182	107	146	289	41
v/c Ratio	0.17	0.17	0.11	0.13	0.24	0.36	0.68	0.10
Control Delay	44.3	10.9	37.1	8.3	22.2	24.9	42.9	36.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.3	10.9	37.1	8.3	22.2	24.9	42.9	36.0
Queue Length 50th (ft)	14	35	5	6	39	24	83	7
Queue Length 95th (ft)	31	56	m18	33	66	45	202	13
Internal Link Dist (ft)		1204		311		851		533
Turn Bay Length (ft)	180		180		250		200	
Base Capacity (vph)	328	873	105	1351	461	768	512	1251
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.17	0.11	0.13	0.23	0.19	0.56	0.03

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	32	34	26	612	204	139	69	66
v/c Ratio	0.12	0.03	0.17	0.33	0.65	0.23	0.36	0.22
Control Delay	42.3	14.8	37.0	6.0	41.5	29.5	36.4	36.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.3	14.8	37.0	6.0	41.5	29.5	36.4	36.1
Queue Length 50th (ft)	9	9	13	35	101	32	38	11
Queue Length 95th (ft)	23	35	m37	77	159	56	81	33
Internal Link Dist (ft)		1204		311		851		533
Turn Bay Length (ft)	180		180		250		200	
Base Capacity (vph)	266	984	167	1858	417	1007	301	739
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.03	0.16	0.33	0.49	0.14	0.23	0.09

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	WBR	NBT	SBT
Lane Group Flow (vph)	10	2	527	110
v/c Ratio	0.10	0.02	0.29	0.06
Control Delay	17.9	12.5	1.0	0.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	17.9	12.5	1.0	0.6
Queue Length 50th (ft)	8	0	0	0
Queue Length 95th (ft)	21	7	71	14
Internal Link Dist (ft)	670		520	1210
Turn Bay Length (ft)				
Base Capacity (vph)	253	228	1791	1797
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.04	0.01	0.29	0.06

Intersection Summary

Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	11	1	94	2	370
v/c Ratio	0.08	0.01	0.05	0.02	0.21
Control Delay	37.0	28.0	1.6	36.5	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	37.0	28.0	1.6	36.5	0.8
Queue Length 50th (ft)	6	0	0	1	0
Queue Length 95th (ft)	21	5	26	8	47
Internal Link Dist (ft)	670		520		1210
Turn Bay Length (ft)				150	
Base Capacity (vph)	579	519	1712	327	1794
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.02	0.00	0.05	0.01	0.21

Intersection Summary

APPENDIX F

- Existing + Project Phases 1-2 - Arterial Analysis
- Existing + Project Phases 1-2 - Synchro Analysis
- Existing + Project Phases 1-2 - ILV Analysis
- Existing + Project Phases 1-2 – Queuing Summaries

Existing + Project Phases 1-2 - Arterial Analysis

Arterial Level of Service: EB Otay Mesa Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Heritage Road	II	45	28.4	40.9	69.3	0.27	14.2	E
Cactus Rd	II	45	44.7	44.8	89.5	0.51	20.4	D
Brittania Blvd	II	45	45.5	27.5	73.0	0.52	25.5	C
La Media	II	45	83.0	17.6	100.6	1.04	37.1	A
Piper Ranch Rd	II	45	44.3	7.0	51.3	0.50	35.3	A
SR125 SB	II	45	29.4	4.7	34.1	0.30	31.4	B
SR125 NB Ramp	II	45	13.4	3.3	16.7	0.12	26.5	C
Sanyo Ave	II	45	35.1	13.8	48.9	0.37	27.0	C
Enrico Fermi Dr	II	45	62.8	337.1	399.9	0.78	7.1	F
Total	II		386.6	496.7	883.3	4.41	18.0	D

Arterial Level of Service: WB Otay Mesa Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Enrico Fermi Dr	II	45	43.2	5.7	48.9	0.49	36.1	A
Sanyo Ave	II	45	62.8	10.8	73.6	0.78	38.4	A
SR125 NB Ramp	II	45	35.1	0.4	35.5	0.37	37.1	A
SR125 SB	II	45	13.4	11.5	24.9	0.12	17.8	D
Piper Ranch Rd	II	45	29.4	11.6	41.0	0.30	26.1	C
La Media	II	45	44.3	5.3	49.6	0.50	36.6	A
Brittania Blvd	II	45	83.0	2.7	85.7	1.04	43.6	A
Cactus Rd	II	45	45.5	3.4	48.9	0.52	38.1	A
Heritage Road	II	45	44.7	9.4	54.1	0.51	33.8	B
Total	II		401.4	60.8	462.2	4.63	36.0	A

Arterial Level of Service: EB Otay Mesa Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Heritage Road	II	45	28.4	22.2	50.6	0.27	19.4	D
Cactus Rd	II	45	44.7	16.2	60.9	0.51	30.0	B
Brittania Blvd	II	45	45.5	10.1	55.6	0.52	33.5	B
La Media	II	45	83.0	9.9	92.9	1.04	40.2	A
Piper Ranch Rd	II	45	44.3	2.6	46.9	0.50	38.7	A
SR125 SB	II	45	29.4	1.4	30.8	0.30	34.7	B
SR125 NB Ramp	II	45	13.4	0.1	13.5	0.12	32.8	B
Sanyo Ave	II	45	35.1	5.6	40.7	0.37	32.4	B
Enrico Fermi Dr	II	45	62.8	4.0	66.8	0.78	42.3	A
Total	II		386.6	72.1	458.7	4.41	34.6	B

Arterial Level of Service: WB Otay Mesa Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Enrico Fermi Dr	II	45	43.2	10.6	53.8	0.49	32.8	B
Sanyo Ave	II	45	62.8	70.7	133.5	0.78	21.1	D
SR125 NB Ramp	II	45	35.1	4.0	39.1	0.37	33.7	B
SR125 SB	II	45	13.4	3.2	16.6	0.12	26.7	C
Piper Ranch Rd	II	45	29.4	13.8	43.2	0.30	24.8	C
La Media	II	45	44.3	22.4	66.7	0.50	27.2	C
Brittania Blvd	II	45	83.0	25.8	108.8	1.04	34.3	B
Cactus Rd	II	45	45.5	29.9	75.4	0.52	24.7	C
Heritage Road	II	45	44.7	60.1	104.8	0.51	17.4	D
Total	II		401.4	240.5	641.9	4.63	26.0	C

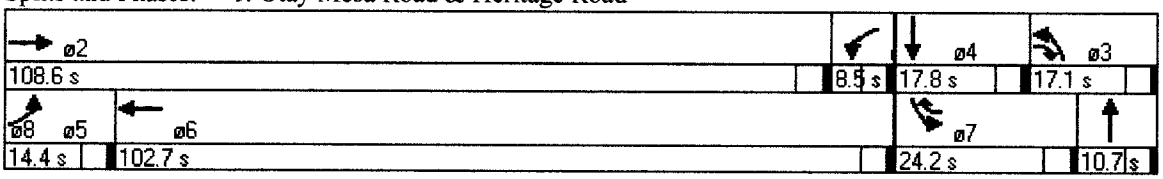
Existing + Project Phases 1-2 - Synchro Analysis

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	1.00	1.00	1.00	1.00	1.00	0.88
Frt			0.850			0.850		0.895				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	4803	1583	3433	4803	1583	1770	1667	0	1770	1863	2787
Flt Permitted	0.950			0.950			0.950			0.000		
Satd. Flow (perm)	3433	4803	1583	3433	4803	1583	1770	1667	0	0	1863	2787
Satd. Flow (RTOR)			228			126		46				63
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	106	2780	187	31	1205	103	63	27	63	234	51	52
Adj. Flow (vph)	129	3390	228	38	1470	126	77	33	77	285	62	63
Lane Group Flow (vph)	129	3390	228	38	1470	126	77	110	0	285	62	63
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot			pm+pt		Perm
Protected Phases	5	2	3	1	6	7	3	8		7	4	
Permitted Phases			2			6				4		4
Total Split (s)	14.4	108.6	17.1	8.5	102.7	24.2	17.1	10.7	0.0	24.2	17.8	17.8
Act Effct Green (s)	10.0	106.3	126.5	4.5	99.1	123.3	16.2	6.7		20.2	10.7	10.7
Actuated g/C Ratio	0.07	0.70	0.83	0.03	0.65	0.81	0.11	0.04		0.13	0.07	0.07
v/c Ratio	0.57	1.01	0.17	0.37	0.47	0.10	0.41	0.94		1.21	0.47	0.25
Control Delay	79.2	40.9	0.6	71.7	9.4	0.9	71.6	108.8		181.4	79.2	16.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	79.2	40.9	0.6	71.7	9.4	0.9	71.6	108.8		181.4	79.2	16.6
LOS	E	D	A	E	A	A	E	F		F	E	B
Approach Delay		39.8			10.2			93.5			140.6	
Approach LOS		D			B			F			F	

Intersection Summary

Cycle Length: 152
Actuated Cycle Length: 152
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green, Master Intersection
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.21
Intersection Signal Delay: 40.3 — Intersection LOS: D
Intersection Capacity Utilization 80.0% — ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 1: Otay Mesa Road & Heritage Road

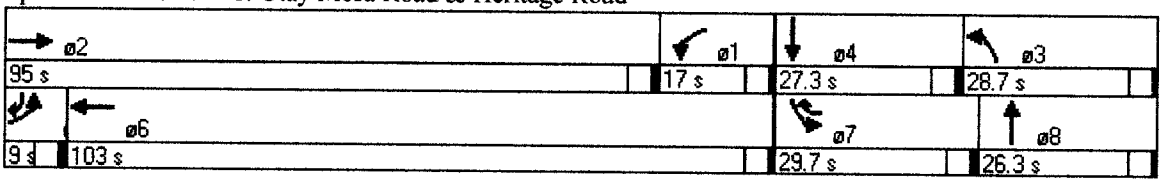


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	1.00	1.00	1.00	1.00	1.00	0.88
Frt			0.850			0.850		0.942				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	4803	1583	3433	4803	1583	1770	1755	0	1770	1863	2787
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	4803	1583	3433	4803	1583	1770	1755	0	1770	1863	2787
Satd. Flow (RTOR)			94			377		15				48
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	127	1425	88	33	2829	354	214	78	49	236	45	247
Adj. Flow (vph)	135	1516	94	35	3010	377	228	83	52	251	48	263
Lane Group Flow (vph)	135	1516	94	35	3010	377	228	135	0	251	48	263
Turn Type	Prot		Perm	Prot		pm+ov	Prot			Prot		pm+ov
Protected Phases	5	2		1	6	7	3	8		7	4	5
Permitted Phases			2			6						4
Total Split (s)	9.0	95.0	95.0	17.0	103.0	29.7	28.7	26.3	0.0	29.7	27.3	9.0
Act Effct Green (s)	10.8	100.2	100.2	11.6	99.0	128.3	32.2	16.9		25.3	10.0	20.8
Actuated g/C Ratio	0.06	0.60	0.60	0.07	0.59	0.76	0.19	0.10		0.15	0.06	0.12
v/c Ratio	0.61	0.53	0.10	0.15	1.06	0.29	0.67	0.71		0.94	0.43	0.68
Control Delay	86.3	22.2	3.3	60.7	60.1	1.9	73.4	84.5		110.7	87.2	44.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	86.3	22.2	3.3	60.7	60.1	1.9	73.4	84.5		110.7	87.2	44.6
LOS	F	C	A	E	E	A	E	F		F	F	D
Approach Delay		26.1			53.7			77.5			77.7	
Approach LOS		C			D			E			E	

Intersection Summary

Cycle Length: 168
Actuated Cycle Length: 168
Offset: 5 (3%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.06
Intersection Signal Delay: 49.4 — Intersection LOS: D
Intersection Capacity Utilization 85.2% — ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 1: Otay Mesa Road & Heritage Road

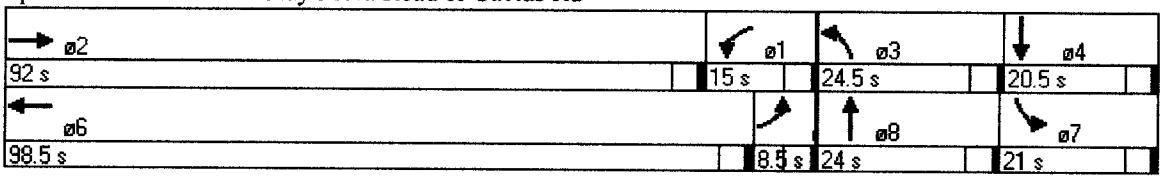


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.999				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4782	0	1770	4799	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	4782	0	1770	4799	0	1770	1863	1583	1770	1863	1583
Satd. Flow (RTOR)		9			1				217			143
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	4	2978	154	57	1291	6	76	0	69	1	0	1
Adj. Flow (vph)	5	3677	190	70	1594	7	94	0	85	1	0	1
Lane Group Flow (vph)	5	3867	0	70	1601	0	94	0	85	1	0	1
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases									8			4
Total Split (s)	8.5	92.0	0.0	15.0	98.5	0.0	24.5	24.0	24.0	21.0	20.5	20.5
Act Effct Green (s)	7.4	114.2		10.1	125.1		13.7		11.2	8.6		6.0
Actuated g/C Ratio	0.05	0.75		0.07	0.82		0.09		0.07	0.06		0.04
v/c Ratio	0.06	1.08		0.59	0.41		0.59		0.27	0.01		0.01
Control Delay	59.5	44.8		77.5	3.4		80.6		2.1	64.0		0.0
Queue Delay	0.0	0.0		0.0	0.0		0.0		0.0	0.0		0.0
Total Delay	59.5	44.8		77.5	3.4		80.6		2.1	64.0		0.0
LOS	E	D		E	A		F		A	E		A
Approach Delay		44.9			6.5							
Approach LOS		D			A							

Intersection Summary

Cycle Length: 152
Actuated Cycle Length: 152
Offset: 42 (28%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.08
Intersection Signal Delay: 33.6 — Intersection LOS: C
Intersection Capacity Utilization 78.6% — ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 2: Otay Mesa Road & Cactus Rd

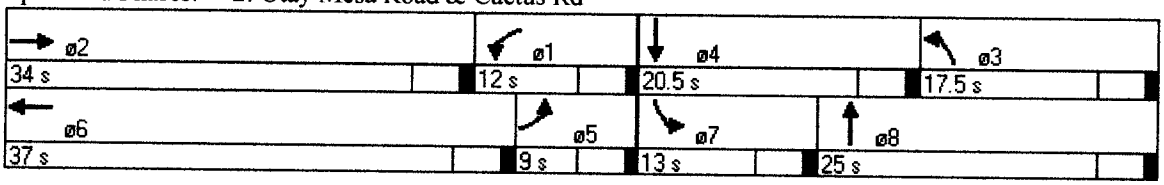


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.988			0.999				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4766	0	1770	4799	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	4766	0	1770	4799	0	1770	1863	1583	1770	1863	1583
Satd. Flow (RTOR)		18			1				138			4
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	2	1609	137	81	3055	13	188	1	130	4	1	4
Adj. Flow (vph)	2	1712	146	86	3250	14	200	1	138	4	1	4
Lane Group Flow (vph)	2	1858	0	86	3264	0	200	1	138	4	1	4
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases									8			4
Total Split (s)	9.0	34.0	0.0	12.0	37.0	0.0	17.5	25.0	25.0	13.0	20.5	20.5
Act Effct Green (s)	5.0	48.3		7.7	56.1		15.9	15.9	15.9	6.2	6.2	6.2
Actuated g/C Ratio	0.06	0.58		0.09	0.67		0.19	0.19	0.19	0.07	0.07	0.07
v/c Ratio	0.02	0.68		0.53	1.02		0.60	0.00	0.34	0.03	0.01	0.03
Control Delay	31.5	16.2		39.2	29.9		37.8	24.0	7.2	36.5	36.0	24.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.5	16.2		39.2	29.9		37.8	24.0	7.2	36.5	36.0	24.5
LOS	C	B		D	C		D	C	A	D	D	C
Approach Delay		16.2			30.2			25.3			31.1	
Approach LOS		B			C			C			C	

Intersection Summary

Cycle Length: 84
Actuated Cycle Length: 84
Offset: 33 (39%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.02
Intersection Signal Delay: 25.2 — Intersection LOS: C
Intersection Capacity Utilization 89.7% — ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 2: Otay Mesa Road & Cactus Rd

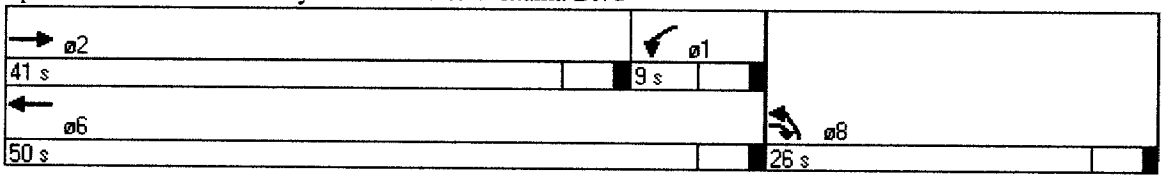


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.91	1.00	1.00	0.91	0.97	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	4803	1583	1770	4803	3433	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	4803	1583	1770	4803	3433	1583
Satd. Flow (RTOR)		488				61
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	2083	992	34	565	781	50
Adj. Flow (vph)	2540	1210	41	689	952	61
Lane Group Flow (vph)	2540	1210	41	689	952	61
Turn Type		pm+ov	Prot			Perm
Protected Phases	2	8	1	6	8	
Permitted Phases		2				8
Total Split (s)	41.0	26.0	9.0	50.0	26.0	26.0
Act Effct Green (s)	40.6	68.2	5.0	46.0	22.0	22.0
Actuated g/C Ratio	0.53	0.90	0.07	0.61	0.29	0.29
v/c Ratio	0.99	0.82	0.35	0.24	0.96	0.12
Control Delay	27.5	9.0	39.2	2.7	48.3	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.5	9.0	39.2	2.7	48.3	6.7
LOS	C	A	D	A	D	A
Approach Delay	21.5			4.7	45.8	
Approach LOS	C			A	D	

Intersection Summary

Cycle Length: 76
Actuated Cycle Length: 76
Offset: 6 (8%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.99
Intersection Signal Delay: 23.7 — Intersection LOS: C
Intersection Capacity Utilization 71.4% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 3: Otay Mesa Road & Brittania Blvd

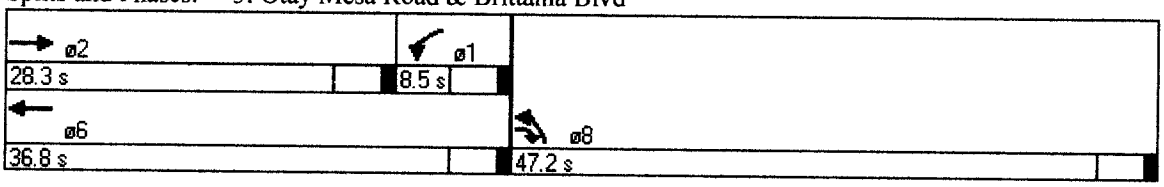


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.91	1.00	1.00	0.91	0.97	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	4803	1583	1770	4803	3433	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	4803	1583	1770	4803	3433	1583
Satd. Flow (RTOR)		712				62
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	776	975	17	1974	1248	60
Adj. Flow (vph)	800	1005	18	2035	1287	62
Lane Group Flow (vph)	800	1005	18	2035	1287	62
Turn Type		pm+ov	Prot			Perm
Protected Phases	2	8	1	6	8	
Permitted Phases		2				8
Total Split (s)	28.3	47.2	8.5	36.8	47.2	47.2
Act Effct Green (s)	32.9	79.0	4.5	36.3	39.7	39.7
Actuated g/C Ratio	0.39	0.94	0.05	0.43	0.47	0.47
v/c Ratio	0.43	0.66	0.19	0.98	0.79	0.08
Control Delay	10.1	10.4	21.6	25.8	22.6	3.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.1	10.4	21.6	25.8	22.6	3.2
LOS	B	B	C	C	C	A
Approach Delay	10.3			25.8	21.7	
Approach LOS	B			C	C	

Intersection Summary

Cycle Length: 84
Actuated Cycle Length: 84
Offset: 74 (88%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.98
Intersection Signal Delay: 19.3 — Intersection LOS: B
Intersection Capacity Utilization 80.4% — ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 3: Otay Mesa Road & Brittania Blvd

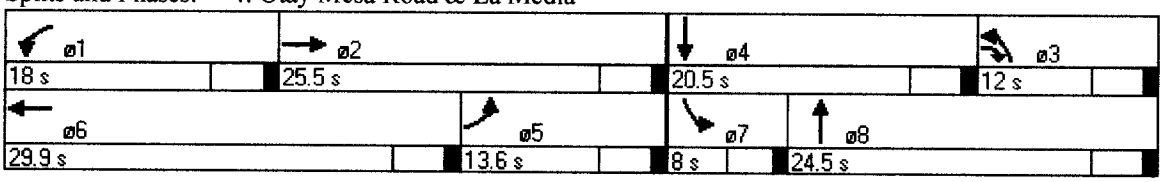


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.91	1.00	1.00	1.00	0.97	1.00	1.00
Frt			0.850		0.991			0.905			0.935	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4803	1583	1770	4776	0	1770	1650	0	3433	1686	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	4803	1583	1770	4776	0	1770	1650	0	3433	1686	0
Satd. Flow (RTOR)			318		14			84			36	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	82	1519	277	167	446	29	75	42	73	11	41	31
Adj. Flow (vph)	94	1746	318	192	513	33	86	48	84	13	47	36
Lane Group Flow (vph)	94	1746	318	192	546	0	86	132	0	13	83	0
Turn Type	Prot		pm+ov	Prot			Prot			Prot		
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2									
Total Split (s)	13.6	25.5	12.0	18.0	29.9	0.0	12.0	24.5	0.0	8.0	20.5	0.0
Act Effct Green (s)	8.9	29.0	38.6	13.2	35.3		9.6	20.2		4.0	8.2	
Actuated g/C Ratio	0.12	0.38	0.51	0.17	0.46		0.13	0.27		0.05	0.11	
v/c Ratio	0.45	0.95	0.33	0.62	0.25		0.38	0.26		0.07	0.39	
Control Delay	16.6	17.6	2.0	27.2	5.3		34.6	10.5		35.2	24.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	16.6	17.6	2.0	27.2	5.3		34.6	10.5		35.2	24.8	
LOS	B	B	A	C	A		C	B		D	C	
Approach Delay		15.3			11.0			20.0			26.2	
Approach LOS		B			B			C			C	

Intersection Summary

Cycle Length: 76
Actuated Cycle Length: 76
Offset: 29 (38%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.95
Intersection Signal Delay: 14.9 — Intersection LOS: B
Intersection Capacity Utilization 59.4% — ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 4: Otay Mesa Road & La Media

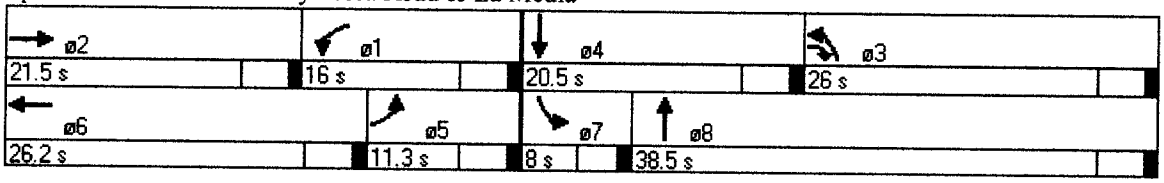


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.91	1.00	1.00	1.00	0.97	1.00	1.00
Frt			0.850		0.996			0.893			0.921	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4803	1583	1770	4790	0	1770	1636	0	3433	1669	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	4803	1583	1770	4790	0	1770	1636	0	3433	1669	0
Satd. Flow (RTOR)			298		4			123			60	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	58	493	268	118	1346	35	277	45	111	38	83	93
Adj. Flow (vph)	64	548	298	131	1496	39	308	50	123	42	92	103
Lane Group Flow (vph)	64	548	298	131	1535	0	308	173	0	42	195	0
Turn Type	Prot		pm+ov	Prot			Prot			Prot		
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2									
Total Split (s)	11.3	21.5	26.0	16.0	26.2	0.0	26.0	38.5	0.0	8.0	20.5	0.0
Act Effct Green (s)	7.0	25.9	48.7	11.1	31.9		18.8	30.2		4.3	12.2	
Actuated g/C Ratio	0.08	0.31	0.58	0.13	0.38		0.22	0.36		0.05	0.15	
v/c Ratio	0.43	0.37	0.29	0.56	0.84		0.78	0.26		0.24	0.66	
Control Delay	42.4	9.9	0.7	26.4	22.4		44.1	6.9		42.1	33.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	42.4	9.9	0.7	26.4	22.4		44.1	6.9		42.1	33.9	
LOS	D	A	A	C	C		D	A		D	C	
Approach Delay		9.2			22.7			30.7			35.3	
Approach LOS		A			C			C			D	

Intersection Summary

Cycle Length: 84
Actuated Cycle Length: 84
Offset: 3 (4%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 21.1 — Intersection LOS: C
Intersection Capacity Utilization 68.9% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 4: Otay Mesa Road & La Media

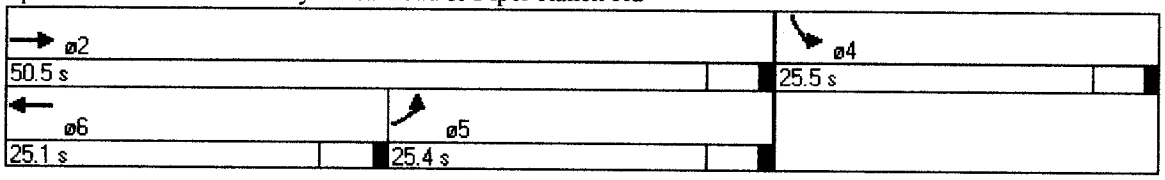


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.91	0.91	0.97	0.91
Frt			0.982		0.944	0.850
Flt Protected	0.950				0.970	
Satd. Flow (prot)	1770	3539	4994	0	3309	1441
Flt Permitted	0.950				0.970	
Satd. Flow (perm)	1770	3539	4994	0	3309	1441
Satd. Flow (RTOR)			33		55	66
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	180	1445	546	76	80	105
Adj. Flow (vph)	207	1661	628	87	92	121
Lane Group Flow (vph)	207	1661	715	0	147	66
Turn Type	Prot					Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Total Split (s)	25.4	50.5	25.1	0.0	25.5	25.5
Act Effct Green (s)	21.4	60.1	34.7		7.9	7.9
Actuated g/C Ratio	0.28	0.79	0.46		0.10	0.10
v/c Ratio	0.42	0.59	0.31		0.37	0.32
Control Delay	6.9	7.0	11.6		22.7	13.0
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	6.9	7.0	11.6		22.7	13.0
LOS	A	A	B		C	B
Approach Delay		7.0	11.6		19.7	
Approach LOS		A	B		B	

Intersection Summary

Cycle Length: 76
Actuated Cycle Length: 76
Offset: 50 (66%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.59
Intersection Signal Delay: 9.1 — Intersection LOS: A
Intersection Capacity Utilization 50.0% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 5: Otay Mesa Road & Piper Ranch Rd

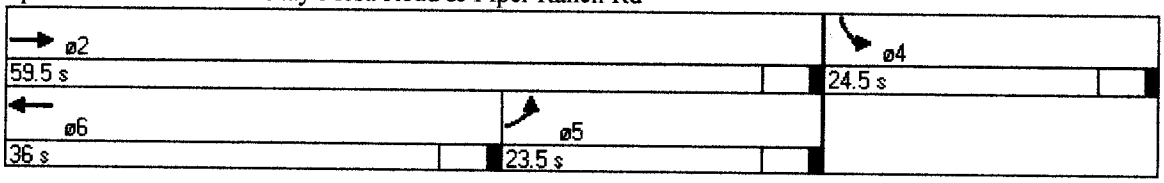


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.91	0.91	0.97	0.91
Frt			0.988		0.906	0.850
Flt Protected	0.950				0.982	
Satd. Flow (prot)	1770	3539	5024	0	3215	1441
Flt Permitted	0.950				0.982	
Satd. Flow (perm)	1770	3539	5024	0	3215	1441
Satd. Flow (RTOR)			19		202	202
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	167	867	1850	159	119	400
Adj. Flow (vph)	169	876	1869	161	120	404
Lane Group Flow (vph)	169	876	2030	0	322	202
Turn Type	Prot					Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Total Split (s)	23.5	59.5	36.0	0.0	24.5	24.5
Act Effct Green (s)	19.5	66.3	42.8		9.7	9.7
Actuated g/C Ratio	0.23	0.79	0.51		0.12	0.12
v/c Ratio	0.41	0.31	0.79		0.59	0.59
Control Delay	36.7	2.6	13.8		17.5	12.5
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	36.7	2.6	13.8		17.5	12.5
LOS	D	A	B		B	B
Approach Delay		8.1	13.8		15.6	
Approach LOS		A	B		B	

Intersection Summary

Cycle Length: 84
Actuated Cycle Length: 84
Offset: 46 (55%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.79
Intersection Signal Delay: 12.4 — Intersection LOS: B
Intersection Capacity Utilization 66.1% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 5: Otay Mesa Road & Piper Ranch Rd

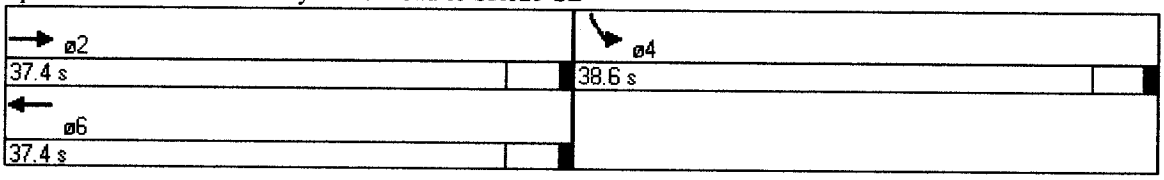


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑		↖↖	↱
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.91	1.00	0.97	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	5085	5085	0	3433	1583
Flt Permitted					0.950	
Satd. Flow (perm)	0	5085	5085	0	3433	1583
Satd. Flow (RTOR)						261
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	0	1521	406	0	503	224
Adj. Flow (vph)	0	1811	483	0	599	267
Lane Group Flow (vph)	0	1811	483	0	599	267
Turn Type						Perm
Protected Phases		2	6		4	
Permitted Phases						4
Total Split (s)	0.0	37.4	37.4	0.0	38.6	38.6
Act Effct Green (s)		49.0	49.0		19.0	19.0
Actuated g/C Ratio		0.64	0.64		0.25	0.25
v/c Ratio		0.55	0.15		0.70	0.45
Control Delay		4.7	11.5		29.9	5.7
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		4.7	11.5		29.9	5.7
LOS		A	B		C	A
Approach Delay		4.7	11.5		22.4	
Approach LOS		A	B		C	

Intersection Summary

Cycle Length: 76
Actuated Cycle Length: 76
Offset: 23 (30%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 10.6 — Intersection LOS: B
Intersection Capacity Utilization 58.0% — ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 6: Otay Mesa Road & SR125 SB

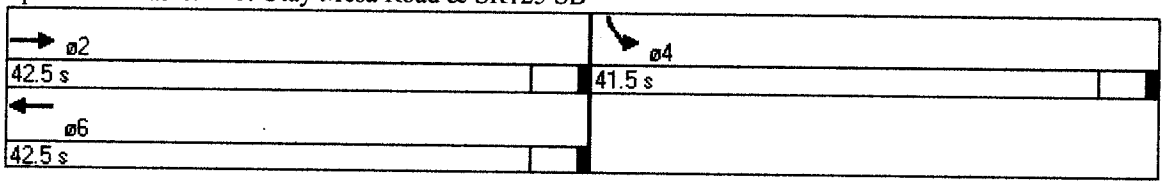


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑		↖↖	↱
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.91	1.00	0.97	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	5085	5085	0	3433	1583
Flt Permitted					0.950	
Satd. Flow (perm)	0	5085	5085	0	3433	1583
Satd. Flow (RTOR)						8
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	0	569	1440	0	89	110
Adj. Flow (vph)	0	639	1618	0	100	124
Lane Group Flow (vph)	0	639	1618	0	100	124
Turn Type						Perm
Protected Phases		2	6		4	
Permitted Phases						4
Total Split (s)	0.0	42.5	42.5	0.0	41.5	41.5
Act Effct Green (s)		67.9	67.9		11.0	11.0
Actuated g/C Ratio		0.81	0.81		0.13	0.13
v/c Ratio		0.16	0.39		0.22	0.58
Control Delay		1.4	3.2		32.6	42.3
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		1.4	3.2		32.6	42.3
LOS		A	A		C	D
Approach Delay		1.4	3.2		37.9	
Approach LOS		A	A		D	

Intersection Summary

Cycle Length: 84
Actuated Cycle Length: 84
Offset: 56 (67%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.58
Intersection Signal Delay: 5.9 — Intersection LOS: A
Intersection Capacity Utilization 50.9% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 6: Otay Mesa Road & SR125 SB

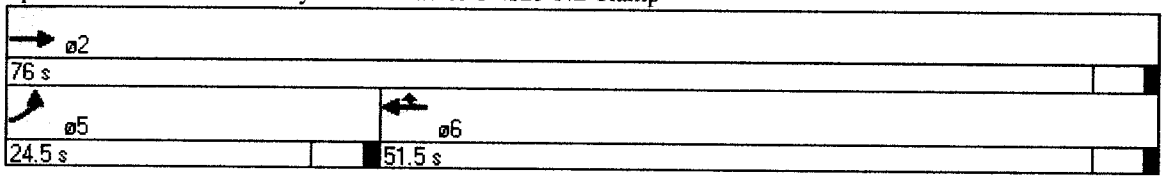


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	0.95	0.88	1.00	1.00
Frt				0.850		
Flt Protected	0.950					
Satd. Flow (prot)	3433	3539	3539	2787	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	3433	3539	3539	2787	0	0
Satd. Flow (RTOR)				69		
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	45	1979	406	56	0	0
Adj. Flow (vph)	56	2443	501	69	0	0
Lane Group Flow (vph)	56	2443	501	69	0	0
Turn Type	Prot			Perm		
Protected Phases	5	2	6			
Permitted Phases				6		
Total Split (s)	24.5	76.0	51.5	51.5	0.0	0.0
Act Effct Green (s)	7.0	76.0	66.7	66.7		
Actuated g/C Ratio	0.09	1.00	0.88	0.88		
v/c Ratio	0.18	0.69	0.16	0.03		
Control Delay	33.6	3.3	0.4	0.0		
Queue Delay	0.0	0.0	0.0	0.0		
Total Delay	33.6	3.3	0.4	0.0		
LOS	C	A	A	A		
Approach Delay		4.0	0.4			
Approach LOS		A	A			

Intersection Summary

Cycle Length: 76
Actuated Cycle Length: 76
Offset: 22 (29%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.69
Intersection Signal Delay: 3.3 — Intersection LOS: A
Intersection Capacity Utilization 58.0% — ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 7: Otay Mesa Road & SR125 NB Ramp

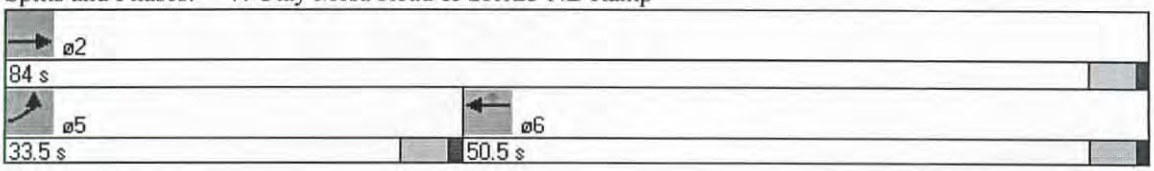


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	0.95	0.88	1.00	1.00
Frt				0.850		
Flt Protected	0.950					
Satd. Flow (prot)	3433	3539	3539	2787	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	3433	3539	3539	2787	0	0
Satd. Flow (RTOR)				419		
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	154	504	1440	377	0	0
Adj. Flow (vph)	171	560	1600	419	0	0
Lane Group Flow (vph)	171	560	1600	419	0	0
Turn Type	Prot			Perm		
Protected Phases	5	2	6			
Permitted Phases				6		
Total Split (s)	33.5	84.0	50.5	50.5	0.0	0.0
Act Effct Green (s)	9.3	84.0	66.7	66.7		
Actuated g/C Ratio	0.11	1.00	0.79	0.79		
v/c Ratio	0.45	0.16	0.57	0.18		
Control Delay	27.8	0.1	4.0	0.4		
Queue Delay	0.0	0.0	0.0	0.0		
Total Delay	27.8	0.1	4.0	0.4		
LOS	C	A	A	A		
Approach Delay		6.6	3.3			
Approach LOS		A	A			

Intersection Summary

Cycle Length: 84
Actuated Cycle Length: 84
Offset: 31 (37%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.57
Intersection Signal Delay: 4.2 — Intersection LOS: A
Intersection Capacity Utilization 50.9% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 7: Otay Mesa Road & SR125 NB Ramp

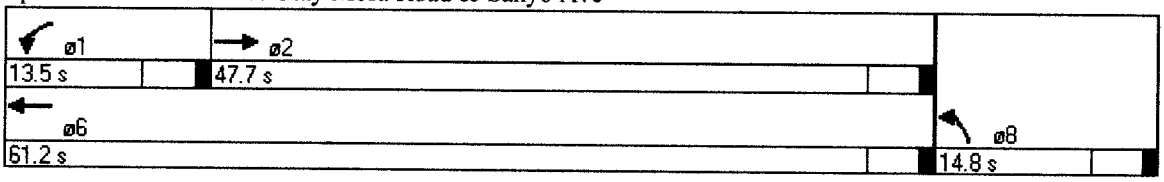


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	0.95	1.00	1.00	0.97	0.95
Frt	0.963				0.995	
Flt Protected			0.950		0.954	
Satd. Flow (prot)	3408	0	1770	1863	3430	0
Flt Permitted			0.950		0.954	
Satd. Flow (perm)	3408	0	1770	1863	3430	0
Satd. Flow (RTOR)	98				4	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	1491	487	4	371	88	3
Adj. Flow (vph)	1841	601	5	458	109	4
Lane Group Flow (vph)	2442	0	5	458	113	0
Turn Type			Prot			
Protected Phases	2		1	6	8	
Permitted Phases						
Total Split (s)	47.7	0.0	13.5	61.2	14.8	0.0
Act Effct Green (s)	60.4		6.3	62.6	8.2	
Actuated g/C Ratio	0.79		0.08	0.82	0.11	
v/c Ratio	0.89		0.03	0.30	0.30	
Control Delay	13.8		18.8	10.8	31.8	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	13.8		18.8	10.8	31.8	
LOS	B		B	B	C	
Approach Delay	13.8			10.9	31.8	
Approach LOS	B			B	C	

Intersection Summary

Cycle Length: 76
Actuated Cycle Length: 76
Offset: 28 (37%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 14.0 — Intersection LOS: B
Intersection Capacity Utilization 66.8% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 10: Otay Mesa Road & Sanyo Ave

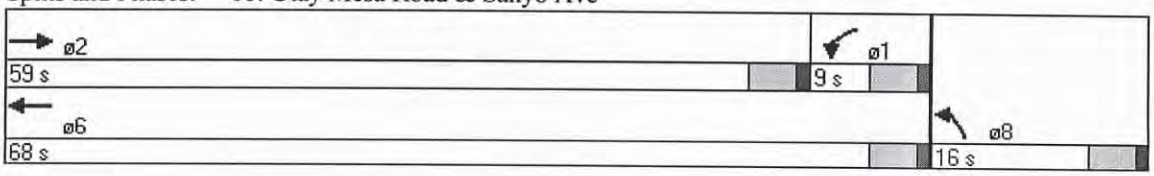


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	0.95	1.00	1.00	0.97	0.95
Frt	0.945				0.999	
Flt Protected			0.950		0.953	
Satd. Flow (prot)	3345	0	1770	1863	3440	0
Flt Permitted			0.950		0.953	
Satd. Flow (perm)	3345	0	1770	1863	3440	0
Satd. Flow (RTOR)	204				1	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	317	186	14	1451	363	4
Adj. Flow (vph)	348	204	15	1595	399	4
Lane Group Flow (vph)	552	0	15	1595	403	0
Turn Type			Prot			
Protected Phases	2		1	6	8	
Permitted Phases						
Total Split (s)	59.0	0.0	9.0	68.0	16.0	0.0
Act Effct Green (s)	55.5		12.9	64.0	12.0	
Actuated g/C Ratio	0.66		0.15	0.76	0.14	
v/c Ratio	0.24		0.05	1.12	0.82	
Control Delay	5.6		18.6	71.4	50.2	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	5.6		18.6	71.4	50.2	
LOS	A		B	E	D	
Approach Delay	5.6			70.9	50.2	
Approach LOS	A			E	D	

Intersection Summary

Cycle Length: 84
Actuated Cycle Length: 84
Offset: 24 (29%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.12
Intersection Signal Delay: 53.6 — Intersection LOS: D
Intersection Capacity Utilization 93.5% — ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 10: Otay Mesa Road & Sanyo Ave

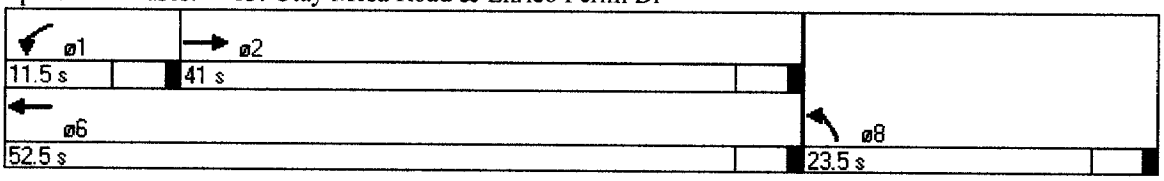


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.902					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1680	0	1770	1863	1770	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1680	0	1770	1863	1770	1583
Satd. Flow (RTOR)	241					47
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	341	890	81	103	295	34
Adj. Flow (vph)	467	1219	111	141	404	47
Lane Group Flow (vph)	1686	0	111	141	404	47
Turn Type			Prot			Perm
Protected Phases	2		1	6	8	
Permitted Phases						8
Total Split (s)	41.0	0.0	11.5	52.5	23.5	23.5
Act Effct Green (s)	39.7		7.3	48.9	19.1	19.1
Actuated g/C Ratio	0.52		0.10	0.64	0.25	0.25
v/c Ratio	1.70		0.65	0.12	0.91	0.11
Control Delay	337.1		52.3	5.7	50.2	7.5
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	337.1		52.3	5.7	50.2	7.5
LOS	F		D	A	D	A
Approach Delay	337.1			26.2	45.7	
Approach LOS	F			C	D	

Intersection Summary

Cycle Length: 76
Actuated Cycle Length: 76
Offset: 45 (59%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.70
Intersection Signal Delay: 249.3 — Intersection LOS: F
Intersection Capacity Utilization 95.7% — ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 13: Otay Mesa Road & Enrico Fermi Dr

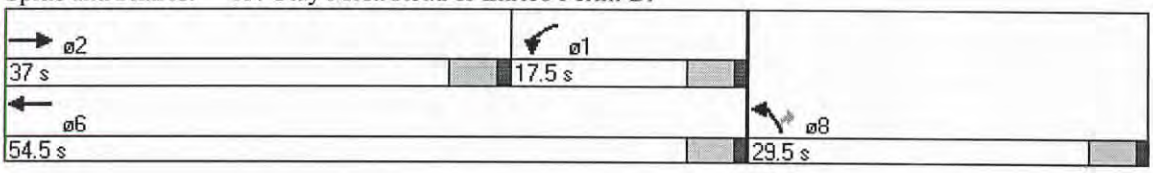


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.898					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1673	0	1770	1863	1770	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1673	0	1770	1863	1770	1583
Satd. Flow (RTOR)	218					61
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	78	242	30	426	931	84
Adj. Flow (vph)	90	278	35	490	1071	97
Lane Group Flow (vph)	368	0	35	490	1071	97
Turn Type			Prot			Perm
Protected Phases	2		1	6	8	
Permitted Phases						8
Total Split (s)	37.0	0.0	17.5	54.5	29.5	29.5
Act Effct Green (s)	40.0		10.6	50.5	25.5	25.5
Actuated g/C Ratio	0.48		0.13	0.60	0.30	0.30
v/c Ratio	0.40		0.16	0.44	1.99	0.19
Control Delay	5.4		32.7	10.6	475.7	11.8
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	5.4		32.7	10.6	475.7	11.8
LOS	A		C	B	F	B
Approach Delay	5.4			12.1	437.2	
Approach LOS	A			B	F	

Intersection Summary

Cycle Length: 84
Actuated Cycle Length: 84
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.99
Intersection Signal Delay: 251.8 — Intersection LOS: F
Intersection Capacity Utilization 70.9% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 13: Otay Mesa Road & Enrico Fermi Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	487	1	0	0	0	0	0	0	1	0	0	133
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 (vph)	529	1	0	0	0	0	0	0	1	0	0	145

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	530	0	1	145
Volume Left (vph)	529	0	0	0
Volume Right (vph)	0	0	1	145
Hadj (s)	0.23	0.00	-0.57	-0.57
Departure Headway (s)	4.5	4.9	4.8	4.6
Degree Utilization, x	0.66	0.00	0.00	0.19
Capacity (veh/h)	782	702	655	705
Control Delay (s)	15.8	7.9	7.8	8.7
Approach Delay (s)	15.8	0.0	7.8	8.7
Approach LOS	C	A	A	A

Intersection Summary			
Delay	14.3		
HCM Level of Service	B		
Intersection Capacity Utilization	41.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	112	0	0	0	0	0	2	0	0	0	0	356
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 (vph)	122	0	0	0	0	0	2	0	0	0	0	387

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	122	0	2	387
Volume Left (vph)	122	0	2	0
Volume Right (vph)	0	0	0	387
Hadj (s)	0.23	0.00	0.23	-0.57
Departure Headway (s)	4.9	4.8	4.8	3.7
Degree Utilization, x	0.17	0.00	0.00	0.39
Capacity (veh/h)	682	685	707	961
Control Delay (s)	8.9	7.8	7.8	9.0
Approach Delay (s)	8.9	0.0	7.8	9.0
Approach LOS	A	A	A	A

Intersection Summary			
Delay	9.0		
HCM Level of Service	A		
Intersection Capacity Utilization	34.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	7	79	28	4	89	84	23	41	3	101	272	72
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	8	87	31	4	98	92	25	45	3	111	299	79

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	125	102	92	25	48	410	79
Volume Left (vph)	8	4	0	25	0	111	0
Volume Right (vph)	31	0	92	0	3	0	79
Hadj (s)	-0.10	0.06	-0.67	0.53	-0.01	0.17	-0.67
Departure Headway (s)	6.2	6.3	5.5	6.6	6.1	5.7	4.9
Degree Utilization, x	0.21	0.18	0.14	0.05	0.08	0.65	0.11
Capacity (veh/h)	542	532	598	506	549	613	709
Control Delay (s)	10.8	9.4	8.3	8.7	8.4	17.6	7.3
Approach Delay (s)	10.8	8.9		8.5		15.9	
Approach LOS	B	A		A		C	

Intersection Summary			
Delay	13.0		
HCM Level of Service	B		
Intersection Capacity Utilization	45.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	50	70	15	8	121	142	36	175	1	43	131	38
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	57	80	17	9	138	161	41	199	1	49	149	43

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	153	147	161	41	200	198	43
Volume Left (vph)	57	9	0	41	0	49	0
Volume Right (vph)	17	0	161	0	1	0	43
Hadj (s)	0.04	0.07	-0.67	0.53	0.03	0.16	-0.67
Departure Headway (s)	6.4	6.2	5.5	6.8	6.2	6.4	5.5
Degree Utilization, x	0.27	0.25	0.25	0.08	0.35	0.35	0.07
Capacity (veh/h)	523	541	611	500	543	531	602
Control Delay (s)	11.8	10.1	9.1	9.1	11.3	11.6	7.7
Approach Delay (s)	11.8	9.6		10.9		10.9	
Approach LOS	B	A		B		B	

Intersection Summary			
Delay	10.6		
HCM Level of Service	B		
Intersection Capacity Utilization	46.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	17	138	28	9	81	2	33	4	22	2	0	63
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	19	153	31	10	90	2	37	4	24	2	0	70
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	92			184			342	319	92	252	333	46
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	92			184			342	319	92	252	333	46
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			93	99	97	100	100	93
cM capacity (veh/h)	1500			1388			539	585	947	649	574	1013

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1
Volume Total	19	102	82	10	60	32	41	24	72
Volume Left	19	0	0	10	0	0	37	0	2
Volume Right	0	0	31	0	0	2	0	24	70
cSH	1500	1700	1700	1388	1700	1700	544	947	996
Volume to Capacity	0.01	0.06	0.05	0.01	0.04	0.02	0.08	0.03	0.07
Queue Length 95th (ft)	1	0	0	1	0	0	6	2	6
Control Delay (s)	7.4	0.0	0.0	7.6	0.0	0.0	12.2	8.9	8.9
Lane LOS	A			A			B	A	A
Approach Delay (s)	0.7			0.7			10.9		8.9
Approach LOS							B		A

Intersection Summary			
Average Delay	3.6		
Intersection Capacity Utilization	23.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	21	69	24	39	179	1	82	3	13	0	2	10
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	24	79	28	45	206	1	94	3	15	0	2	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	207			107			347	438	53	401	451	103
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	207			107			347	438	53	401	451	103
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			97			83	99	99	100	100	99
cM capacity (veh/h)	1362			1482			553	487	1002	504	478	931

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1
Volume Total	24	53	54	45	137	70	98	15	14
Volume Left	24	0	0	45	0	0	94	0	0
Volume Right	0	0	28	0	0	1	0	15	11
cSH	1362	1700	1700	1482	1700	1700	551	1002	804
Volume to Capacity	0.02	0.03	0.03	0.03	0.08	0.04	0.18	0.01	0.02
Queue Length 95th (ft)	1	0	0	2	0	0	16	1	1
Control Delay (s)	7.7	0.0	0.0	7.5	0.0	0.0	12.9	8.6	9.6
Lane LOS	A			A			B	A	A
Approach Delay (s)	1.4			1.3			12.4		9.6
Approach LOS							B		A

Intersection Summary			
Average Delay	4.0		
Intersection Capacity Utilization	29.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	96	37	4	79	23	11
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	123	47	5	101	29	14
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)				1290		
pX, platoon unblocked						
vC, conflicting volume			171		258	85
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			171		258	85
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		96	99
cM capacity (veh/h)			1404		706	957

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2
Volume Total	82	88	5	101	29	14
Volume Left	0	0	5	0	29	0
Volume Right	0	47	0	0	0	14
cSH	1700	1700	1404	1700	706	957
Volume to Capacity	0.05	0.05	0.00	0.06	0.04	0.01
Queue Length 95th (ft)	0	0	0	0	3	1
Control Delay (s)	0.0	0.0	7.6	0.0	10.3	8.8
Lane LOS			A		B	A
Approach Delay (s)	0.0		0.4		9.8	
Approach LOS					A	

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	14.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	35	36	1	140	55	1
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	42	43	1	167	65	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)				1290		
pX, platoon unblocked						
vC, conflicting volume			85		232	42
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			85		232	42
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		91	100
cM capacity (veh/h)			1510		735	1019

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2
Volume Total	28	57	1	167	65	1
Volume Left	0	0	1	0	65	0
Volume Right	0	43	0	0	0	1
cSH	1700	1700	1510	1700	735	1019
Volume to Capacity	0.02	0.03	0.00	0.10	0.09	0.00
Queue Length 95th (ft)	0	0	0	0	7	0
Control Delay (s)	0.0	0.0	7.4	0.0	10.4	8.5
Lane LOS			A		B	A
Approach Delay (s)	0.0		0.1		10.3	
Approach LOS					B	

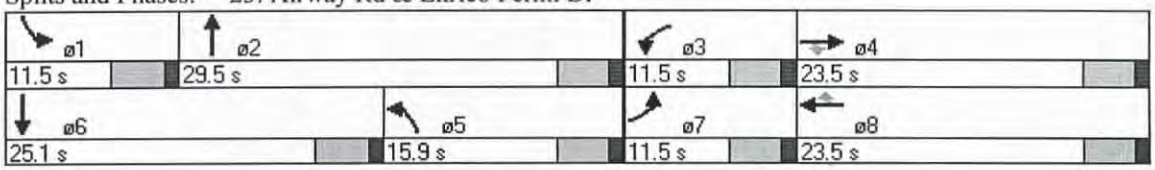
Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	17.4%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850			0.850		0.968			0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1770	1504	1770	1863	1583	1770	3426	0	1770	3529	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1770	1504	1770	1863	1583	1770	3426	0	1770	3529	0
Satd. Flow (RTOR)			42			195		48			2	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	7	70	31	6	12	144	65	156	42	658	324	6
Adj. Flow (vph)	9	95	42	8	16	195	88	211	57	889	438	8
Lane Group Flow (vph)	9	95	42	8	16	195	88	268	0	889	446	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Total Split (s)	11.5	23.5	23.5	11.5	23.5	23.5	15.9	29.5	0.0	11.5	25.1	0.0
Act Effct Green (s)	6.4	9.6	9.6	6.3	9.6	9.6	9.6	16.9		35.3	44.5	
Actuated g/C Ratio	0.08	0.13	0.13	0.08	0.13	0.13	0.13	0.22		0.46	0.59	
v/c Ratio	0.06	0.42	0.19	0.05	0.07	0.53	0.39	0.34		1.08	0.22	
Control Delay	32.6	35.7	11.5	32.7	28.2	10.4	43.0	26.8		63.7	11.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	32.6	35.7	11.5	32.7	28.2	10.4	43.0	26.8		63.7	11.8	
LOS	C	D	B	C	C	B	D	C		E	B	
Approach Delay		28.6			12.5			30.8			46.4	
Approach LOS		C			B			C			D	

Intersection Summary

Cycle Length: 76
Actuated Cycle Length: 76
Offset: 10 (13%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.08
Intersection Signal Delay: 38.8 — Intersection LOS: D
Intersection Capacity Utilization 57.9% — ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 23: Airway Rd & Enrico Fermi Dr

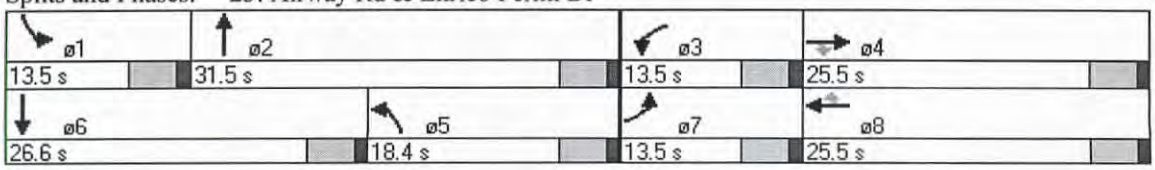


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850			0.850		0.994			0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1770	1504	1770	1863	1583	1770	3518	0	1770	3522	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1770	1504	1770	1863	1583	1770	3518	0	1770	3522	0
Satd. Flow (RTOR)			12			535		5			4	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	7	19	10	6	44	567	93	430	16	169	122	4
Adj. Flow (vph)	9	23	12	7	54	691	113	524	20	206	149	5
Lane Group Flow (vph)	9	23	12	7	54	691	113	544	0	206	154	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Total Split (s)	13.5	25.5	25.5	13.5	25.5	25.5	18.4	31.5	0.0	13.5	26.6	0.0
Act Effct Green (s)	6.4	20.4	20.4	6.3	20.4	20.4	16.3	32.4		17.0	35.2	
Actuated g/C Ratio	0.08	0.24	0.24	0.08	0.24	0.24	0.19	0.39		0.20	0.42	
v/c Ratio	0.07	0.05	0.03	0.05	0.12	0.88	0.33	0.40		0.58	0.10	
Control Delay	36.7	20.2	10.0	36.7	21.7	19.8	24.5	17.4		42.4	27.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	36.7	20.2	10.0	36.7	21.7	19.8	24.5	17.4		42.4	27.2	
LOS	D	C	A	D	C	B	C	B		D	C	
Approach Delay		20.8			20.1			18.6			35.9	
Approach LOS		C			C			B			D	

Intersection Summary

Cycle Length: 84
Actuated Cycle Length: 84
Offset: 53 (63%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 22.7 — Intersection LOS: C
Intersection Capacity Utilization 60.8% — ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 23: Airway Rd & Enrico Fermi Dr

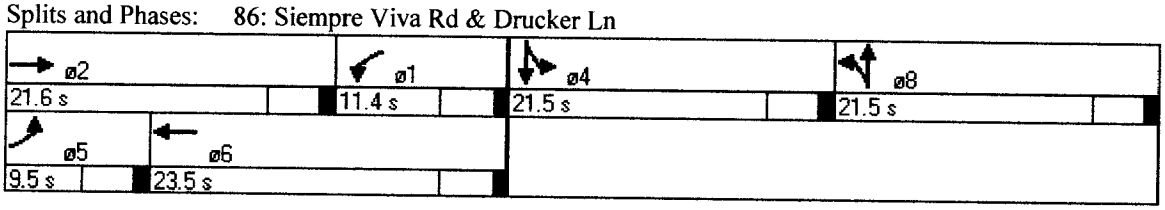


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.975			0.976			0.869			0.943	
Flt Protected	0.950			0.950			0.950				0.978	
Satd. Flow (prot)	1770	4958	0	1770	4963	0	1770	1619	0	0	1718	0
Flt Permitted	0.950			0.950			0.950				0.978	
Satd. Flow (perm)	1770	4958	0	1770	4963	0	1770	1619	0	0	1718	0
Satd. Flow (RTOR)		25			47			7			28	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	18	117	23	61	223	43	13	1	6	28	7	26
Adj. Flow (vph)	20	127	25	66	242	47	14	1	7	30	8	28
Lane Group Flow (vph)	20	152	0	66	289	0	14	8	0	0	66	0
Turn Type	Prot			Prot			Split			Split		
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases												
Total Split (s)	9.5	21.6	0.0	11.4	23.5	0.0	21.5	21.5	0.0	21.5	21.5	0.0
Act Effct Green (s)	6.9	40.4		7.1	44.7		6.7	6.7			7.8	
Actuated g/C Ratio	0.09	0.53		0.09	0.59		0.09	0.09			0.10	
v/c Ratio	0.12	0.06		0.40	0.10		0.09	0.05			0.33	
Control Delay	33.0	8.7		39.2	7.5		32.8	20.9			24.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay	33.0	8.7		39.2	7.5		32.8	20.9			24.8	
LOS	C	A		D	A		C	C			C	
Approach Delay		11.5			13.4			28.4			24.8	
Approach LOS		B			B			C			C	

Intersection Summary

Cycle Length: 76
Actuated Cycle Length: 76
Offset: 48 (63%), Referenced to phase 2:EBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.40
Intersection Signal Delay: 14.6 — Intersection LOS: B
Intersection Capacity Utilization 28.8% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 86: Siempre Viva Rd & Drucker Ln

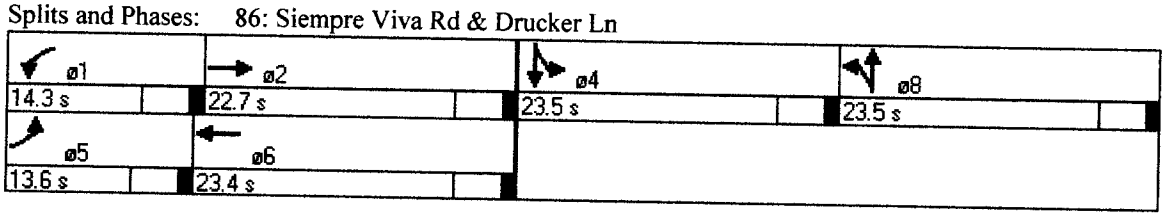


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.980			0.962			0.864			0.978	
Flt Protected	0.950			0.950			0.950				0.976	
Satd. Flow (prot)	1770	4984	0	1770	4892	0	1770	1609	0	0	1778	0
Flt Permitted	0.950			0.950			0.950				0.976	
Satd. Flow (perm)	1770	4984	0	1770	4892	0	1770	1609	0	0	1778	0
Satd. Flow (RTOR)		31			87			19			11	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	44	211	32	124	237	79	26	2	17	49	33	16
Adj. Flow (vph)	48	232	35	136	260	87	29	2	19	54	36	18
Lane Group Flow (vph)	48	267	0	136	347	0	29	21	0	0	108	0
Turn Type	Prot			Prot			Split			Split		
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases												
Total Split (s)	13.6	22.7	0.0	14.3	23.4	0.0	23.5	23.5	0.0	23.5	23.5	0.0
Act Effct Green (s)	8.2	37.7		12.8	46.4		7.3	7.3			10.2	
Actuated g/C Ratio	0.10	0.45		0.15	0.55		0.09	0.09			0.12	
v/c Ratio	0.28	0.12		0.50	0.13		0.19	0.13			0.48	
Control Delay	38.6	14.0		44.0	2.6		37.8	18.7			37.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay	38.6	14.0		44.0	2.6		37.8	18.7			37.2	
LOS	D	B		D	A		D	B			D	
Approach Delay		17.8			14.3			29.8			37.2	
Approach LOS		B			B			C			D	

Intersection Summary

Cycle Length: 84
Actuated Cycle Length: 84
Offset: 47 (56%), Referenced to phase 2:EBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.50
Intersection Signal Delay: 18.8 — Intersection LOS: B
Intersection Capacity Utilization 33.7% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 86: Siempre Viva Rd & Drucker Ln

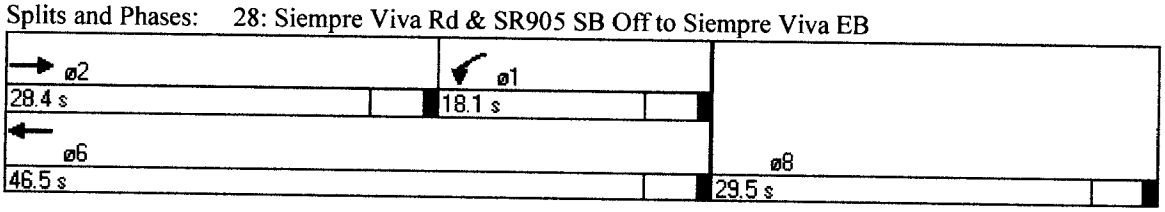


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.91	0.91	0.97	0.91	1.00	0.88
Frt	0.979					0.850
Flt Protected			0.950			
Satd. Flow (prot)	4979	0	3433	5085	0	2787
Flt Permitted			0.950			
Satd. Flow (perm)	4979	0	3433	5085	0	2787
Satd. Flow (RTOR)	42					1112
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	247	40	113	550	0	310
Adj. Flow (vph)	268	43	123	598	0	337
Lane Group Flow (vph)	311	0	123	598	0	337
Turn Type			Prot			custom
Protected Phases	2		1	6		
Permitted Phases						8
Total Split (s)	28.4	0.0	18.1	46.5	0.0	29.5
Act Effct Green (s)	47.5		12.6	62.0		6.0
Actuated g/C Ratio	0.62		0.17	0.82		0.08
v/c Ratio	0.10		0.22	0.14		0.27
Control Delay	4.1		28.0	1.9		0.5
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	4.1		28.0	1.9		0.5
LOS	A		C	A		A
Approach Delay	4.1			6.4		
Approach LOS	A			A		

Intersection Summary

Cycle Length: 76
Actuated Cycle Length: 76
Offset: 22 (29%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.27
Intersection Signal Delay: 4.4 — Intersection LOS: A
Intersection Capacity Utilization 23.2% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 28: Siempre Viva Rd & SR905 SB Off to Siempre Viva EB

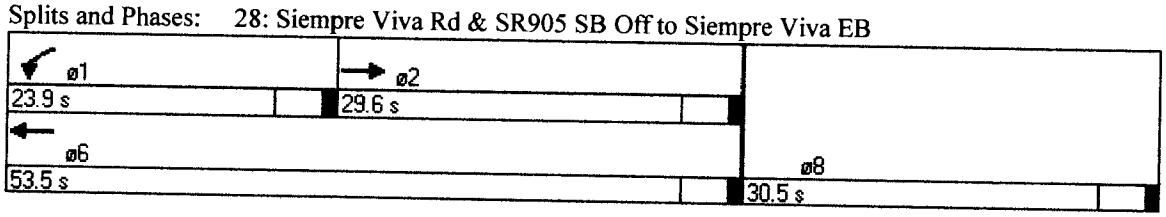


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.91	0.91	0.97	0.91	1.00	0.88
Frt	0.945					0.850
Flt Protected			0.950			
Satd. Flow (prot)	4806	0	3433	5085	0	2787
Flt Permitted			0.950			
Satd. Flow (perm)	4806	0	3433	5085	0	2787
Satd. Flow (RTOR)	178					1049
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	372	216	364	576	0	138
Adj. Flow (vph)	380	220	371	588	0	141
Lane Group Flow (vph)	600	0	371	588	0	141
Turn Type			Prot			custom
Protected Phases	2		1	6		
Permitted Phases						8
Total Split (s)	29.6	0.0	23.9	53.5	0.0	30.5
Act Effct Green (s)	55.0		13.0	72.8		6.0
Actuated g/C Ratio	0.65		0.15	0.87		0.07
v/c Ratio	0.19		0.70	0.13		0.12
Control Delay	2.3		38.7	1.5		0.2
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	2.3		38.7	1.5		0.2
LOS	A		D	A		A
Approach Delay	2.3			15.9		
Approach LOS	A			B		

Intersection Summary

Cycle Length: 84
Actuated Cycle Length: 84
Offset: 26 (31%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 9.8 — Intersection LOS: A
Intersection Capacity Utilization 29.1% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 28: Siempre Viva Rd & SR905 SB Off to Siempre Viva EB



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑			↱
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	557	454	0	0	209
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	593	483	0	0	222
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		281	733			
pX, platoon unblocked						
vC, conflicting volume	483				680	161
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	483				680	161
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	74
cM capacity (veh/h)	1076				384	855

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1
Volume Total	198	198	198	161	161	161	222
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	222
cSH	1700	1700	1700	1700	1700	1700	855
Volume to Capacity	0.12	0.12	0.12	0.09	0.09	0.09	0.26
Queue Length 95th (ft)	0	0	0	0	0	0	26
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	10.7
Lane LOS							B
Approach Delay (s)	0.0			0.0			10.7
Approach LOS							B

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	34.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑			↱
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	510	784	0	0	156
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	0	520	800	0	0	159
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		281	733			
pX, platoon unblocked						
vC, conflicting volume	800				973	267
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	800				973	267
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	78
cM capacity (veh/h)	819				249	731

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1
Volume Total	173	173	173	267	267	267	159
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	159
cSH	1700	1700	1700	1700	1700	1700	731
Volume to Capacity	0.10	0.10	0.10	0.16	0.16	0.16	0.22
Queue Length 95th (ft)	0	0	0	0	0	0	21
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	11.3
Lane LOS							B
Approach Delay (s)	0.0			0.0			11.3
Approach LOS							B

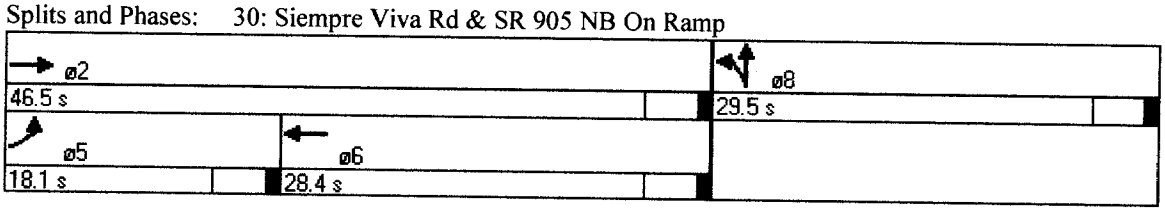
Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	36.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	1.00	0.86	0.86	1.00	1.00	0.88	1.00	1.00	1.00
Frt					0.951	0.850			0.850			
Flt Protected	0.950							0.953				
Satd. Flow (prot)	3433	5085	0	0	4570	1362	0	1775	2787	0	0	0
Flt Permitted	0.950							0.953				
Satd. Flow (perm)	3433	5085	0	0	4570	1362	0	1775	2787	0	0	0
Satd. Flow (RTOR)					145	146			402			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	74	483	0	0	290	279	164	3	386	0	0	0
Adj. Flow (vph)	77	503	0	0	302	291	171	3	402	0	0	0
Lane Group Flow (vph)	77	503	0	0	447	146	0	174	402	0	0	0
Turn Type	Prot					Perm	Split		Perm			
Protected Phases	5	2			6		8	8				
Permitted Phases						6			8			
Total Split (s)	18.1	46.5	0.0	0.0	28.4	28.4	29.5	29.5	29.5	0.0	0.0	0.0
Act Effct Green (s)	7.3	54.9			45.5	45.5		13.1	13.1			
Actuated g/C Ratio	0.10	0.72			0.60	0.60		0.17	0.17			
v/c Ratio	0.23	0.14			0.16	0.17		0.57	0.49			
Control Delay	35.0	2.5			3.7	2.5		35.3	5.1			
Queue Delay	0.0	0.0			0.0	0.0		0.0	0.0			
Total Delay	35.0	2.5			3.7	2.5		35.3	5.1			
LOS	C	A			A	A		D	A			
Approach Delay		6.8			3.4			14.2				
Approach LOS		A			A			B				

Intersection Summary

Cycle Length: 76
Actuated Cycle Length: 76
Offset: 53 (70%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.57
Intersection Signal Delay: 8.1 — Intersection LOS: A
Intersection Capacity Utilization 34.1% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 30: Siempre Viva Rd & SR 905 NB On Ramp

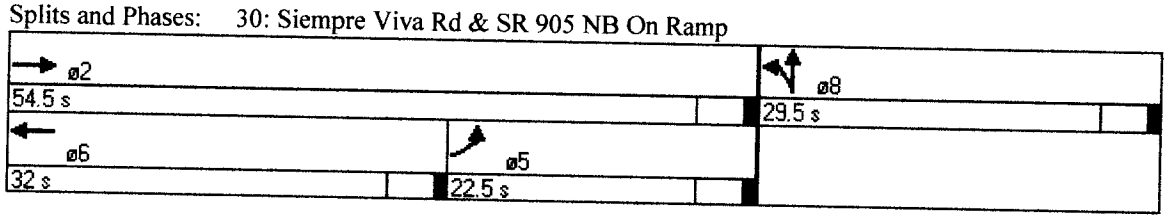


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	1.00	0.86	0.86	1.00	1.00	0.88	1.00	1.00	1.00
Frt					0.984	0.850			0.850			
Flt Protected	0.950							0.953				
Satd. Flow (prot)	3433	5085	0	0	4729	1362	0	1775	2787	0	0	0
Flt Permitted	0.950							0.953				
Satd. Flow (perm)	3433	5085	0	0	4729	1362	0	1775	2787	0	0	0
Satd. Flow (RTOR)					25	376			215			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	186	324	0	0	726	441	58	1	202	0	0	0
Adj. Flow (vph)	198	345	0	0	772	469	62	1	215	0	0	0
Lane Group Flow (vph)	198	345	0	0	865	376	0	63	215	0	0	0
Turn Type	Prot					Perm	Split		Perm			
Protected Phases	5	2			6		8	8				
Permitted Phases						6			8			
Total Split (s)	22.5	54.5	0.0	0.0	32.0	32.0	29.5	29.5	29.5	0.0	0.0	0.0
Act Effct Green (s)	10.5	67.4			52.9	52.9		8.6	8.6			
Actuated g/C Ratio	0.12	0.80			0.63	0.63		0.10	0.10			
v/c Ratio	0.46	0.08			0.29	0.38		0.35	0.45			
Control Delay	37.2	1.0			2.9	1.1		39.7	8.4			
Queue Delay	0.0	0.0			0.0	0.0		0.0	0.0			
Total Delay	37.2	1.0			2.9	1.1		39.7	8.4			
LOS	D	A			A	A		D	A			
Approach Delay		14.2			2.3			15.5				
Approach LOS		B			A			B				

Intersection Summary

Cycle Length: 84
Actuated Cycle Length: 84
Offset: 40 (48%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.46
Intersection Signal Delay: 7.2 — Intersection LOS: A
Intersection Capacity Utilization 36.8% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 30: Siempre Viva Rd & SR 905 NB On Ramp

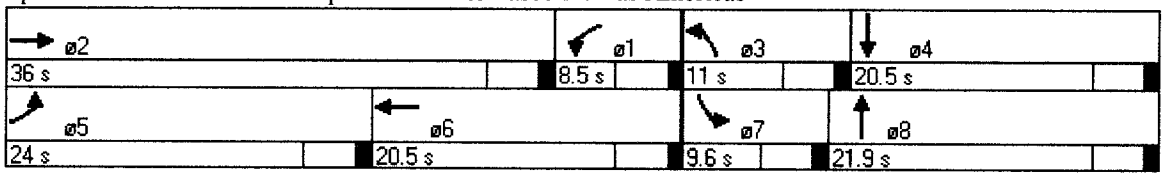


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850		0.995				0.850		0.958	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5085	1583	1770	3522	0	1770	3539	1583	1770	3391	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	5085	1583	1770	3522	0	1770	3539	1583	1770	3391	0
Satd. Flow (RTOR)			121		4				18		68	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	382	327	114	11	199	7	88	31	17	54	192	74
Adj. Flow (vph)	406	348	121	12	212	7	94	33	18	57	204	79
Lane Group Flow (vph)	406	348	121	12	219	0	94	33	18	57	283	0
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2						8			
Total Split (s)	24.0	36.0	36.0	8.5	20.5	0.0	11.0	21.9	21.9	9.6	20.5	0.0
Act Effct Green (s)	22.5	47.2	47.2	4.5	22.4		6.9	13.4	13.4	5.6	10.3	
Actuated g/C Ratio	0.30	0.62	0.62	0.06	0.29		0.09	0.18	0.18	0.07	0.14	
v/c Ratio	0.78	0.11	0.12	0.11	0.21		0.59	0.05	0.06	0.44	0.54	
Control Delay	33.8	6.1	1.6	35.7	23.0		49.5	25.8	12.5	45.0	26.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	33.8	6.1	1.6	35.7	23.0		49.5	25.8	12.5	45.0	26.3	
LOS	C	A	A	D	C		D	C	B	D	C	
Approach Delay		18.3			23.6			39.5			29.5	
Approach LOS		B			C			D			C	

Intersection Summary

Cycle Length: 76
Actuated Cycle Length: 76
Offset: 3 (4%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 23.4 — Intersection LOS: C
Intersection Capacity Utilization 52.8% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 32: Siempre Viva Rd & Paseo De Las Americas

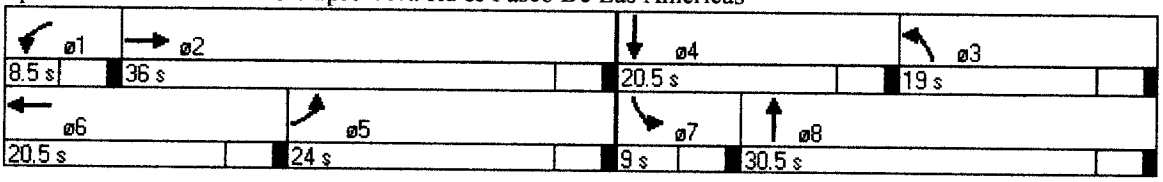


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850		0.997				0.850		0.919	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5085	1583	1770	3529	0	1770	3539	1583	1770	3253	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	5085	1583	1770	3529	0	1770	3539	1583	1770	3253	0
Satd. Flow (RTOR)			98		2				8		98	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	358	115	96	30	525	12	266	134	8	5	82	96
Adj. Flow (vph)	365	117	98	31	536	12	271	137	8	5	84	98
Lane Group Flow (vph)	365	117	98	31	548	0	271	137	8	5	182	0
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2						8			
Total Split (s)	24.0	36.0	36.0	8.5	20.5	0.0	19.0	30.5	30.5	9.0	20.5	0.0
Act Effct Green (s)	20.0	39.2	39.2	5.8	20.9		19.1	29.3	29.3	5.0	8.0	
Actuated g/C Ratio	0.24	0.47	0.47	0.07	0.25		0.23	0.35	0.35	0.06	0.10	
v/c Ratio	0.87	0.05	0.12	0.26	0.62		0.67	0.11	0.01	0.05	0.46	
Control Delay	52.3	14.4	3.8	45.3	41.9		38.2	18.4	10.8	36.8	18.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	52.3	14.4	3.8	45.3	41.9		38.2	18.4	10.8	36.8	18.8	
LOS	D	B	A	D	D		D	B	B	D	B	
Approach Delay		36.5			42.1			31.1			19.3	
Approach LOS		D			D			C			B	

Intersection Summary

Cycle Length: 84
Actuated Cycle Length: 84
Offset: 37 (44%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 35.2 — Intersection LOS: D
Intersection Capacity Utilization 68.2% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 32: Siempre Viva Rd & Paseo De Las Americas



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	16	278	11	12	178	11	29	10	0	16	5	18
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	20	352	14	15	225	14	37	13	0	20	6	23
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		1204			1284							
pX, platoon unblocked												
vC, conflicting volume	239			366			568	669	183	485	669	120
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	239			366			568	669	183	485	669	120
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			99			90	97	100	95	98	97
cM capacity (veh/h)	1325			1189			382	367	828	443	367	909

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1	SB 2
Volume Total	20	235	131	15	150	89	49	27	23
Volume Left	20	0	0	15	0	0	37	20	0
Volume Right	0	0	14	0	0	14	0	0	23
cSH	1325	1700	1700	1189	1700	1700	378	422	909
Volume to Capacity	0.02	0.14	0.08	0.01	0.09	0.05	0.13	0.06	0.03
Queue Length 95th (ft)	1	0	0	1	0	0	11	5	2
Control Delay (s)	7.8	0.0	0.0	8.1	0.0	0.0	16.0	14.1	9.1
Lane LOS	A			A			C	B	A
Approach Delay (s)	0.4			0.5			16.0	11.8	
Approach LOS							C	B	

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	28.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	40	100	28	9	511	14	55	9	3	4	10	46
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	47	116	33	10	594	16	64	10	3	5	12	53
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		1204			1284							
pX, platoon unblocked												
vC, conflicting volume	610			149			603	857	74	783	865	305
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	610			149			603	857	74	783	865	305
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	95			99			80	96	100	98	96	92
cM capacity (veh/h)	964			1430			327	277	972	263	274	691

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1	SB 2
Volume Total	47	78	71	10	396	214	78	16	53
Volume Left	47	0	0	10	0	0	64	5	0
Volume Right	0	0	33	0	0	16	3	0	53
cSH	964	1700	1700	1430	1700	1700	329	271	691
Volume to Capacity	0.05	0.05	0.04	0.01	0.23	0.13	0.24	0.06	0.08
Queue Length 95th (ft)	4	0	0	1	0	0	23	5	6
Control Delay (s)	8.9	0.0	0.0	7.5	0.0	0.0	19.3	19.1	10.6
Lane LOS	A			A			C	C	B
Approach Delay (s)	2.1			0.1			19.3	12.6	
Approach LOS							C	B	

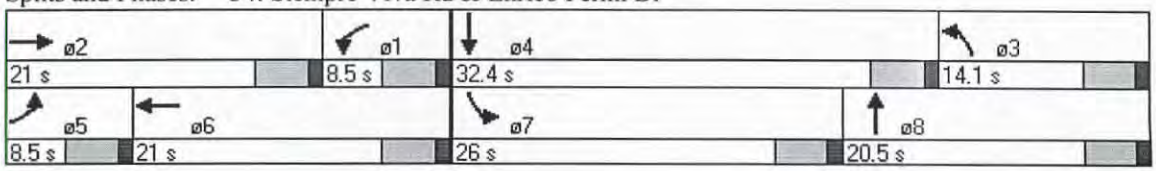
Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	38.3%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.994			0.919			0.930			0.938	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	1852	0	1770	3253	0	1770	3291	0	1770	3320	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	1852	0	1770	3253	0	1770	3291	0	1770	3320	0
Satd. Flow (RTOR)		3			122			94			17	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	46	239	10	14	87	101	89	88	78	250	20	14
Adj. Flow (vph)	55	288	12	17	105	122	107	106	94	301	24	17
Lane Group Flow (vph)	55	300	0	17	227	0	107	200	0	301	41	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Total Split (s)	8.5	21.0	0.0	8.5	21.0	0.0	14.1	20.5	0.0	26.0	32.4	0.0
Act Effct Green (s)	7.2	34.7		4.5	29.3		20.0	8.3		19.2	9.6	
Actuated g/C Ratio	0.09	0.46		0.06	0.39		0.26	0.11		0.25	0.13	
v/c Ratio	0.17	0.35		0.16	0.17		0.23	0.45		0.67	0.09	
Control Delay	47.3	12.7		41.3	12.5		21.0	20.1		42.5	33.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	47.3	12.7		41.3	12.5		21.0	20.1		42.5	33.9	
LOS	D	B		D	B		C	C		D	C	
Approach Delay		18.1			14.5			20.4			41.5	
Approach LOS		B			B			C			D	

Intersection Summary

Cycle Length: 76
Actuated Cycle Length: 76
Offset: 36 (47%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.67
Intersection Signal Delay: 24.4 — Intersection LOS: C
Intersection Capacity Utilization 48.5% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 34: Siempre Viva Rd & Enrico Fermi Dr

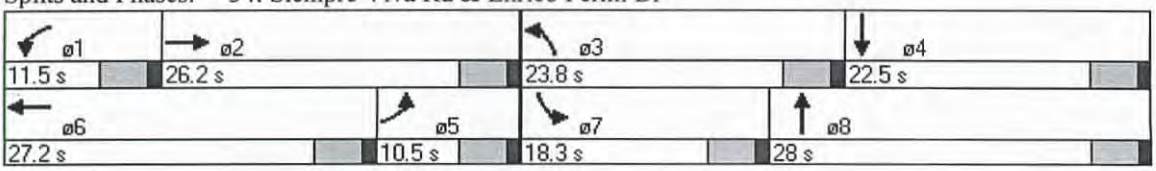


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.991			0.920			0.978			0.907	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	1846	0	1770	3256	0	1770	3461	0	1770	3210	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	1846	0	1770	3256	0	1770	3461	0	1770	3210	0
Satd. Flow (RTOR)		4			339			22			41	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	29	57	4	37	330	375	186	118	20	65	23	37
Adj. Flow (vph)	32	63	4	41	363	412	204	130	22	71	25	41
Lane Group Flow (vph)	32	67	0	41	775	0	204	152	0	71	66	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Total Split (s)	10.5	26.2	0.0	11.5	27.2	0.0	23.8	28.0	0.0	18.3	22.5	0.0
Act Effct Green (s)	6.3	42.2		8.0	43.7		14.9	14.6		9.3	7.1	
Actuated g/C Ratio	0.08	0.50		0.10	0.52		0.18	0.17		0.11	0.08	
v/c Ratio	0.12	0.07		0.24	0.42		0.65	0.24		0.36	0.21	
Control Delay	42.0	16.8		35.5	9.1		41.5	27.0		24.6	27.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	42.0	16.8		35.5	9.1		41.5	27.0		24.6	27.4	
LOS	D	B		D	A		D	C		C	C	
Approach Delay		24.9			10.4			35.3			25.9	
Approach LOS		C			B			D			C	

Intersection Summary

Cycle Length: 84
Actuated Cycle Length: 84
Offset: 46 (55%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.65
Intersection Signal Delay: 19.3 — Intersection LOS: B
Intersection Capacity Utilization 44.8% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 34: Siempre Viva Rd & Enrico Fermi Dr

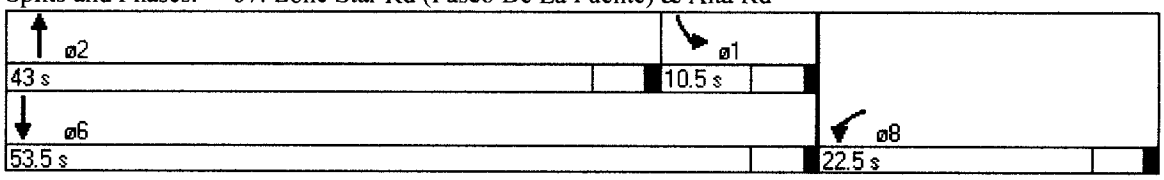


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850	0.997			
Flt Protected	0.950					
Satd. Flow (prot)	1770	1583	1857	0	1863	1863
Flt Permitted	0.950					
Satd. Flow (perm)	1770	1583	1857	0	1863	1863
Satd. Flow (RTOR)		2	2			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	15	2	480	11	0	120
Adj. Flow (vph)	16	2	522	12	0	130
Lane Group Flow (vph)	16	2	534	0	0	130
Turn Type		Perm			Prot	
Protected Phases	8		2		1	6
Permitted Phases		8				
Total Split (s)	22.5	22.5	43.0	0.0	10.5	53.5
Act Effct Green (s)	7.1	7.1	101.9			101.9
Actuated g/C Ratio	0.06	0.06	0.96			0.96
v/c Ratio	0.15	0.02	0.30			0.07
Control Delay	18.6	12.5	1.1			0.7
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	18.6	12.5	1.1			0.7
LOS	B	B	A			A
Approach Delay	17.9		1.1			0.7
Approach LOS	B		A			A

Intersection Summary

Cycle Length: 76
Actuated Cycle Length: 106.2
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.30
Intersection Signal Delay: 1.5 — Intersection LOS: A
Intersection Capacity Utilization 35.9% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 67: Lone Star Rd (Paseo De La Fuente) & Alta Rd

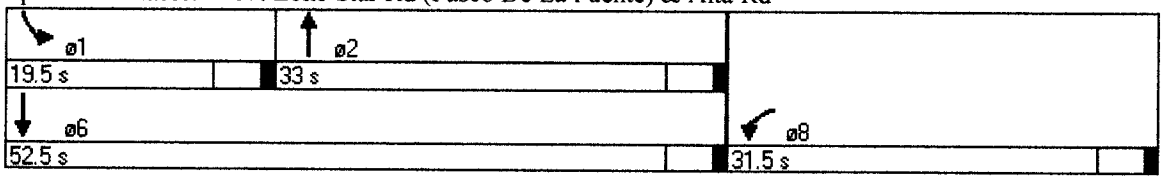


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850	0.977			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	1820	0	1770	1863
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1583	1820	0	1770	1863
Satd. Flow (RTOR)		1	14			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	11	1	93	19	2	345
Adj. Flow (vph)	12	1	101	21	2	375
Lane Group Flow (vph)	12	1	122	0	2	375
Turn Type		Perm			Prot	
Protected Phases	8		2		1	6
Permitted Phases		8				
Total Split (s)	31.5	31.5	33.0	0.0	19.5	52.5
Act Effct Green (s)	6.5	6.5	78.8		6.1	80.9
Actuated g/C Ratio	0.08	0.08	0.94		0.07	0.96
v/c Ratio	0.09	0.01	0.07		0.02	0.21
Control Delay	37.1	28.0	1.6		36.5	0.8
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	37.1	28.0	1.6		36.5	0.8
LOS	D	C	A		D	A
Approach Delay	36.4		1.6			1.0
Approach LOS	D		A			A

Intersection Summary

Cycle Length: 84
Actuated Cycle Length: 84
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.21
Intersection Signal Delay: 2.1 — Intersection LOS: A
Intersection Capacity Utilization 28.2% — ICU Level of Service A
Analysis Period (min) 15

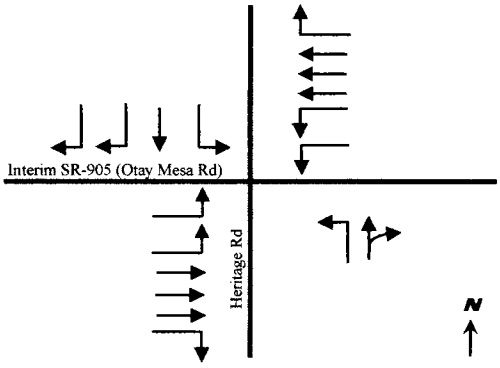
Splits and Phases: 67: Lone Star Rd (Paseo De La Fuente) & Alta Rd



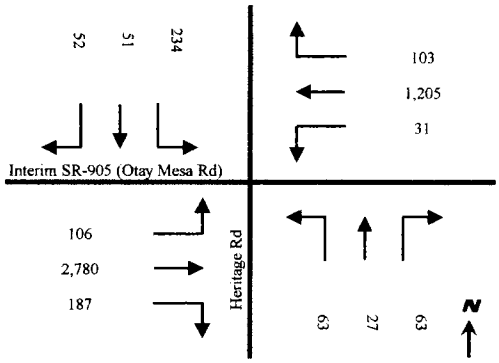
Existing + Project Phases 1-2 - ILV Analysis

Date of Analysis:	March 19, 2011	Intersection:	Otay Mesa Rd @ Heritage Rd
Analyst:	USW	Peak Hour Analyzed:	AM Peak Hour
Condition Analyzed:	Existing + Phases 1-2		

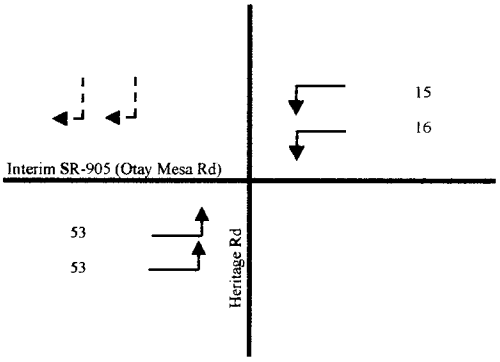
LANE GEOMETRY



TRAFFIC VOLUMES

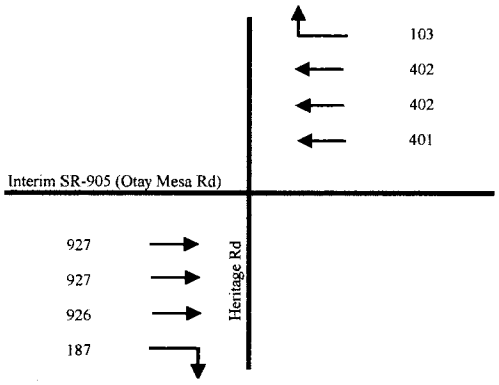


PHASE 1



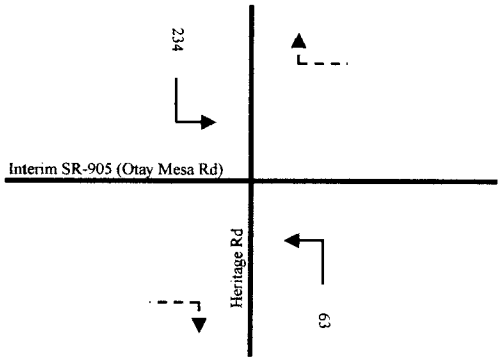
Phase 1 Critical ILV: 53

PHASE 2



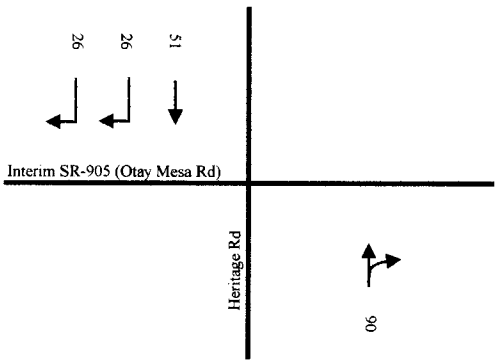
Phase 2 Critical ILV: 927

PHASE 3



Phase 3 Critical ILV: 234

PHASE 4



Phase 4 Critical ILV: 90

GRAND TOTAL ILV: 1,304

OPERATING CONDITION UNSTABLE

LEGEND

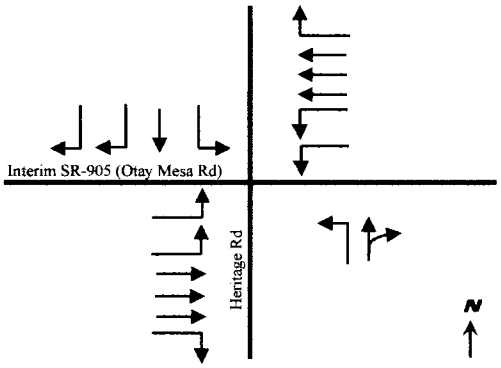
<1200 ILV = STABLE FLOW

1200 - 1500 ILV/HR = UNSTABLE FLOW

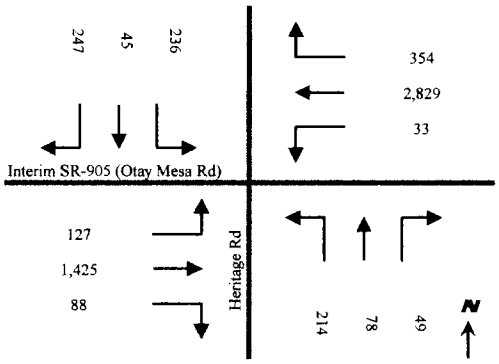
> 1500 ILV/HR = OVER CAPACITY

Date of Analysis:	March 19, 2011	Intersection:	Otay Mesa Rd @ Heritage Rd
Analyst:	VSH	Peak Hour Analyzed:	PM Peak Hour
Condition Analyzed:	Existing + Phases 1-2		

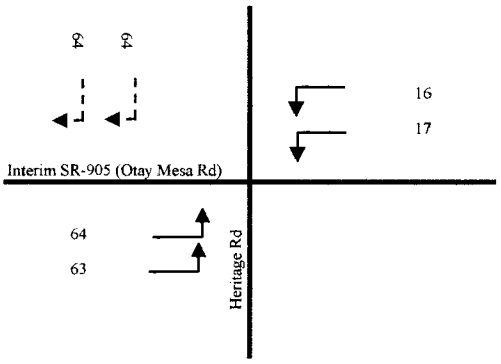
LANE GEOMETRY



TRAFFIC VOLUMES

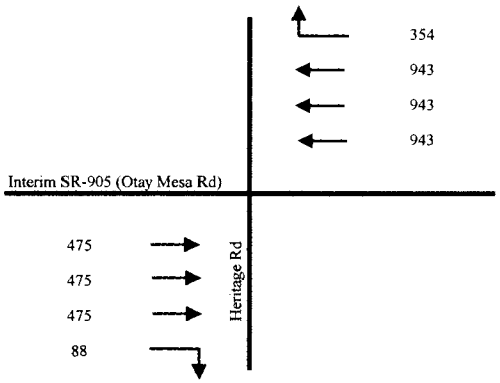


PHASE 1



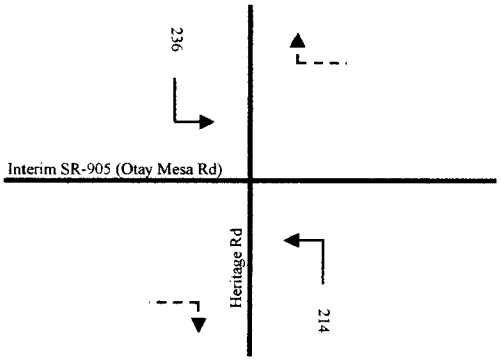
Phase 1 Critical ILV: 64

PHASE 2



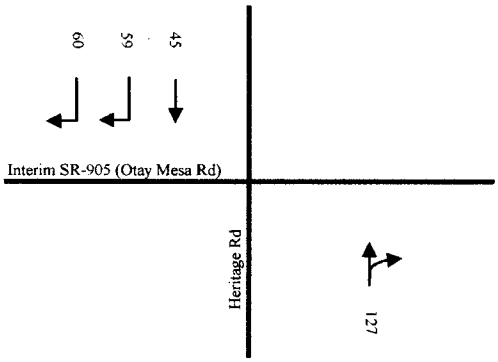
Phase 2 Critical ILV: 943

PHASE 3



Phase 3 Critical ILV: 236

PHASE 4



Phase 4 Critical ILV: 127

GRAND TOTAL ILV: 1,370

OPERATING CONDITION UNSTABLE

LEGEND

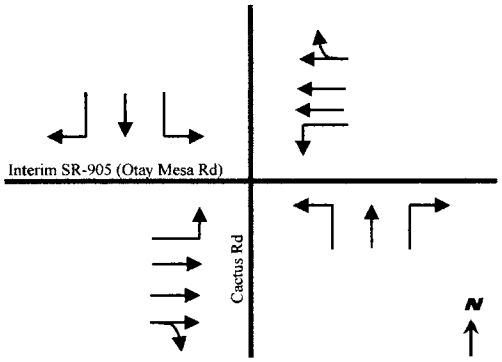
<1200 ILV = STABLE FLOW

1200 - 1500 ILV/HR = UNSTABLE FLOW

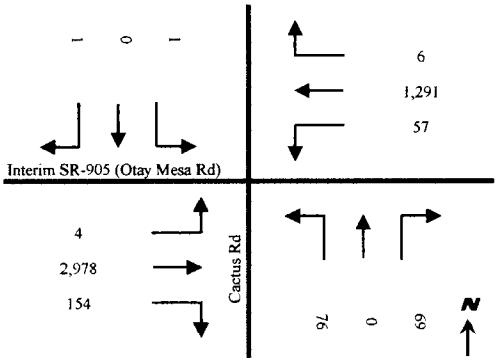
> 1500 ILV/HR = OVER CAPACITY

Date of Analysis:	March 19, 2011	Intersection:	Otay Mesa Rd @ Cactus Rd
Analyst:	VSH	Peak Hour Analyzed:	AM Peak Hour
Condition Analyzed:	Existing + Phases 1-2		

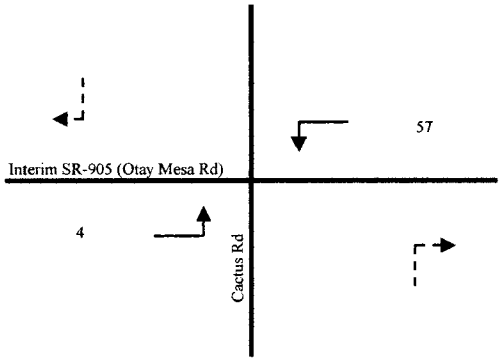
LANE GEOMETRY



TRAFFIC VOLUMES

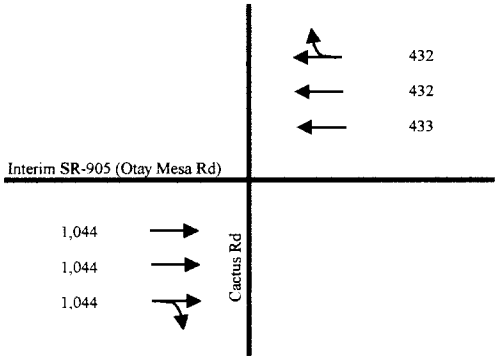


PHASE 1



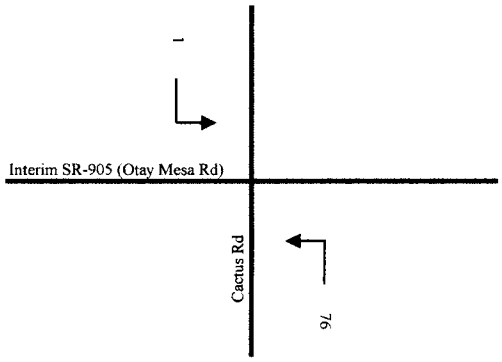
Phase 1 Critical ILV: 57

PHASE 2



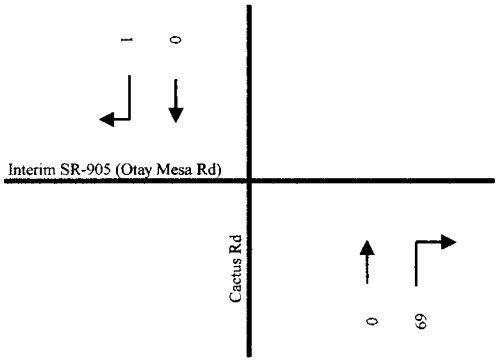
Phase 2 Critical ILV: 1,044

PHASE 3



Phase 3 Critical ILV: 76

PHASE 4



Phase 4 Critical ILV: 69

GRAND TOTAL ILV:	**1,246**
OPERATING CONDITION	**UNSTABLE**

LEGEND

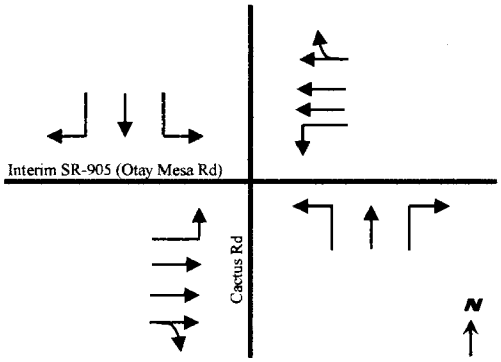
<1200 ILV = STABLE FLOW

1200 - 1500 ILV/HR = UNSTABLE FLOW

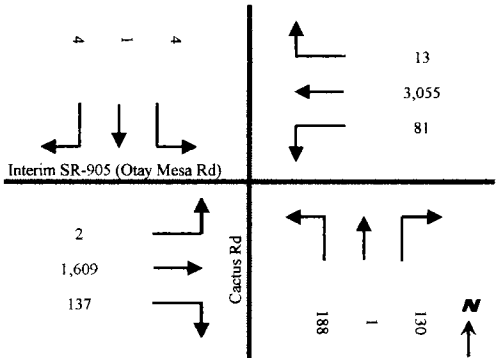
> 1500 ILV/HR = OVER CAPACITY

Date of Analysis:	March 19, 2011	Intersection:	Otay Mesa Rd @ Cactus Rd
Analyst:	[illegible]	Peak Hour Analyzed:	PM Peak Hour
Condition Analyzed:	Existing + Phases 1-2		

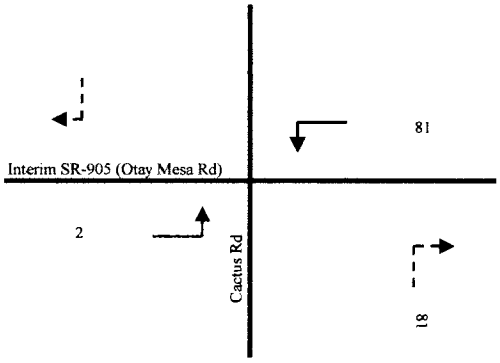
LANE GEOMETRY



TRAFFIC VOLUMES

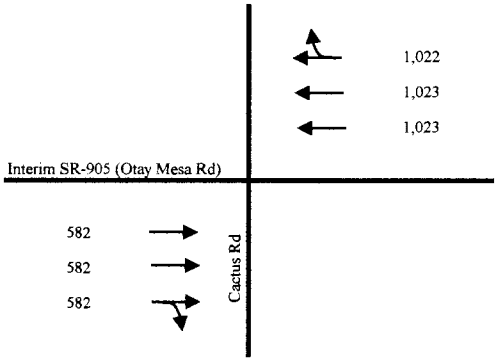


PHASE 1



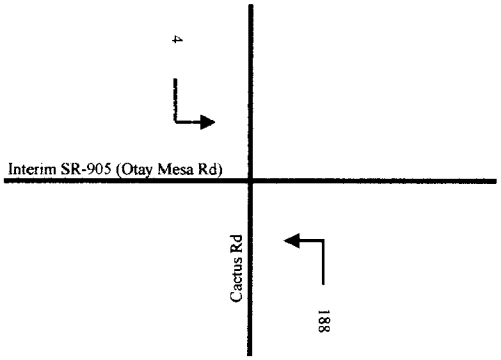
Phase 1 Critical ILV: 81

PHASE 2



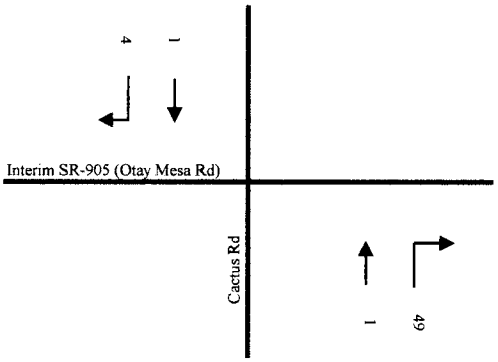
Phase 2 Critical ILV: 1,023

PHASE 3



Phase 3 Critical ILV: 188

PHASE 4



Phase 4 Critical ILV: 49

GRAND TOTAL ILV:	**1,341**
OPERATING CONDITION	**UNSTABLE**

LEGEND

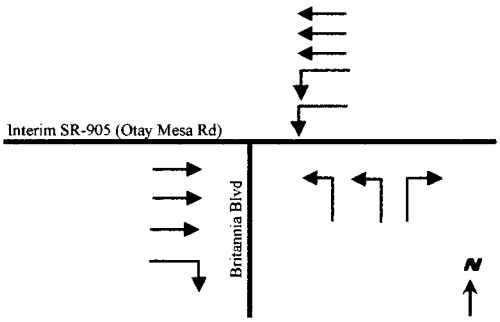
<1200 ILV = STABLE FLOW

1200 - 1500 ILV/HR = UNSTABLE FLOW

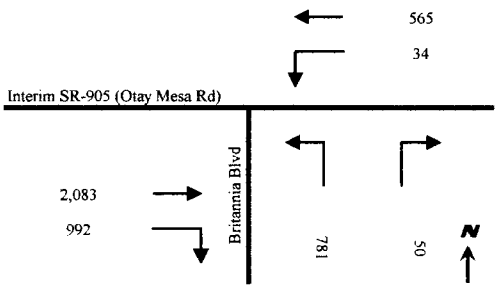
> 1500 ILV/HR = OVER CAPACITY

Date of Analysis:	March 19, 2011	Intersection:	Otay Mesa Rd @ Britannia Blvd
Analyst:	DSJ	Peak Hour Analyzed:	AM Peak Hour
Condition Analyzed:	Existing + Phases 1-2		

LANE GEOMETRY



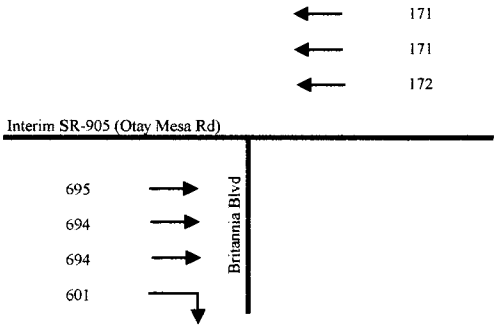
TRAFFIC VOLUMES



PHASE 1

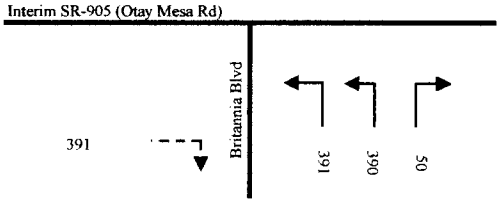
Phase 1 Critical ILV: 17

PHASE 2



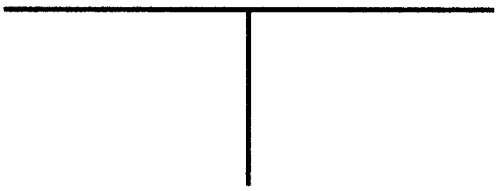
Phase 2 Critical ILV: 695

PHASE 3



Phase 3 Critical ILV: 391

PHASE 4



Phase 4 Critical ILV:

GRAND TOTAL ILV: 1,103

OPERATING CONDITION STABLE

LEGEND

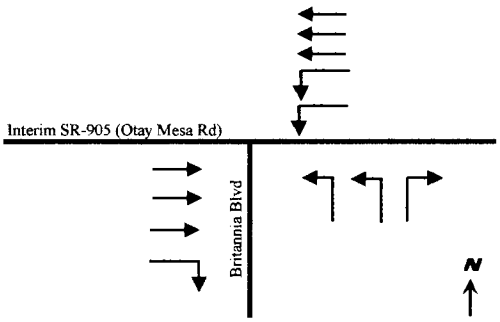
<1200 ILV = STABLE FLOW

1200 - 1500 ILV/HR = UNSTABLE FLOW

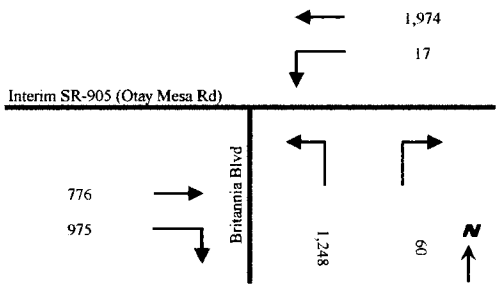
> 1500 ILV/HR = OVER CAPACITY

Date of Analysis:	March 19, 2011	Intersection:	Otay Mesa Rd @ Britannia Blvd
Analyst:	VSH	Peak Hour Analyzed:	PM Peak Hour
Condition Analyzed:	Existing + Phases 1-2		

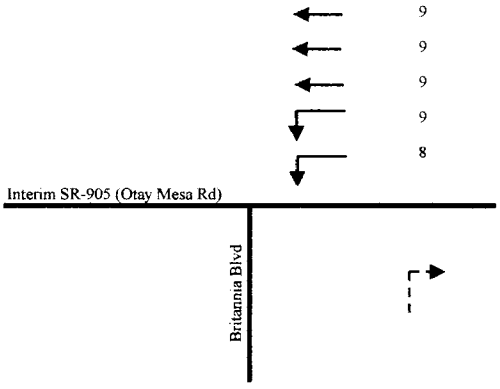
LANE GEOMETRY



TRAFFIC VOLUMES

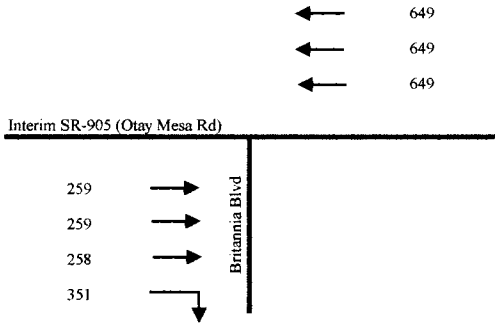


PHASE 1



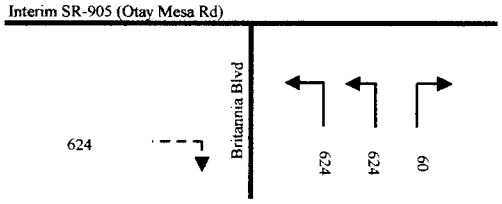
Phase 1 Critical ILV: 9

PHASE 2



Phase 2 Critical ILV: 649

PHASE 3



Phase 3 Critical ILV: 624

PHASE 4

Phase 4 Critical ILV:

GRAND TOTAL ILV: 1,282

OPERATING CONDITION UNSTABLE

LEGEND

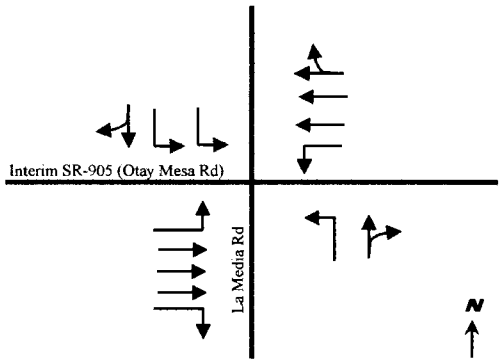
<1200 ILV = STABLE FLOW

1200 - 1500 ILV/HR = UNSTABLE FLOW

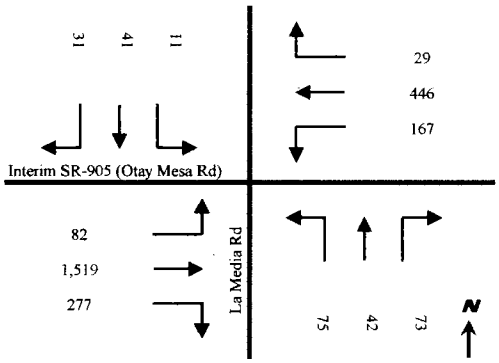
> 1500 ILV/HR = OVER CAPACITY

Date of Analysis:	March 19, 2011	Intersection:	Otay Mesa Rd @ La Media Rd
Analyst:	USJC	Peak Hour Analyzed:	AM Peak Hour
Condition Analyzed:	Existing + Phases 1-2		

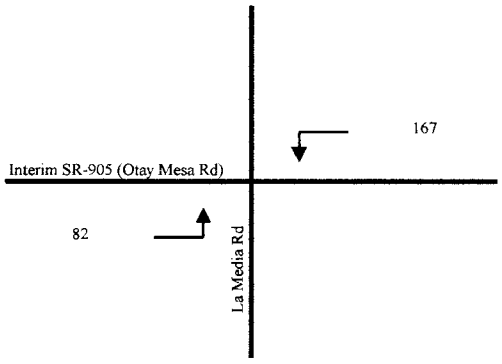
LANE GEOMETRY



TRAFFIC VOLUMES

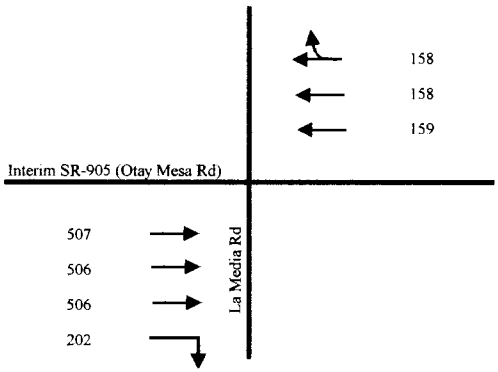


PHASE 1



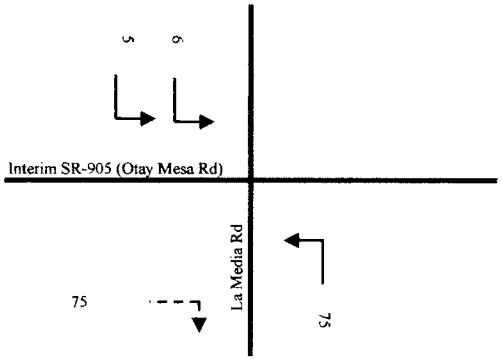
Phase 1 Critical ILV: 167

PHASE 2



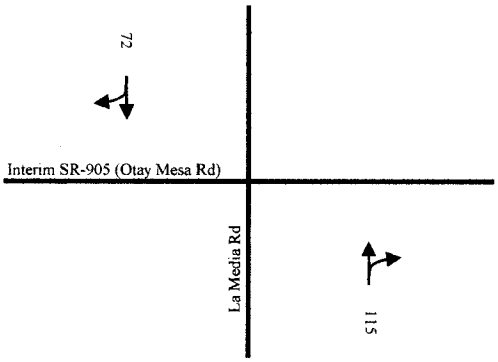
Phase 2 Critical ILV: 507

PHASE 3



Phase 3 Critical ILV: 75

PHASE 4



Phase 4 Critical ILV: 115

GRAND TOTAL ILV: **864**

OPERATING CONDITION **STABLE**

LEGEND

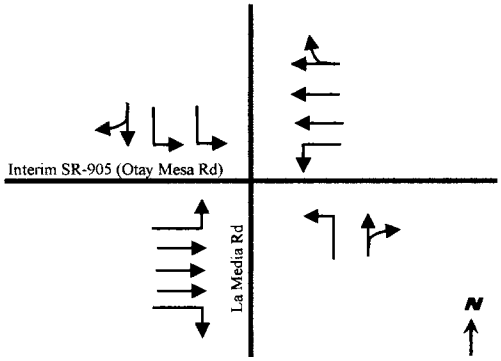
<1200 ILV = STABLE FLOW

1200 - 1500 ILV/HR = UNSTABLE FLOW

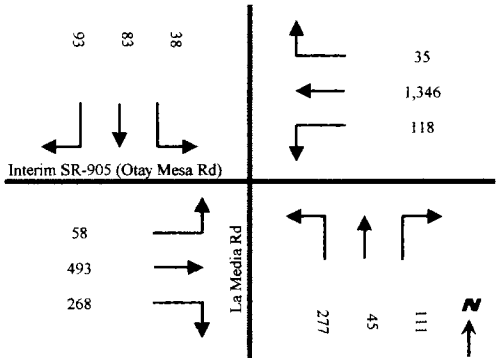
> 1500 ILV/HR = OVER CAPACITY

Date of Analysis:	March 19, 2011	Intersection:	Otay Mesa Rd @ La Media Rd
Analyst:	VSH	Peak Hour Analyzed:	PM Peak Hour
Condition Analyzed:	Existing + Phases 1-2		

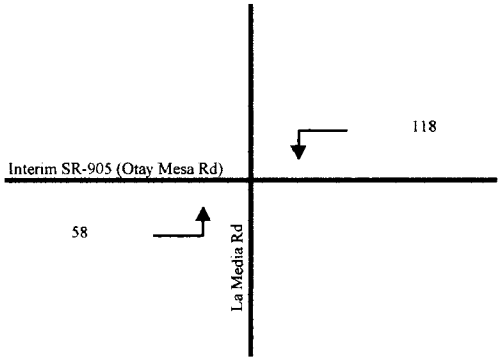
LANE GEOMETRY



TRAFFIC VOLUMES

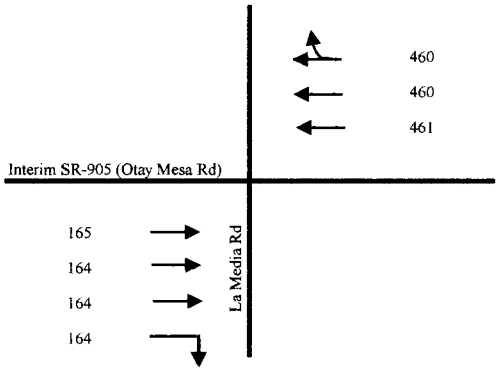


PHASE 1



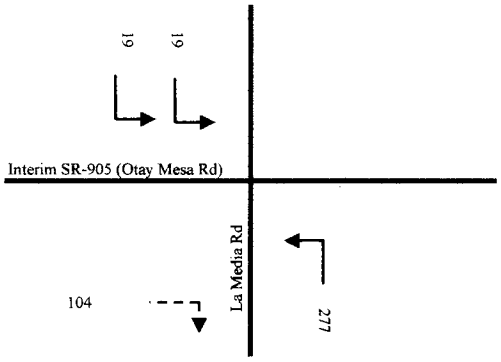
Phase 1 Critical ILV: 118

PHASE 2



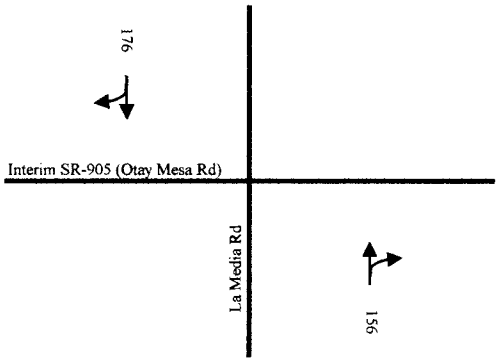
Phase 2 Critical ILV: 461

PHASE 3



Phase 3 Critical ILV: 277

PHASE 4



Phase 4 Critical ILV: 176

GRAND TOTAL ILV:	**1,032**
OPERATING CONDITION	**STABLE**

LEGEND

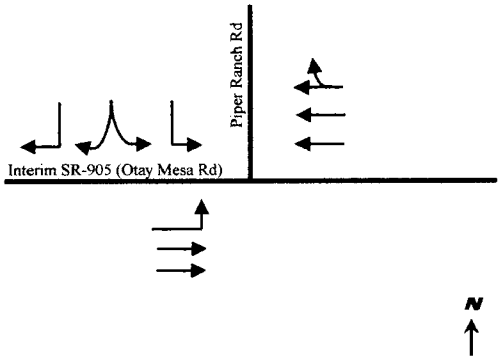
<1200 ILV = STABLE FLOW

1200 - 1500 ILV/HR = UNSTABLE FLOW

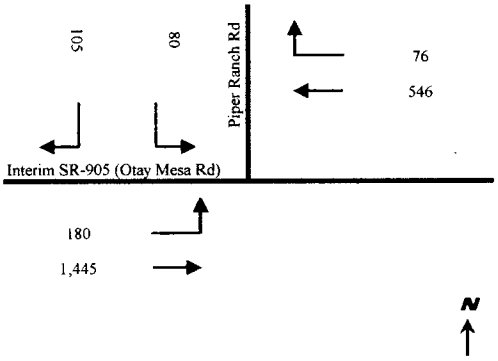
> 1500 ILV/HR = OVER CAPACITY

Date of Analysis:	March 19, 2011	Intersection:	Otay Mesa Rd @ Piper Ranch Rd
Analyst:	VJH	Peak Hour Analyzed:	AM Peak Hour
Condition Analyzed:	Existing + Phases 1-2		

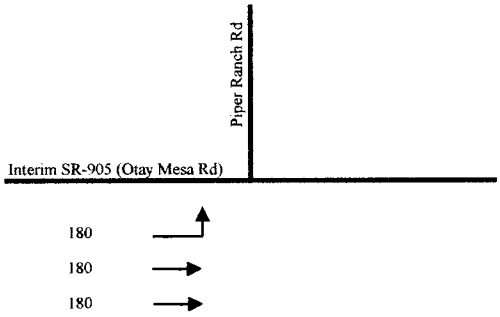
LANE GEOMETRY



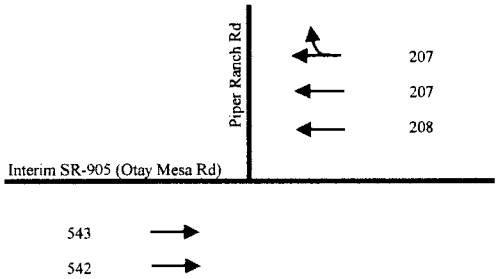
TRAFFIC VOLUMES



PHASE 1



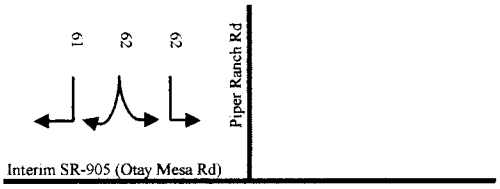
PHASE 2



Phase 1 Critical ILV: 180

Phase 2 Critical ILV: 543

PHASE 3



PHASE 4

Phase 3 Critical ILV: 62

Phase 4 Critical ILV:

GRAND TOTAL ILV: 785

OPERATING CONDITION STABLE

LEGEND

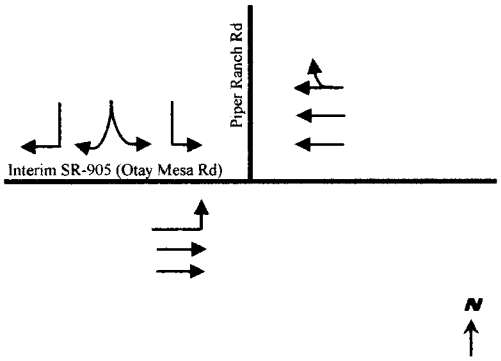
<1200 ILV = STABLE FLOW

1200 - 1500 ILV/HR = UNSTABLE FLOW

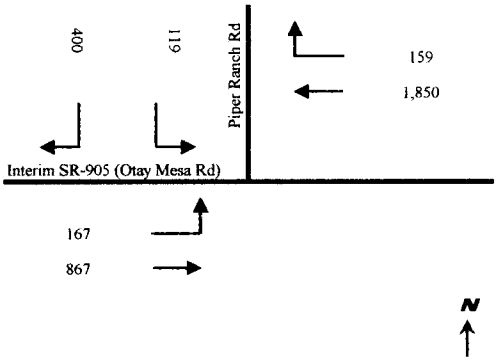
> 1500 ILV/HR = OVER CAPACITY

Date of Analysis:	March 19, 2011	Intersection:	Otay Mesa Rd @ Piper Ranch Rd
Analyst:	VJH	Peak Hour Analyzed:	PM Peak Hour
Condition Analyzed:	Existing + Phases 1-2		

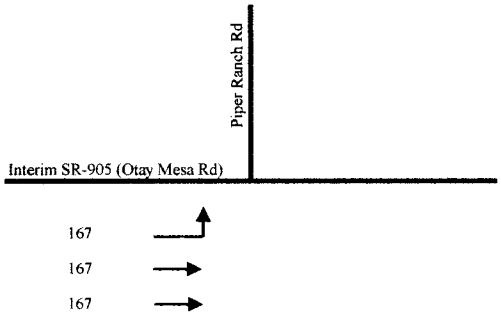
LANE GEOMETRY



TRAFFIC VOLUMES

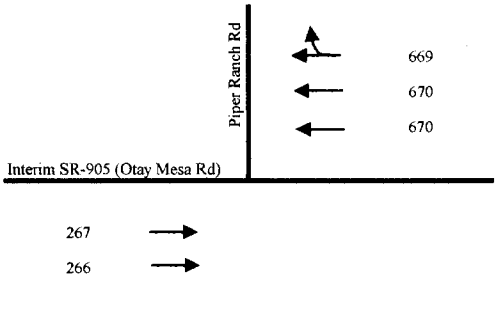


PHASE 1



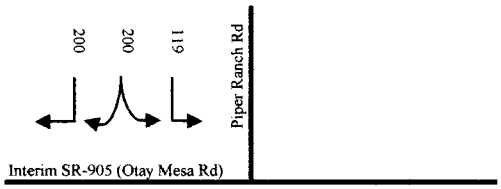
Phase 1 Critical ILV: 167

PHASE 2



Phase 2 Critical ILV: 670

PHASE 3



Phase 3 Critical ILV: 200

PHASE 4

Phase 4 Critical ILV:

GRAND TOTAL ILV: **1,037**

OPERATING CONDITION **STABLE**

LEGEND

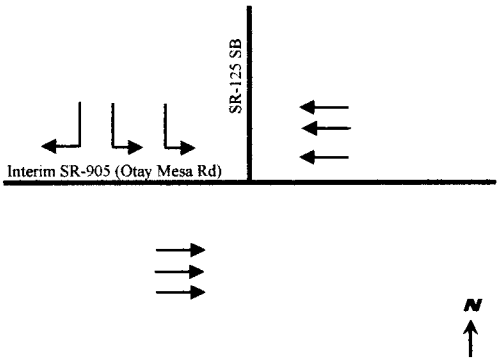
<1200 ILV = STABLE FLOW

1200 - 1500 ILV/HR = UNSTABLE FLOW

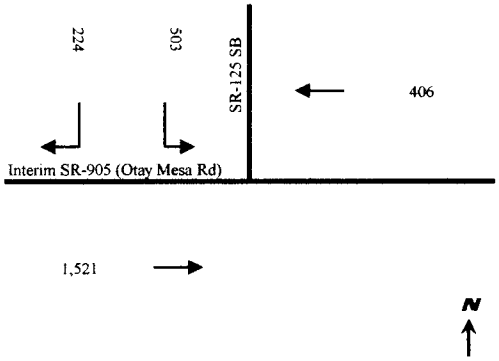
> 1500 ILV/HR = OVER CAPACITY

Date of Analysis:	March 19, 2011	Intersection:	Otay Mesa Rd @SR-125 SB
Analyst:	VJH	Peak Hour Analyzed:	AM Peak Hour
Condition Analyzed:	Existing + Phases 1-2		

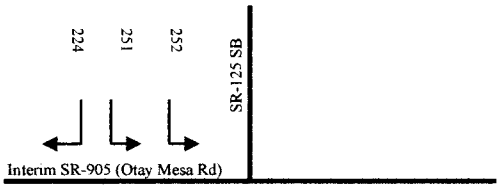
LANE GEOMETRY



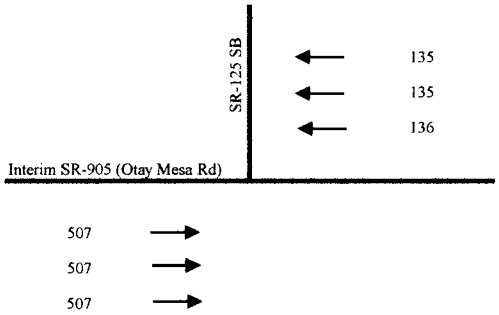
TRAFFIC VOLUMES



PHASE 1

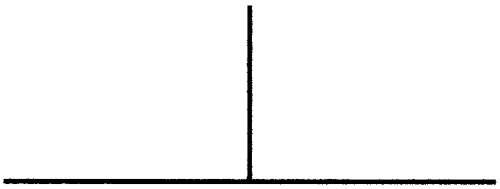


PHASE 2



Phase 1 Critical ILV:	252	Phase 2 Critical ILV:	507

PHASE 3



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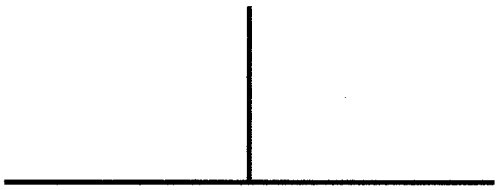


Phase 3 Critical ILV:		Phase 4 Critical ILV:	

GRAND TOTAL ILV:	**759**
OPERATING CONDITION	**STABLE**

LEGEND

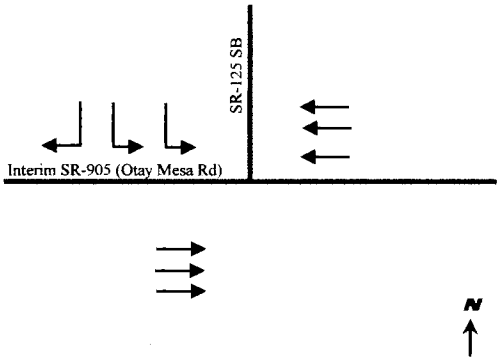
<1200 ILV = STABLE FLOW

1200 - 1500 ILV/HR = UNSTABLE FLOW

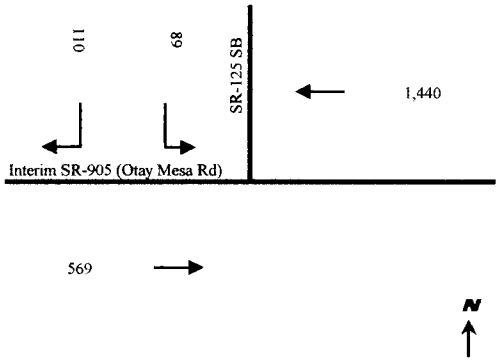
> 1500 ILV/HR = OVER CAPACITY

Date of Analysis:	March 19, 2011	Intersection:	Otay Mesa Rd @SR-125 SB
Analyst:	VSH	Peak Hour Analyzed:	PM Peak Hour
Condition Analyzed:	Existing + Phases 1-2		

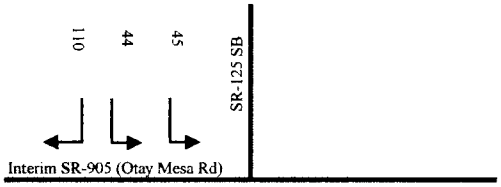
LANE GEOMETRY



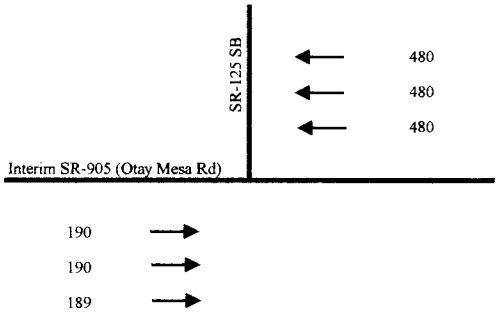
TRAFFIC VOLUMES



PHASE 1



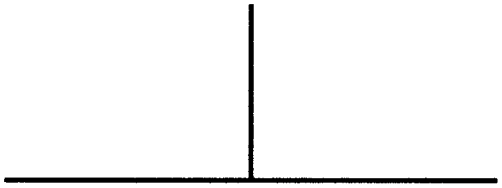
PHASE 2



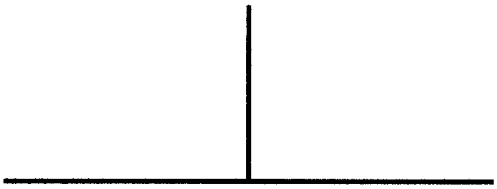
Phase 1 Critical ILV: 110

Phase 2 Critical ILV: 480

PHASE 3



PHASE 4



Phase 3 Critical ILV:

Phase 4 Critical ILV:

GRAND TOTAL ILV: **590**

OPERATING CONDITION **STABLE**

LEGEND

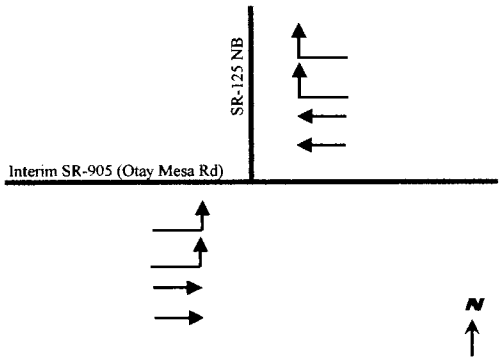
<1200 ILV = STABLE FLOW

1200 - 1500 ILV/HR = UNSTABLE FLOW

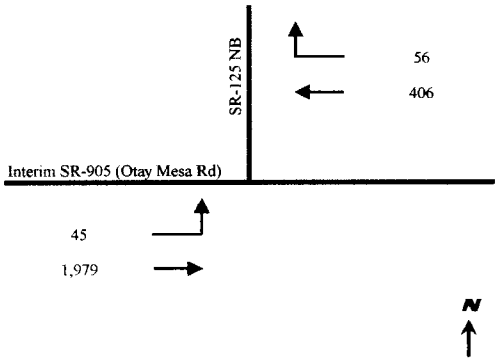
> 1500 ILV/HR = OVER CAPACITY

Date of Analysis:	March 19, 2011	Intersection:	Otay Mesa Rd @ SR-125 NB
Analyst:	USH	Peak Hour Analyzed:	AM Peak Hour
Condition Analyzed:	Existing + Phases 1-2		

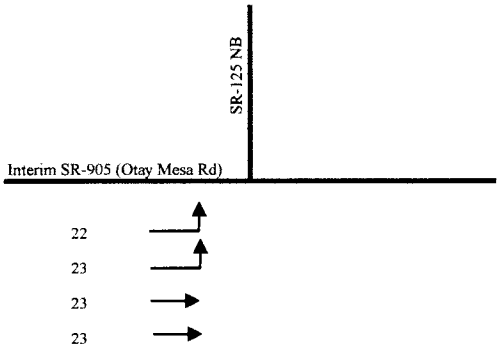
LANE GEOMETRY



TRAFFIC VOLUMES

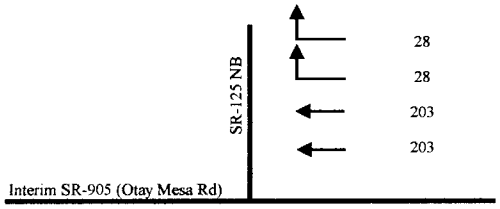


PHASE 1



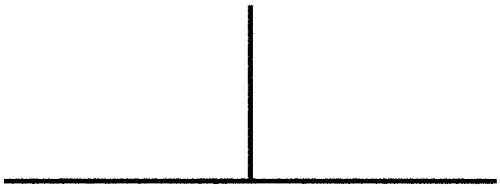
Phase 1 Critical ILV: 23

PHASE 2

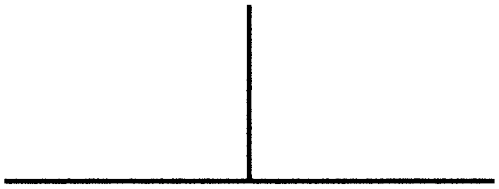


Phase 2 Critical ILV: 967

PHASE 3



PHASE 4



Phase 3 Critical ILV:

Phase 4 Critical ILV:

GRAND TOTAL ILV: 990

OPERATING CONDITION STABLE

LEGEND

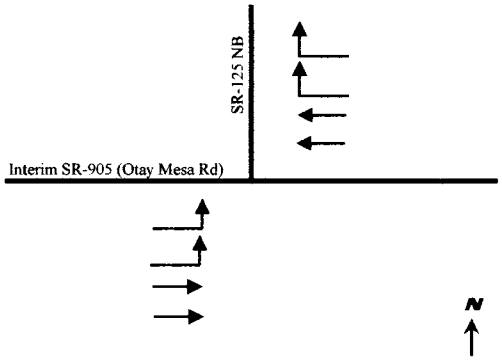
<1200 ILV = STABLE FLOW

1200 - 1500 ILV/HR = UNSTABLE FLOW

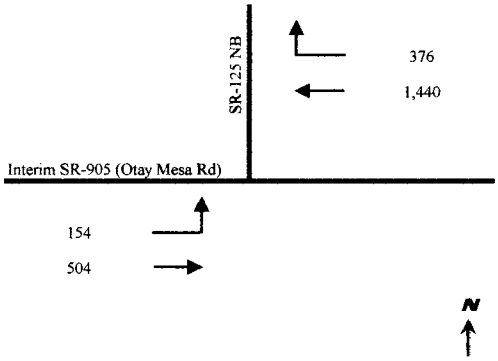
> 1500 ILV/HR = OVER CAPACITY

Date of Analysis:	March 19, 2011	Intersection:	Otay Mesa Rd @ SR-125 NB
Analyst:	USH	Peak Hour Analyzed:	PM Peak Hour
Condition Analyzed:	Existing + Phases 1-2		

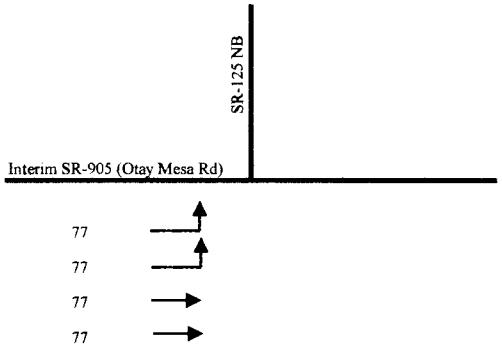
LANE GEOMETRY



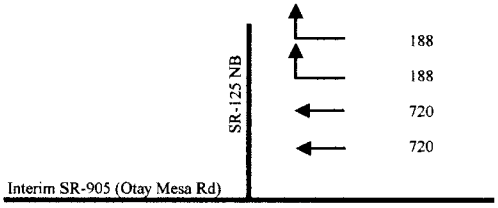
TRAFFIC VOLUMES



PHASE 1



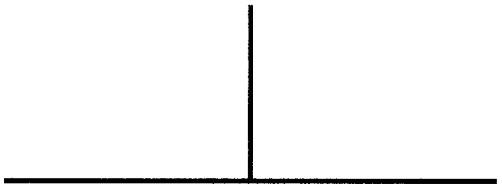
PHASE 2



Phase 1 Critical ILV: 77

Phase 2 Critical ILV: 720

PHASE 3



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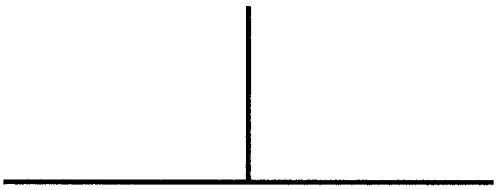


Phase 3 Critical ILV:

Phase 4 Critical ILV:

GRAND TOTAL ILV: 797

OPERATING CONDITION STABLE

LEGEND

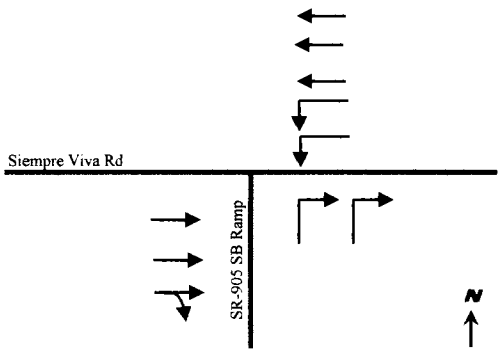
<1200 ILV = STABLE FLOW

1200 - 1500 ILV/HR = UNSTABLE FLOW

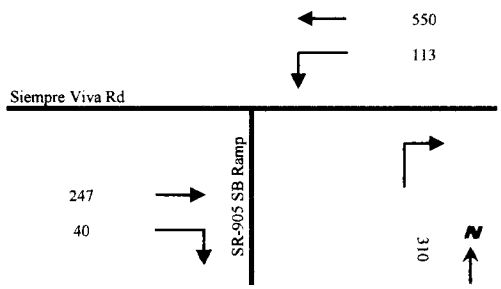
> 1500 ILV/HR = OVER CAPACITY

Date of Analysis:	March 19, 2011	Intersection:	Siempre Viva Rd @ SR-905 SB Ramp
Analyst:	VSH	Peak Hour Analyzed:	AM Peak Hour
Condition Analyzed:	Existing + Phases 1-2		

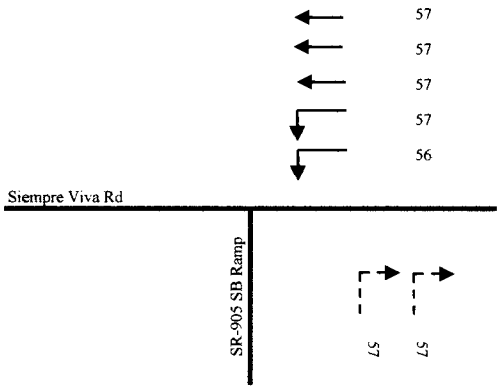
LANE GEOMETRY



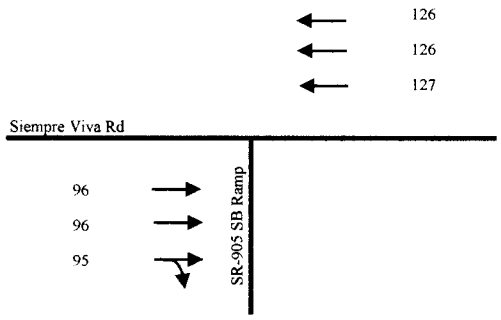
TRAFFIC VOLUMES



PHASE 1



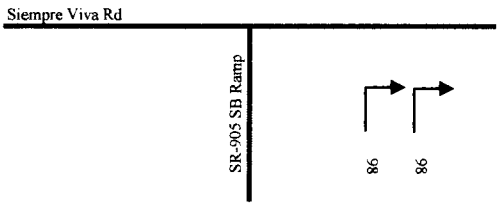
PHASE 2



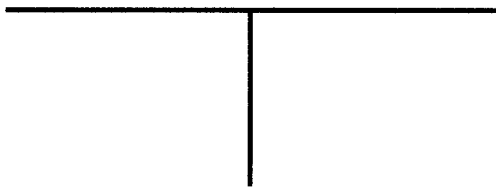
Phase 1 Critical ILV: 57

Phase 2 Critical ILV: 127

PHASE 3



PHASE 4



Phase 3 Critical ILV: 98

Phase 4 Critical ILV: -

GRAND TOTAL ILV: **282**

OPERATING CONDITION **STABLE**

LEGEND

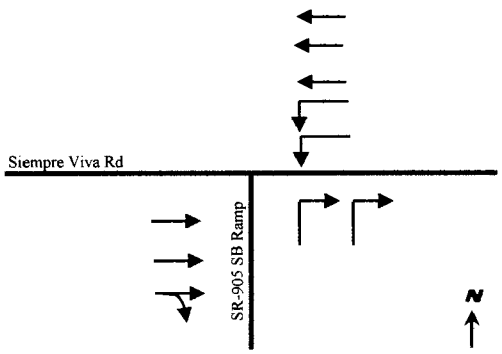
<1200 ILV = STABLE FLOW

1200 - 1500 ILV/HR = UNSTABLE FLOW

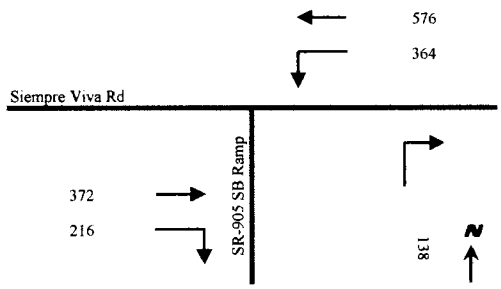
> 1500 ILV/HR = OVER CAPACITY

Date of Analysis:	March 19, 2011	Intersection:	Siempre Viva Rd @ SR-905 SB Ramp
Analyst:	VSH	Peak Hour Analyzed:	PM Peak Hour
Condition Analyzed:	Existing + Phases 1-2		

LANE GEOMETRY

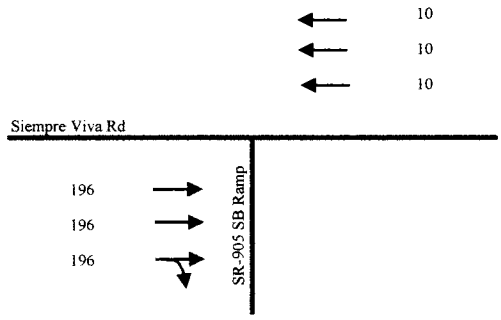


TRAFFIC VOLUMES



PHASE 1

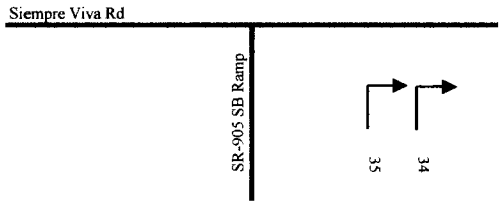
PHASE 2



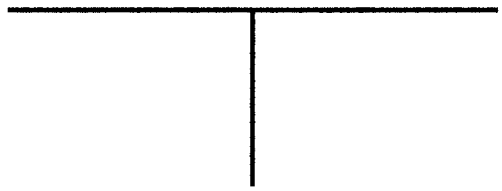
Phase 1 Critical ILV: 182

Phase 2 Critical ILV: 196

PHASE 3



PHASE 4



Phase 3 Critical ILV: 35

Phase 4 Critical ILV:

GRAND TOTAL ILV: 413

OPERATING CONDITION STABLE

LEGEND

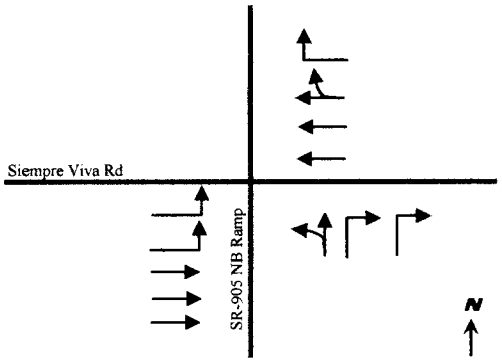
<1200 ILV = STABLE FLOW

1200 - 1500 ILV/HR = UNSTABLE FLOW

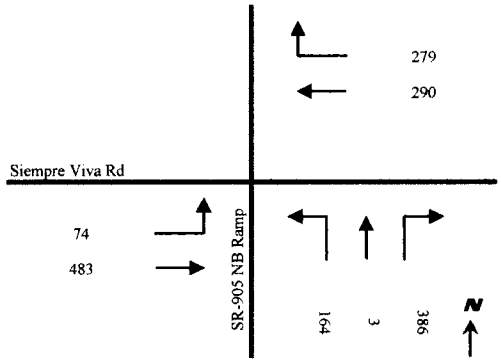
> 1500 ILV/HR = OVER CAPACITY

Date of Analysis:	March 19, 2011	Intersection:	Siempre Viva Rd & SR-905 NB
Analyst:	VJH	Peak Hour Analyzed:	AM Peak Hour
Condition Analyzed:	Existing + Phases 1-2		

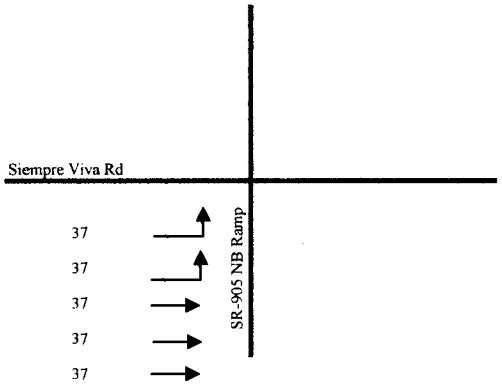
LANE GEOMETRY



TRAFFIC VOLUMES

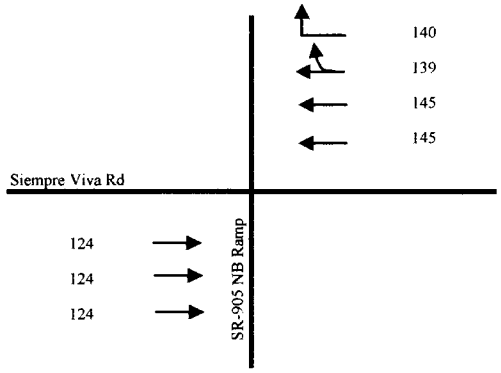


PHASE 1



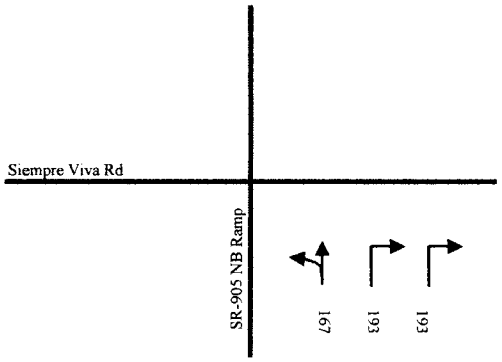
Phase 1 Critical ILV: 37

PHASE 2



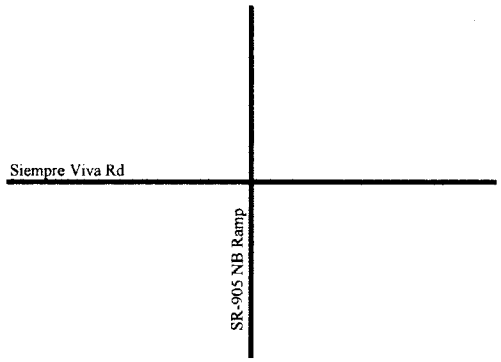
Phase 2 Critical ILV: 145

PHASE 3



Phase 3 Critical ILV: 193

PHASE 4



Phase 4 Critical ILV:

GRAND TOTAL ILV: **375**

OPERATING CONDITION **STABLE**

LEGEND

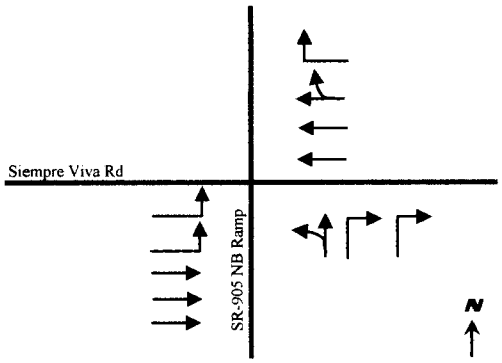
<1200 ILV = STABLE FLOW

1200 - 1500 ILV/HR = UNSTABLE FLOW

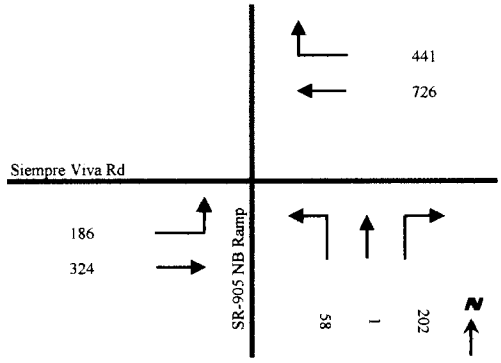
> 1500 ILV/HR = OVER CAPACITY

Date of Analysis:	March 19, 2011	Intersection:	Siempre Viva Rd & SR-905 NB
Analyst:	VSM	Peak Hour Analyzed:	PM Peak Hour
Condition Analyzed:	Existing + Phases 1-2		

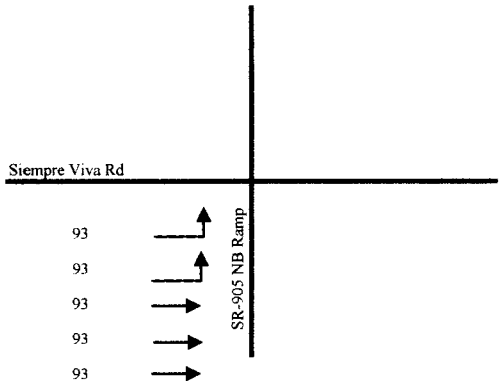
LANE GEOMETRY



TRAFFIC VOLUMES

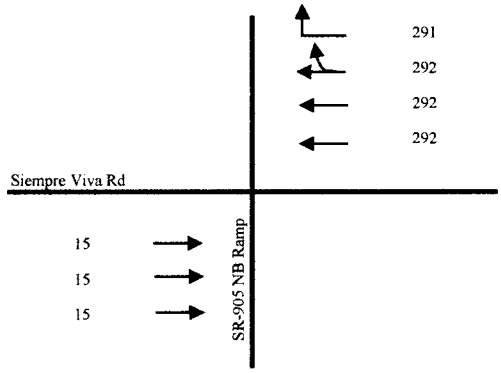


PHASE 1



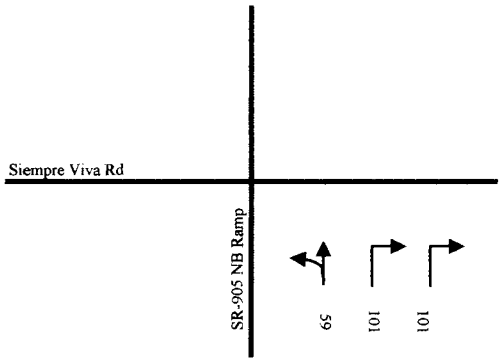
Phase 1 Critical ILV: 93

PHASE 2



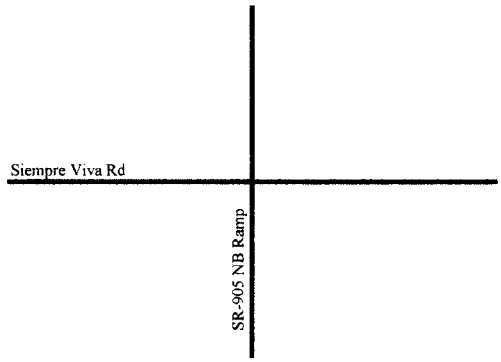
Phase 2 Critical ILV: 292

PHASE 3



Phase 3 Critical ILV: 101

PHASE 4



Phase 4 Critical ILV:

GRAND TOTAL ILV: **486**

OPERATING CONDITION **STABLE**

LEGEND

<1200 ILV = STABLE FLOW

1200 - 1500 ILV/HR = UNSTABLE FLOW

> 1500 ILV/HR = OVER CAPACITY

Existing + Project Phases 1-2 – Queuing Summaries

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	129	3390	228	38	1470	126	77	110	285	62	63
v/c Ratio	0.57	1.01	0.17	0.37	0.47	0.10	0.41	0.94	1.21	0.47	0.25
Control Delay	79.2	40.9	0.6	71.7	9.4	0.9	71.6	108.8	181.4	79.2	16.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.2	40.9	0.6	71.7	9.4	0.9	71.6	108.8	181.4	79.2	16.6
Queue Length 50th (ft)	64	~1308	0	18	191	7	73	64	~344	60	0
Queue Length 95th (ft)	92	976	10	m34	274	13	120	#161	#466	100	21
Internal Link Dist (ft)		1361			2600			2637		1263	
Turn Bay Length (ft)	550		510	550		550	200		440		440
Base Capacity (vph)	235	3359	1356	102	3132	1308	189	117	235	169	310
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.55	1.01	0.17	0.37	0.47	0.10	0.41	0.94	1.21	0.37	0.20

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	135	1516	94	35	3010	377	228	135	251	48	263
v/c Ratio	0.61	0.53	0.10	0.15	1.06	0.29	0.67	0.71	0.94	0.43	0.68
Control Delay	86.3	22.2	3.3	60.7	60.1	1.9	73.4	84.5	110.7	87.2	44.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	86.3	22.2	3.3	60.7	60.1	1.9	73.4	84.5	110.7	87.2	44.6
Queue Length 50th (ft)	76	371	0	18	~1321	31	235	130	277	52	93
Queue Length 95th (ft)	#176	446	29	m15	m#940	m54	332	203	#455	99	136
Internal Link Dist (ft)		1361			2600			2637		1263	
Turn Bay Length (ft)	550		510	550		550	200		440		440
Base Capacity (vph)	220	2864	982	266	2830	1301	339	246	271	258	388
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.53	0.10	0.13	1.06	0.29	0.67	0.55	0.93	0.19	0.68

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBR	SBL	SBR
Lane Group Flow (vph)	5	3867	70	1601	94	85	1	1
v/c Ratio	0.06	1.08	0.59	0.41	0.59	0.27	0.01	0.00
Control Delay	59.5	44.8	77.5	3.4	80.6	2.1	64.0	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.5	44.8	77.5	3.4	80.6	2.1	64.0	0.0
Queue Length 50th (ft)	4	~1535	71	23	91	0	1	0
Queue Length 95th (ft)	m5	m#1447	m84	272	133	0	6	0
Internal Link Dist (ft)		2600		2650				
Turn Bay Length (ft)	550		550		250	120	25	25
Base Capacity (vph)	86	3594	128	3950	239	397	202	299
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	1.08	0.55	0.41	0.39	0.21	0.00	0.00

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	2	1858	86	3264	200	1	138	4	1	4
v/c Ratio	0.02	0.68	0.53	1.02	0.60	0.00	0.34	0.03	0.01	0.03
Control Delay	31.5	16.2	39.2	29.9	37.8	24.0	7.2	36.5	36.0	24.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.5	16.2	39.2	29.9	37.8	24.0	7.2	36.5	36.0	24.5
Queue Length 50th (ft)	1	203	46	207	97	0	0	2	1	0
Queue Length 95th (ft)	m2	#494	m52	m#1002	150	4	42	12	6	10
Internal Link Dist (ft)		2600		2650		2628			1880	
Turn Bay Length (ft)	550		550		250		120	25		25
Base Capacity (vph)	105	2749	169	3207	351	470	502	190	366	314
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.68	0.51	1.02	0.57	0.00	0.27	0.02	0.00	0.01

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	2540	1210	41	689	952	61
v/c Ratio	0.99	0.82	0.35	0.24	0.96	0.12
Control Delay	27.5	9.0	39.2	2.7	48.3	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.5	9.0	39.2	2.7	48.3	6.7
Queue Length 50th (ft)	~808	533	21	26	226	0
Queue Length 95th (ft)	m#485	m611	48	15	#294	21
Internal Link Dist (ft)	2650			5401	660	
Turn Bay Length (ft)		540	550			
Base Capacity (vph)	2566	1471	116	2907	994	502
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.99	0.82	0.35	0.24	0.96	0.12

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	800	1005	18	2035	1287	62
v/c Ratio	0.43	0.66	0.19	0.98	0.79	0.08
Control Delay	10.1	10.4	21.6	25.8	22.6	3.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.1	10.4	21.6	25.8	22.6	3.2
Queue Length 50th (ft)	105	615	8	~428	256	0
Queue Length 95th (ft)	48	317	m9	#503	334	18
Internal Link Dist (ft)	2650			5401	660	
Turn Bay Length (ft)		540	550			
Base Capacity (vph)	1880	1531	95	2074	1766	844
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.66	0.19	0.98	0.73	0.07

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	94	1746	318	192	546	86	132	13	83
v/c Ratio	0.45	0.95	0.33	0.62	0.25	0.38	0.26	0.07	0.39
Control Delay	16.6	17.6	2.0	27.2	5.3	34.6	10.5	35.2	24.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.6	17.6	2.0	27.2	5.3	34.6	10.5	35.2	24.8
Queue Length 50th (ft)	33	113	8	42	11	38	17	3	21
Queue Length 95th (ft)	m35	m#546	m30	151	103	72	54	11	55
Internal Link Dist (ft)		5401			908		520		2547
Turn Bay Length (ft)	550		500	550				150	
Base Capacity (vph)	224	1830	966	336	2226	233	526	181	394
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.95	0.33	0.57	0.25	0.37	0.25	0.07	0.21

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	64	548	298	131	1535	308	173	42	195
v/c Ratio	0.43	0.37	0.29	0.56	0.84	0.78	0.26	0.24	0.66
Control Delay	42.4	9.9	0.7	26.4	22.4	44.1	6.9	42.1	33.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.4	9.9	0.7	26.4	22.4	44.1	6.9	42.1	33.9
Queue Length 50th (ft)	45	57	1	66	202	151	18	11	67
Queue Length 95th (ft)	65	111	1	m81	#447	233	54	27	129
Internal Link Dist (ft)		5401			908		520		2547
Turn Bay Length (ft)	550		500	550				150	
Base Capacity (vph)	154	1479	1038	253	1823	470	744	175	376
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.37	0.29	0.52	0.84	0.66	0.23	0.24	0.52

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	207	1661	715	147	66
v/c Ratio	0.42	0.59	0.31	0.37	0.32
Control Delay	6.9	7.0	11.6	22.7	13.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	6.9	7.0	11.6	22.7	13.0
Queue Length 50th (ft)	42	76	88	21	0
Queue Length 95th (ft)	m9	181	52	43	34
Internal Link Dist (ft)		1591	1489	1149	
Turn Bay Length (ft)	600				125
Base Capacity (vph)	498	2798	2298	976	455
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.42	0.59	0.31	0.15	0.15

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	169	876	2030	322	202
v/c Ratio	0.41	0.31	0.79	0.59	0.59
Control Delay	36.7	2.6	13.8	17.5	12.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	36.7	2.6	13.8	17.5	12.5
Queue Length 50th (ft)	100	17	175	30	0
Queue Length 95th (ft)	124	29	221	64	62
Internal Link Dist (ft)		1591	1489	1149	
Turn Bay Length (ft)	600				125
Base Capacity (vph)	411	2795	2572	937	504
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.41	0.31	0.79	0.34	0.40

Intersection Summary

Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	1811	483	599	267
v/c Ratio	0.55	0.15	0.70	0.45
Control Delay	4.7	11.5	29.9	5.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	4.7	11.5	29.9	5.7
Queue Length 50th (ft)	14	45	131	2
Queue Length 95th (ft)	139	72	149	40
Internal Link Dist (ft)	1489	570	1201	
Turn Bay Length (ft)				
Base Capacity (vph)	3276	3276	1563	863
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.55	0.15	0.38	0.31

Intersection Summary

Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	639	1618	100	124
v/c Ratio	0.16	0.39	0.22	0.58
Control Delay	1.4	3.2	32.6	42.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	1.4	3.2	32.6	42.3
Queue Length 50th (ft)	14	90	24	58
Queue Length 95th (ft)	22	122	43	105
Internal Link Dist (ft)	1489	570	1201	
Turn Bay Length (ft)				
Base Capacity (vph)	4112	4112	1533	711
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.16	0.39	0.07	0.17

Intersection Summary

Lane Group	EBL	EBT	WBT	WBR
Lane Group Flow (vph)	56	2443	501	69
v/c Ratio	0.18	0.69	0.16	0.03
Control Delay	33.6	3.3	0.4	0.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	33.6	3.3	0.4	0.0
Queue Length 50th (ft)	12	11	4	0
Queue Length 95th (ft)	m21	74	5	0
Internal Link Dist (ft)		570	460	
Turn Bay Length (ft)	430			400
Base Capacity (vph)	926	3539	3104	2453
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.06	0.69	0.16	0.03

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	WBR
Lane Group Flow (vph)	171	560	1600	419
v/c Ratio	0.45	0.16	0.57	0.18
Control Delay	27.8	0.1	4.0	0.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	27.8	0.1	4.0	0.4
Queue Length 50th (ft)	41	0	131	1
Queue Length 95th (ft)	52	0	m146	m0
Internal Link Dist (ft)		570	460	
Turn Bay Length (ft)	430			400
Base Capacity (vph)	1206	3539	2808	2298
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.14	0.16	0.57	0.18

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBL	WBT	NBL
Lane Group Flow (vph)	2442	5	458	113
v/c Ratio	0.89	0.03	0.30	0.30
Control Delay	13.8	18.8	10.8	31.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	13.8	18.8	10.8	31.8
Queue Length 50th (ft)	192	2	179	24
Queue Length 95th (ft)	#703	m4	m235	41
Internal Link Dist (ft)	1003		1623	2621
Turn Bay Length (ft)		180		
Base Capacity (vph)	2730	221	1535	491
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.89	0.02	0.30	0.23

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBL	WBT	NBL
Lane Group Flow (vph)	552	15	1595	403
v/c Ratio	0.24	0.05	1.12	0.82
Control Delay	5.6	18.6	71.4	50.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	5.6	18.6	71.4	50.2
Queue Length 50th (ft)	35	6	~1019	107
Queue Length 95th (ft)	91	m4	m121	#178
Internal Link Dist (ft)	1003		1623	2621
Turn Bay Length (ft)		180		
Base Capacity (vph)	2531	273	1420	492
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.22	0.05	1.12	0.82

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1686	111	141	404	47
v/c Ratio	1.70	0.65	0.12	0.91	0.11
Control Delay	337.1	52.3	5.7	50.2	7.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	337.1	52.3	5.7	50.2	7.5
Queue Length 50th (ft)	~1179	51	23	199	0
Queue Length 95th (ft)	#1093	81	34	#234	m22
Internal Link Dist (ft)	1250		2512	2644	
Turn Bay Length (ft)		90		175	
Base Capacity (vph)	993	175	1199	454	441
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.70	0.63	0.12	0.89	0.11

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	368	35	490	1071	97
v/c Ratio	0.40	0.16	0.44	1.99	0.19
Control Delay	5.4	32.7	10.6	475.7	11.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	5.4	32.7	10.6	475.7	11.8
Queue Length 50th (ft)	42	16	127	~923	20
Queue Length 95th (ft)	7	34	142	#871	m35
Internal Link Dist (ft)	1250		2512	2644	
Turn Bay Length (ft)		90		175	
Base Capacity (vph)	911	284	1120	537	523
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.40	0.12	0.44	1.99	0.19

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	9	95	42	8	16	195	88	268	889	446
v/c Ratio	0.06	0.42	0.19	0.05	0.07	0.53	0.39	0.34	1.08	0.22
Control Delay	32.6	35.7	11.5	32.7	28.2	10.4	43.0	26.8	63.7	11.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.6	35.7	11.5	32.7	28.2	10.4	43.0	26.8	63.7	11.8
Queue Length 50th (ft)	4	44	0	4	7	0	42	53	~478	48
Queue Length 95th (ft)	14	69	18	13	18	27	67	66	m#404	m70
Internal Link Dist (ft)		1210			1186			501		2644
Turn Bay Length (ft)	175			200			200		200	
Base Capacity (vph)	175	454	417	175	478	551	283	1181	822	2069
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.21	0.10	0.05	0.03	0.35	0.31	0.23	1.08	0.22

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	9	23	12	7	54	691	113	544	206	154
v/c Ratio	0.07	0.05	0.03	0.05	0.12	0.88	0.33	0.40	0.58	0.10
Control Delay	36.7	20.2	10.0	36.7	21.7	19.8	24.5	17.4	42.4	27.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.7	20.2	10.0	36.7	21.7	19.8	24.5	17.4	42.4	27.2
Queue Length 50th (ft)	5	9	0	4	22	70	49	88	105	30
Queue Length 95th (ft)	17	23	10	15	40	141	63	130	#226	67
Internal Link Dist (ft)		1210			1186			501		2644
Turn Bay Length (ft)	175			200			200		200	
Base Capacity (vph)	200	520	450	200	546	842	375	1448	357	1572
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.04	0.03	0.04	0.10	0.82	0.30	0.38	0.58	0.10

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	20	152	66	289	14	8	66
v/c Ratio	0.12	0.06	0.40	0.10	0.09	0.05	0.33
Control Delay	33.0	8.7	39.2	7.5	32.8	20.9	24.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.0	8.7	39.2	7.5	32.8	20.9	24.8
Queue Length 50th (ft)	9	10	31	18	6	0	17
Queue Length 95th (ft)	28	22	69	35	22	13	51
Internal Link Dist (ft)		3989		1156		1019	1012
Turn Bay Length (ft)	270		200		300		
Base Capacity (vph)	160	2648	172	2941	408	378	417
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.06	0.38	0.10	0.03	0.02	0.16

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	48	267	136	347	29	21	108
v/c Ratio	0.28	0.12	0.50	0.13	0.19	0.13	0.48
Control Delay	38.6	14.0	44.0	2.6	37.8	18.7	37.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.6	14.0	44.0	2.6	37.8	18.7	37.2
Queue Length 50th (ft)	24	24	66	12	15	1	48
Queue Length 95th (ft)	55	52	119	23	39	22	93
Internal Link Dist (ft)		3989		1156		1019	1012
Turn Bay Length (ft)	270		200		300		
Base Capacity (vph)	208	2251	284	2742	411	388	421
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.12	0.48	0.13	0.07	0.05	0.26

Intersection Summary

Lane Group	EBT	WBL	WBT	NBR
Lane Group Flow (vph)	311	123	598	337
v/c Ratio	0.10	0.22	0.14	0.27
Control Delay	4.1	28.0	1.9	0.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	4.1	28.0	1.9	0.5
Queue Length 50th (ft)	14	24	11	0
Queue Length 95th (ft)	22	m54	44	0
Internal Link Dist (ft)	1279		201	
Turn Bay Length (ft)		200		
Base Capacity (vph)	3129	637	4148	1674
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.10	0.19	0.14	0.20

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBL	WBT	NBR
Lane Group Flow (vph)	600	371	588	141
v/c Ratio	0.19	0.70	0.13	0.12
Control Delay	2.3	38.7	1.5	0.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	2.3	38.7	1.5	0.2
Queue Length 50th (ft)	11	91	20	0
Queue Length 95th (ft)	25	125	21	0
Internal Link Dist (ft)	1279		201	
Turn Bay Length (ft)		200		
Base Capacity (vph)	3208	813	4407	1597
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.19	0.46	0.13	0.09

Intersection Summary

Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	77	503	447	146	174	402
v/c Ratio	0.23	0.14	0.16	0.17	0.57	0.49
Control Delay	35.0	2.5	3.7	2.5	35.3	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.0	2.5	3.7	2.5	35.3	5.1
Queue Length 50th (ft)	16	12	3	0	77	0
Queue Length 95th (ft)	31	23	45	m0	123	35
Internal Link Dist (ft)		653	439		1142	
Turn Bay Length (ft)	250			200		200
Base Capacity (vph)	637	3671	2797	874	596	1202
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.14	0.16	0.17	0.29	0.33

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	198	345	865	376	63	215
v/c Ratio	0.46	0.08	0.29	0.38	0.35	0.45
Control Delay	37.2	1.0	2.9	1.1	39.7	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.2	1.0	2.9	1.1	39.7	8.4
Queue Length 50th (ft)	53	4	18	0	32	0
Queue Length 95th (ft)	87	8	50	0	66	33
Internal Link Dist (ft)		653	439		1142	
Turn Bay Length (ft)	250			200		200
Base Capacity (vph)	756	4080	2989	997	539	996
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.08	0.29	0.38	0.12	0.22

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	406	348	121	12	219	94	33	18	57	283
v/c Ratio	0.78	0.11	0.12	0.11	0.21	0.59	0.05	0.06	0.44	0.54
Control Delay	33.8	6.1	1.6	35.7	23.0	49.5	25.8	12.5	45.0	26.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.8	6.1	1.6	35.7	23.0	49.5	25.8	12.5	45.0	26.3
Queue Length 50th (ft)	155	14	0	5	46	43	7	0	26	50
Queue Length 95th (ft)	#308	40	16	19	72	#103	18	16	61	82
Internal Link Dist (ft)		493			1124		842			1095
Turn Bay Length (ft)	250		120	325		475			250	
Base Capacity (vph)	539	3156	1028	105	1040	163	853	396	130	789
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.75	0.11	0.12	0.11	0.21	0.58	0.04	0.05	0.44	0.36

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	365	117	98	31	548	271	137	8	5	182
v/c Ratio	0.87	0.05	0.12	0.26	0.62	0.67	0.11	0.01	0.05	0.46
Control Delay	52.3	14.4	3.8	45.3	41.9	38.2	18.4	10.8	36.8	18.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.3	14.4	3.8	45.3	41.9	38.2	18.4	10.8	36.8	18.8
Queue Length 50th (ft)	186	13	0	17	154	127	23	0	2	20
Queue Length 95th (ft)	#339	24	28	m37	#223	208	47	9	m13	52
Internal Link Dist (ft)		493			1124		842			1095
Turn Bay Length (ft)	250		120	325		475			250	
Base Capacity (vph)	421	2373	791	121	878	408	1261	569	105	718
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.87	0.05	0.12	0.26	0.62	0.66	0.11	0.01	0.05	0.25

Intersection Summary

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	55	300	17	227	107	200	301	41
v/c Ratio	0.17	0.35	0.16	0.17	0.23	0.45	0.67	0.09
Control Delay	47.3	12.7	41.3	12.5	21.0	20.1	42.5	33.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.3	12.7	41.3	12.5	21.0	20.1	42.5	33.9
Queue Length 50th (ft)	14	64	7	17	39	24	110	7
Queue Length 95th (ft)	30	90	m21	m40	65	47	210	22
Internal Link Dist (ft)		1204		311		851		533
Turn Bay Length (ft)	180		180		250		200	
Base Capacity (vph)	327	848	105	1330	484	788	512	1251
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.35	0.16	0.17	0.22	0.25	0.59	0.03

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	32	67	41	775	204	152	71	66
v/c Ratio	0.12	0.07	0.24	0.42	0.65	0.24	0.36	0.21
Control Delay	42.0	16.8	35.5	9.1	41.5	27.0	24.6	27.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.0	16.8	35.5	9.1	41.5	27.0	24.6	27.4
Queue Length 50th (ft)	8	25	21	84	101	32	39	13
Queue Length 95th (ft)	23	63	m45	150	159	57	83	35
Internal Link Dist (ft)		1204		311		851		533
Turn Bay Length (ft)	180		180		250		200	
Base Capacity (vph)	266	929	178	1858	417	1005	301	739
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.07	0.23	0.42	0.49	0.15	0.24	0.09

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	WBR	NBT	SBT
Lane Group Flow (vph)	16	2	534	130
v/c Ratio	0.15	0.02	0.30	0.07
Control Delay	18.6	12.5	1.1	0.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	18.6	12.5	1.1	0.7
Queue Length 50th (ft)	12	0	0	0
Queue Length 95th (ft)	25	6	78	18
Internal Link Dist (ft)	670		520	1210
Turn Bay Length (ft)				
Base Capacity (vph)	268	242	1782	1788
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.06	0.01	0.30	0.07

Intersection Summary

Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	12	1	122	2	375
v/c Ratio	0.09	0.01	0.07	0.02	0.21
Control Delay	37.1	28.0	1.6	36.5	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	37.1	28.0	1.6	36.5	0.8
Queue Length 50th (ft)	6	0	0	1	0
Queue Length 95th (ft)	22	5	32	8	49
Internal Link Dist (ft)	670		520		1210
Turn Bay Length (ft)				150	
Base Capacity (vph)	579	519	1707	327	1794
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.02	0.00	0.07	0.01	0.21

Intersection Summary

APPENDIX G

- Cumulative + Project - Arterial Analysis
- Cumulative + Project - Intersection Synchro Analysis
- Cumulative + Project - Intersection ILV Analysis
- Cumulative + Project – Queuing Summaries

Cumulative + Project - Arterial Analysis

Arterial Level of Service: EB Otay Mesa Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Heritage Road	II	45	28.4	21.3	49.7	0.27	19.8	D
Cactus Rd	II	45	44.7	3.8	48.5	0.51	37.7	A
Brittania Blvd	II	45	45.5	19.0	64.5	0.52	28.9	B
La Media	II	45	83.0	10.5	93.5	1.04	40.0	A
Piper Ranch Rd	II	45	44.4	6.8	51.2	0.50	35.4	A
SR125 SB	II	45	29.4	3.9	33.3	0.30	32.1	B
SR125 NB Ramp	II	45	13.4	0.5	13.9	0.12	31.9	B
Harvest Rd	II	45	17.5	4.9	22.4	0.16	25.9	C
Sanyo Ave	II	45	22.4	45.7	68.1	0.21	10.8	F
Enrico Fermi Dr	II	45	62.8	79.5	142.3	0.78	19.8	D
Total	II		391.5	195.9	587.4	4.41	27.0	C

Arterial Level of Service: WB Otay Mesa Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Enrico Fermi Dr	II	45	43.2	11.2	54.4	0.49	32.5	B
Sunroad Blvd	II	45	62.8	15.6	78.4	0.78	36.0	A
Harvest Rd	II	45	22.4	4.1	26.5	0.21	27.9	C
SR125 NB Ramp	II	45	17.5	0.6	18.1	0.16	32.0	B
SR125 SB	II	45	13.4	5.1	18.5	0.12	24.0	C
Piper Ranch Rd	II	45	29.4	14.2	43.6	0.30	24.5	C
La Media	II	45	44.4	7.6	52.0	0.50	34.9	B
Brittania Blvd	II	45	83.0	8.5	91.5	1.04	40.8	A
Cactus Rd	II	45	45.5	2.3	47.8	0.52	38.9	A
Heritage Road	II	45	44.7	26.1	70.8	0.51	25.8	C
Total	II		406.3	95.3	501.6	4.63	33.2	B

Arterial Level of Service: EB Otay Mesa Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Heritage Road	II	45	28.4	19.2	47.6	0.27	20.6	D
Cactus Rd	II	45	44.7	11.2	55.9	0.51	32.7	B
Brittania Blvd	II	45	45.5	11.5	57.0	0.52	32.7	B
La Media	II	45	83.0	27.0	110.0	1.04	34.0	B
Piper Ranch Rd	II	45	44.4	4.3	48.7	0.50	37.3	A
SR125 SB	II	45	29.4	1.3	30.7	0.30	34.8	B
SR125 NB Ramp	II	45	13.4	0.3	13.7	0.12	32.3	B
Harvest Rd	II	45	17.5	4.1	21.6	0.16	26.8	C
Sanyo Ave	II	45	22.4	31.6	54.0	0.21	13.7	E
Enrico Fermi Dr	II	45	62.8	46.0	108.8	0.78	25.9	C
Total	II		391.5	156.5	548.0	4.41	29.0	B

Arterial Level of Service: WB Otay Mesa Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Enrico Fermi Dr	II	45	43.2	15.9	59.1	0.49	29.9	B
Sunroad Blvd	II	45	62.8	54.8	117.6	0.78	24.0	C
Harvest Rd	II	45	22.4	28.0	50.4	0.21	14.7	E
SR125 NB Ramp	II	45	17.5	2.8	20.3	0.16	28.5	B
SR125 SB	II	45	13.4	0.8	14.2	0.12	31.2	B
Piper Ranch Rd	II	45	29.4	21.3	50.7	0.30	21.1	D
La Media	II	45	44.4	22.7	67.1	0.50	27.0	C
Brittania Blvd	II	45	83.0	11.6	94.6	1.04	39.5	A
Cactus Rd	II	45	45.5	14.7	60.2	0.52	30.9	B
Heritage Road	II	45	44.7	21.8	66.5	0.51	27.5	C
Total	II		406.3	194.4	600.7	4.63	27.7	C

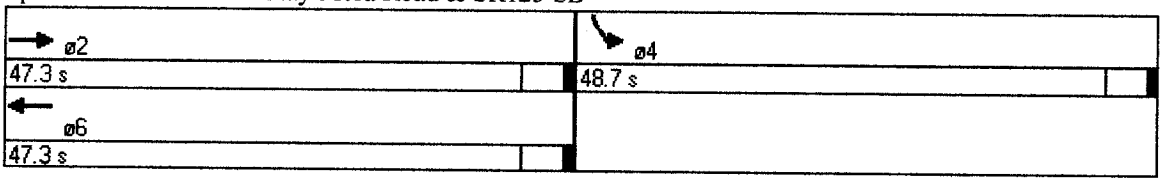
Cumulative + Project- Intersection Synchro Analysis

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑		↰↰	↱
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.91	1.00	0.97	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	5085	5085	0	3433	1583
Flt Permitted					0.950	
Satd. Flow (perm)	0	5085	5085	0	3433	1583
Satd. Flow (RTOR)						318
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	0	830	360	0	560	270
Adj. Flow (vph)	0	988	429	0	667	321
Lane Group Flow (vph)	0	988	429	0	667	321
Turn Type						Perm
Protected Phases		2	6		4	
Permitted Phases						4
Total Split (s)	0.0	47.3	47.3	0.0	48.7	48.7
Act Effct Green (s)		63.5	63.5		24.5	24.5
Actuated g/C Ratio		0.66	0.66		0.26	0.26
v/c Ratio		0.29	0.13		0.76	0.50
Control Delay		3.9	5.1		38.7	6.0
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		3.9	5.1		38.7	6.0
LOS		A	A		D	A
Approach Delay		3.9	5.1		28.1	
Approach LOS		A	A		C	

Intersection Summary

Cycle Length: 96
Actuated Cycle Length: 96
Offset: 17 (18%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.76
Intersection Signal Delay: 14.1 — Intersection LOS: B
Intersection Capacity Utilization 40.9% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 6: Otay Mesa Road & SR125 SB

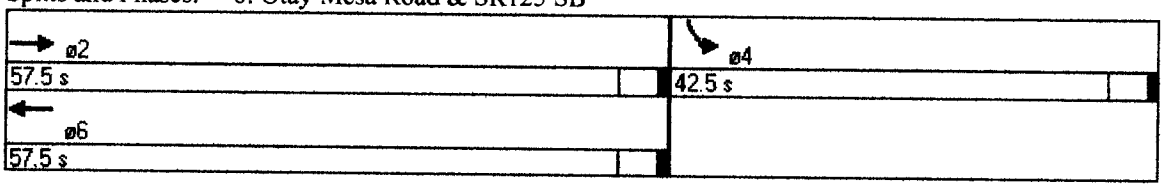


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.91	1.00	0.97	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	5085	5085	0	3433	1583
Flt Permitted					0.950	
Satd. Flow (perm)	0	5085	5085	0	3433	1583
Satd. Flow (RTOR)						42
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	0	1030	1150	0	160	80
Adj. Flow (vph)	0	1157	1292	0	180	90
Lane Group Flow (vph)	0	1157	1292	0	180	90
Turn Type						Perm
Protected Phases		2	6		4	
Permitted Phases						4
Total Split (s)	0.0	57.5	57.5	0.0	42.5	42.5
Act Effct Green (s)		81.7	81.7		10.3	10.3
Actuated g/C Ratio		0.82	0.82		0.10	0.10
v/c Ratio		0.28	0.31		0.51	0.45
Control Delay		1.3	0.8		47.2	31.3
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		1.3	0.8		47.2	31.3
LOS		A	A		D	C
Approach Delay		1.3	0.8		41.9	
Approach LOS		A	A		D	

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 5 (5%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.51
Intersection Signal Delay: 5.1 — Intersection LOS: A
Intersection Capacity Utilization 43.0% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 6: Otay Mesa Road & SR125 SB

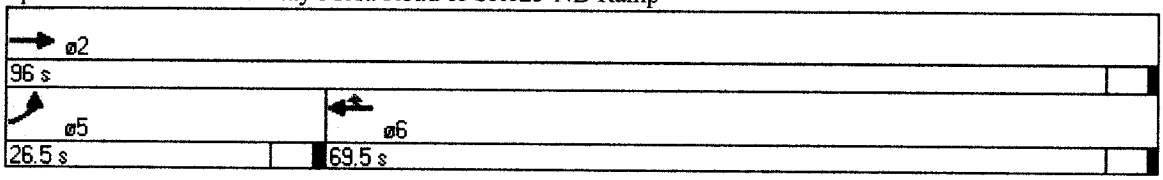


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	0.95	0.88	1.00	1.00
Frt				0.850		
Flt Protected	0.950					
Satd. Flow (prot)	3433	3539	3539	2787	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	3433	3539	3539	2787	0	0
Satd. Flow (RTOR)				432		
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	30	1360	360	350	0	0
Adj. Flow (vph)	37	1679	444	432	0	0
Lane Group Flow (vph)	37	1679	444	432	0	0
Turn Type	Prot			Perm		
Protected Phases	5	2	6			
Permitted Phases				6		
Total Split (s)	26.5	96.0	69.5	69.5	0.0	0.0
Act Effct Green (s)	6.8	96.0	89.8	89.8		
Actuated g/C Ratio	0.07	1.00	0.94	0.94		
v/c Ratio	0.15	0.47	0.13	0.16		
Control Delay	39.5	0.5	0.6	0.3		
Queue Delay	0.0	0.0	0.0	0.0		
Total Delay	39.5	0.5	0.6	0.3		
LOS	D	A	A	A		
Approach Delay		1.4	0.4			
Approach LOS		A	A			

Intersection Summary

Cycle Length: 96
Actuated Cycle Length: 96
Offset: 56 (58%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.47
Intersection Signal Delay: 1.1 — Intersection LOS: A
Intersection Capacity Utilization 40.9% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 7: Otay Mesa Road & SR125 NB Ramp

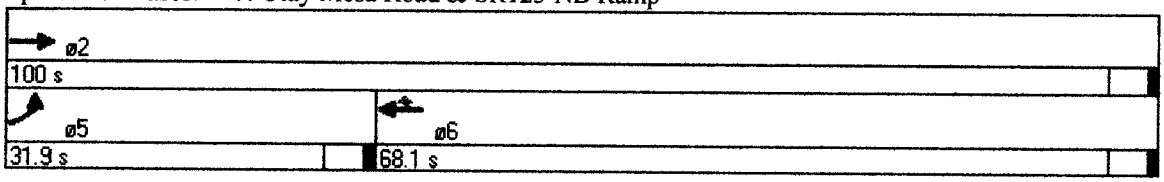


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	0.95	0.88	1.00	1.00
Frt				0.850		
Flt Protected	0.950					
Satd. Flow (prot)	3433	3539	3539	2787	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	3433	3539	3539	2787	0	0
Satd. Flow (RTOR)				678		
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	160	1030	1150	610	0	0
Adj. Flow (vph)	178	1144	1278	678	0	0
Lane Group Flow (vph)	178	1144	1278	678	0	0
Turn Type	Prot			Perm		
Protected Phases	5	2	6			
Permitted Phases				6		
Total Split (s)	31.9	100.0	68.1	68.1	0.0	0.0
Act Effct Green (s)	10.2	100.0	81.8	81.8		
Actuated g/C Ratio	0.10	1.00	0.82	0.82		
v/c Ratio	0.51	0.32	0.44	0.28		
Control Delay	41.9	0.3	2.8	0.6		
Queue Delay	0.0	0.0	0.0	0.0		
Total Delay	41.9	0.3	2.8	0.6		
LOS	D	A	A	A		
Approach Delay		5.9	2.1			
Approach LOS		A	A			

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 12 (12%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.51
Intersection Signal Delay: 3.6 — Intersection LOS: A
Intersection Capacity Utilization 43.0% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 7: Otay Mesa Road & SR125 NB Ramp

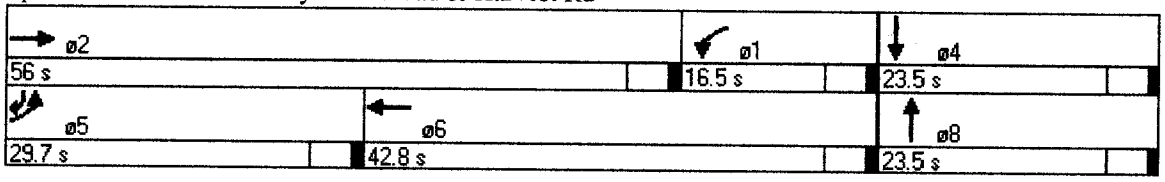


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.88
Frt		0.999			0.978			0.955				0.850
Flt Protected	0.950			0.950				0.984			0.960	
Satd. Flow (prot)	3433	3536	0	1770	3461	0	0	1750	0	0	1788	2787
Flt Permitted	0.950			0.950				0.921			0.763	
Satd. Flow (perm)	3433	3536	0	1770	3461	0	0	1638	0	0	1421	2787
Satd. Flow (RTOR)		2			25			12				260
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	330	1020	10	10	510	90	10	10	10	50	10	240
Adj. Flow (vph)	398	1229	12	12	614	108	12	12	12	60	12	289
Lane Group Flow (vph)	398	1241	0	12	722	0	0	36	0	0	72	289
Turn Type	Prot			Prot			Perm			Perm		pm+ov
Protected Phases	5	2		1	6			8			4	5
Permitted Phases							8			4		4
Total Split (s)	29.7	56.0	0.0	16.5	42.8	0.0	23.5	23.5	0.0	23.5	23.5	29.7
Act Effct Green (s)	16.3	74.4		7.6	57.4			10.3			10.3	30.6
Actuated g/C Ratio	0.17	0.78		0.08	0.60			0.11			0.11	0.32
v/c Ratio	0.68	0.45		0.09	0.35			0.19			0.47	0.27
Control Delay	44.9	4.9		28.7	4.1			30.1			43.9	5.1
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Delay	44.9	4.9		28.7	4.1			30.1			43.9	5.1
LOS	D	A		C	A			C			D	A
Approach Delay		14.7			4.5			30.1			12.9	
Approach LOS		B			A			C			B	

Intersection Summary

Cycle Length: 96
Actuated Cycle Length: 96
Offset: 7 (7%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.68
Intersection Signal Delay: 11.9 — Intersection LOS: B
Intersection Capacity Utilization 50.2% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 9: Otay Mesa Road & Harvest Rd

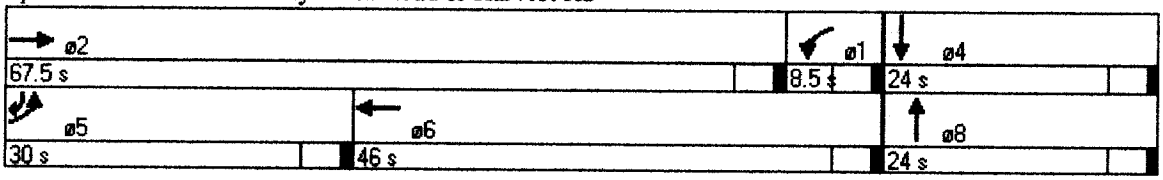


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.88
Frt		0.995			0.970			0.955				0.850
Flt Protected	0.950			0.950				0.984			0.954	
Satd. Flow (prot)	3433	3522	0	1770	3433	0	0	1750	0	0	1777	2787
Flt Permitted	0.950			0.950				0.888			0.712	
Satd. Flow (perm)	3433	3522	0	1770	3433	0	0	1580	0	0	1326	2787
Satd. Flow (RTOR)		7			37			11				62
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	740	280	10	10	930	230	10	10	10	180	10	940
Adj. Flow (vph)	851	322	11	11	1069	264	11	11	11	225	11	1080
Lane Group Flow (vph)	851	333	0	11	1333	0	0	33	0	0	236	1080
Turn Type	Prot			Prot			Perm			Perm		pm+ov
Protected Phases	5	2		1	6			8			4	5
Permitted Phases							8			4		4
Total Split (s)	30.0	67.5	0.0	8.5	46.0	0.0	24.0	24.0	0.0	24.0	24.0	30.0
Act Effct Green (s)	26.5	70.8		4.5	42.0			19.5			19.5	50.0
Actuated g/C Ratio	0.26	0.71		0.04	0.42			0.20			0.20	0.50
v/c Ratio	0.93	0.13		0.14	0.91			0.10			0.91	0.76
Control Delay	63.8	4.1		43.1	28.0			25.4			69.3	19.1
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Delay	63.8	4.1		43.1	28.0			25.4			69.3	19.1
LOS	E	A		D	C			C			E	B
Approach Delay		47.0			28.1			25.4			28.1	
Approach LOS		D			C			C			C	

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 49 (49%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.93
Intersection Signal Delay: 33.9 — Intersection LOS: C
Intersection Capacity Utilization 81.3% — ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 9: Otay Mesa Road & Harvest Rd

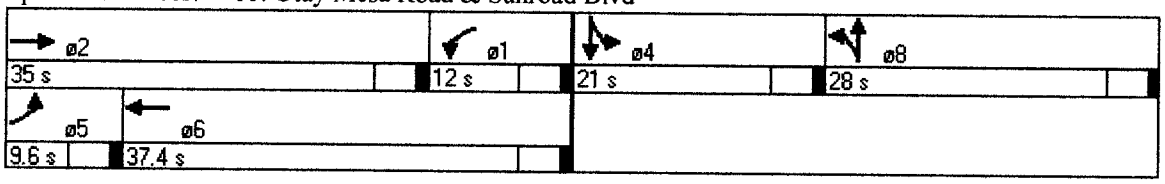


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt		0.970			0.989			0.970			0.991	
Flt Protected	0.950			0.950			0.950	0.981		0.950		
Satd. Flow (prot)	1770	3433	0	1770	1842	0	1681	1684	0	1770	1846	0
Flt Permitted	0.950			0.950			0.950	0.981		0.950		
Satd. Flow (perm)	1770	3433	0	1770	1842	0	1681	1684	0	1770	1846	0
Satd. Flow (RTOR)		33			4			13			3	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	20	850	210	90	260	20	340	100	50	20	150	10
Adj. Flow (vph)	25	1049	259	111	321	25	420	123	62	25	185	12
Lane Group Flow (vph)	25	1308	0	111	346	0	299	306	0	25	197	0
Turn Type	Prot			Prot			Split			Split		
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases												
Total Split (s)	9.6	35.0	0.0	12.0	37.4	0.0	28.0	28.0	0.0	21.0	21.0	0.0
Act Effct Green (s)	6.2	36.5		8.0	44.7		20.9	20.9		14.6	14.6	
Actuated g/C Ratio	0.06	0.38		0.08	0.47		0.22	0.22		0.15	0.15	
v/c Ratio	0.22	0.99		0.75	0.40		0.82	0.81		0.09	0.70	
Control Delay	51.8	45.7		67.1	15.6		53.7	51.1		34.5	51.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	51.8	45.7		67.1	15.6		53.7	51.1		34.5	51.2	
LOS	D	D		E	B		D	D		C	D	
Approach Delay		45.8			28.1			52.4			49.3	
Approach LOS		D			C			D			D	

Intersection Summary

Cycle Length: 96
Actuated Cycle Length: 96
Offset: 6 (6%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.99
Intersection Signal Delay: 44.6 — Intersection LOS: D
Intersection Capacity Utilization 70.6% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 10: Otay Mesa Road & Sunroad Blvd

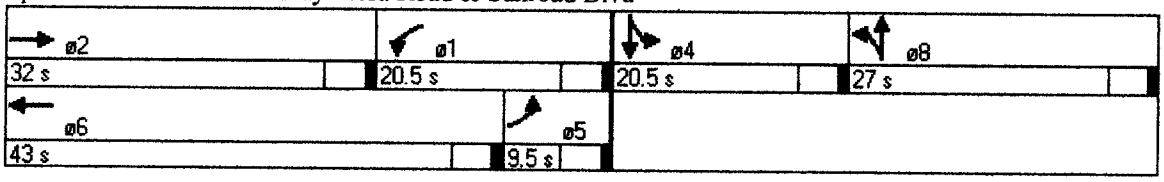


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt		0.974			0.996			0.962			0.980	
Flt Protected	0.950			0.950			0.950	0.981		0.950		
Satd. Flow (prot)	1770	3447	0	1770	1855	0	1681	1670	0	1770	1825	0
Flt Permitted	0.950			0.950			0.950	0.981		0.950		
Satd. Flow (perm)	1770	3447	0	1770	1855	0	1681	1670	0	1770	1825	0
Satd. Flow (RTOR)		25			2			16			7	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	10	380	80	50	660	20	490	130	90	20	130	20
Adj. Flow (vph)	11	418	88	55	725	22	538	143	99	22	143	22
Lane Group Flow (vph)	11	506	0	55	747	0	386	394	0	22	165	0
Turn Type	Prot			Prot			Split			Split		
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases												
Total Split (s)	9.5	32.0	0.0	20.5	43.0	0.0	27.0	27.0	0.0	20.5	20.5	0.0
Act Effct Green (s)	5.5	26.9		14.8	41.8		30.6	30.6		13.7	13.7	
Actuated g/C Ratio	0.06	0.27		0.15	0.42		0.31	0.31		0.14	0.14	
v/c Ratio	0.11	0.53		0.21	0.96		0.75	0.75		0.09	0.65	
Control Delay	55.1	31.6		37.7	54.8		42.9	41.6		37.0	50.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	55.1	31.6		37.7	54.8		42.9	41.6		37.0	50.7	
LOS	E	C		D	D		D	D		D	D	
Approach Delay		32.1			53.7			42.2			49.1	
Approach LOS		C			D			D			D	

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 52 (52%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.96
Intersection Signal Delay: 44.5 — Intersection LOS: D
Intersection Capacity Utilization 79.3% — ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 10: Otay Mesa Road & Sunroad Blvd



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	50	870	360	20	20	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	54	946	391	22	22	11
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	413				1457	402
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	413				1457	402
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	95				84	98
cM capacity (veh/h)	1146				136	648

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	54	946	413	33
Volume Left	54	0	0	22
Volume Right	0	0	22	11
cSH	1146	1700	1700	185
Volume to Capacity	0.05	0.56	0.24	0.18
Queue Length 95th (ft)	4	0	0	16
Control Delay (s)	8.3	0.0	0.0	28.6
Lane LOS	A			D
Approach Delay (s)	0.5		0.0	28.6
Approach LOS				D

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	55.8%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	20	470	680	20	20	50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	511	739	22	22	54
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	761				1304	750
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	761				1304	750
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				87	87
cM capacity (veh/h)	851				172	411

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	22	511	761	76
Volume Left	22	0	0	22
Volume Right	0	0	22	54
cSH	851	1700	1700	295
Volume to Capacity	0.03	0.30	0.45	0.26
Queue Length 95th (ft)	2	0	0	25
Control Delay (s)	9.3	0.0	0.0	21.4
Lane LOS	A			C
Approach Delay (s)	0.4		0.0	21.4
Approach LOS				C

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	47.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	60	820	10	30	350	20	10	10	10	10	5	20
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 (vph)	65	891	11	33	380	22	11	11	11	11	5	22
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	402			902			1497	1495	897	1495	1489	391
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	402			902			1497	1495	897	1495	1489	391
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	94			96			87	90	97	87	95	97
cM capacity (veh/h)	1156			753			87	111	339	84	112	657

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	65	902	33	402	33	38
Volume Left	65	0	33	0	11	11
Volume Right	0	11	0	22	11	22
cSH	1156	1700	753	1700	128	180
Volume to Capacity	0.06	0.53	0.04	0.24	0.26	0.21
Queue Length 95th (ft)	4	0	3	0	24	19
Control Delay (s)	8.3	0.0	10.0	0.0	42.5	30.2
Lane LOS	A		A		E	D
Approach Delay (s)	0.6		0.7		42.5	30.2
Approach LOS					E	D

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	59.9%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	20	460	10	10	630	10	10	5	30	20	10	60
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 (vph)	22	500	11	11	685	11	11	5	33	22	11	65
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	696			511			1326	1266	505	1291	1266	690
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	696			511			1326	1266	505	1291	1266	690
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			99			90	97	94	83	93	85
cM capacity (veh/h)	900			1054			105	163	567	125	163	445

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	22	511	11	696	49	98
Volume Left	22	0	11	0	11	22
Volume Right	0	11	0	11	33	65
cSH	900	1700	1054	1700	251	253
Volume to Capacity	0.02	0.30	0.01	0.41	0.19	0.39
Queue Length 95th (ft)	2	0	1	0	18	43
Control Delay (s)	9.1	0.0	8.5	0.0	22.8	27.9
Lane LOS	A		A		C	D
Approach Delay (s)	0.4		0.1		22.8	27.9
Approach LOS					C	D

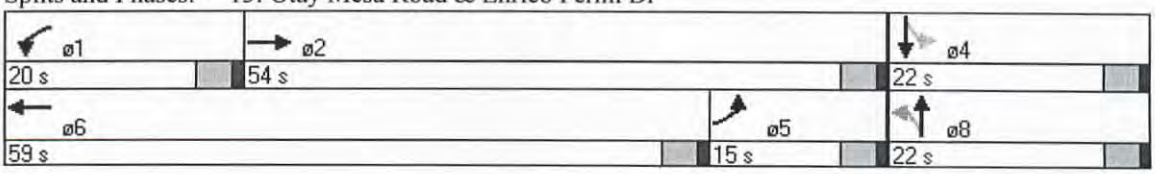
Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	47.6%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.975			0.989			0.889			0.925	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1816	0	1770	1842	0	1770	1656	0	1770	1723	0
Flt Permitted	0.950			0.950			0.722			0.222		
Satd. Flow (perm)	1770	1816	0	1770	1842	0	1345	1656	0	414	1723	0
Satd. Flow (RTOR)		16			7			134			27	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	70	640	130	240	260	20	120	90	260	20	20	20
Adj. Flow (vph)	96	877	178	329	356	27	164	123	356	27	27	27
Lane Group Flow (vph)	96	1055	0	329	383	0	164	479	0	27	54	0
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Total Split (s)	15.0	54.0	0.0	20.0	59.0	0.0	22.0	22.0	0.0	22.0	22.0	0.0
Act Effct Green (s)	10.1	50.0		16.0	58.0		18.0	18.0		18.0	18.0	
Actuated g/C Ratio	0.11	0.52		0.17	0.60		0.19	0.19		0.19	0.19	
v/c Ratio	0.52	1.11		1.12	0.34		0.65	1.14		0.35	0.16	
Control Delay	41.5	79.5		125.8	11.2		42.2	112.5		47.8	20.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	41.5	79.5		125.8	11.2		42.2	112.5		47.8	20.9	
LOS	D	E		F	B		D	F		D	C	
Approach Delay		76.3			64.2			94.6			29.9	
Approach LOS		E			E			F			C	

Intersection Summary

Cycle Length: 96
Actuated Cycle Length: 96
Offset: 62 (65%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.14
Intersection Signal Delay: 76.1 — Intersection LOS: E
Intersection Capacity Utilization 85.6% — ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 13: Otay Mesa Road & Enrico Fermi Dr

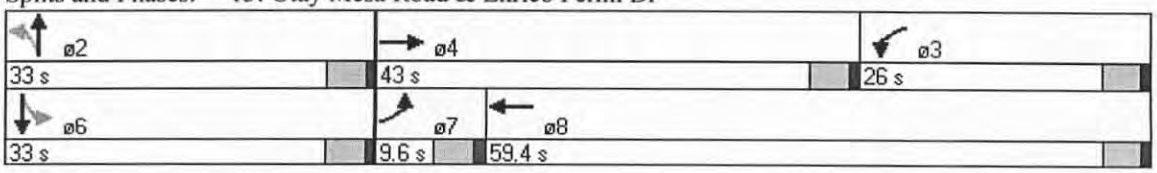


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.979			0.993			0.867			0.934	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1824	0	1770	1850	0	1770	1615	0	1770	1740	0
Flt Permitted	0.950			0.950			0.536			0.333		
Satd. Flow (perm)	1770	1824	0	1770	1850	0	998	1615	0	620	1740	0
Satd. Flow (RTOR)		9			4			286			38	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	20	420	70	200	420	20	160	30	240	20	90	70
Adj. Flow (vph)	24	500	83	238	500	24	190	36	286	24	107	83
Lane Group Flow (vph)	24	583	0	238	524	0	190	322	0	24	190	0
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		
Total Split (s)	9.6	43.0	0.0	26.0	59.4	0.0	33.0	33.0	0.0	33.0	33.0	0.0
Act Effct Green (s)	5.6	35.3		18.3	53.7		36.5	36.5		36.5	36.5	
Actuated g/C Ratio	0.05	0.35		0.18	0.53		0.36	0.36		0.36	0.36	
v/c Ratio	0.25	0.92		0.75	0.54		0.53	0.42		0.11	0.29	
Control Delay	52.7	51.6		54.3	17.8		28.6	4.8		28.0	22.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	52.7	51.6		54.3	17.8		28.6	4.8		28.0	22.5	
LOS	D	D		D	B		C	A		C	C	
Approach Delay		51.7			29.2			13.6			23.1	
Approach LOS		D			C			B			C	

Intersection Summary

Cycle Length: 102
Actuated Cycle Length: 102
Offset: 14 (14%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 31.3 — Intersection LOS: C
Intersection Capacity Utilization 70.5% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 13: Otay Mesa Road & Enrico Fermi Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	640	140	190	30	90	80	70	80	30	50	50	290
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 (vph)	696	152	207	33	98	87	76	87	33	54	54	315

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	1054	217	196	424
Volume Left (vph)	696	33	76	54
Volume Right (vph)	207	87	33	315
Hadj (s)	0.05	-0.18	0.01	-0.39
Departure Headway (s)	6.8	7.4	7.8	6.7
Degree Utilization, x	2.00	0.45	0.42	0.79
Capacity (veh/h)	533	447	427	526
Control Delay (s)	472.4	16.2	16.3	30.2
Approach Delay (s)	472.4	16.2	16.3	30.2
Approach LOS	F	C	C	D

Intersection Summary			
Delay	273.7		
HCM Level of Service	F		
Intersection Capacity Utilization	100.1%	ICU Level of Service	G
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	400	50	90	30	90	50	180	50	30	50	80	410
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 (vph)	435	54	98	33	98	54	196	54	33	54	87	446

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	587	185	283	587
Volume Left (vph)	435	33	196	54
Volume Right (vph)	98	54	33	446
Hadj (s)	0.08	-0.11	0.10	-0.40
Departure Headway (s)	7.6	8.5	8.2	7.1
Degree Utilization, x	1.23	0.44	0.65	1.15
Capacity (veh/h)	482	399	425	506
Control Delay (s)	145.7	18.0	25.0	114.0
Approach Delay (s)	145.7	18.0	25.0	114.0
Approach LOS	F	C	C	F

Intersection Summary			
Delay	99.2		
HCM Level of Service	F		
Intersection Capacity Utilization	99.7%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	20	180	40	20	400	350	40	70	10	210	360	140
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	22	198	44	22	440	385	44	77	11	231	396	154

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	264	462	385	44	88	626	154
Volume Left (vph)	22	22	0	44	0	231	0
Volume Right (vph)	44	0	385	0	11	0	154
Hadj (s)	-0.05	0.06	-0.67	0.53	-0.05	0.22	-0.67
Departure Headway (s)	8.0	7.7	7.0	9.5	8.9	8.1	7.2
Degree Utilization, x	0.59	0.99	0.75	0.12	0.22	1.42	0.31
Capacity (veh/h)	428	462	508	366	389	448	496
Control Delay (s)	21.9	64.8	26.4	12.5	13.2	222.3	12.3
Approach Delay (s)	21.9	47.4		13.0		180.9	
Approach LOS	C	E		B		F	

Intersection Summary			
Delay	93.3		
HCM Level of Service	F		
Intersection Capacity Utilization	72.8%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	100	230	20	20	370	470	50	230	10	100	190	80
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	114	261	23	23	420	534	57	261	11	114	216	91

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	398	443	534	57	273	330	91
Volume Left (vph)	114	23	0	57	0	114	0
Volume Right (vph)	23	0	534	0	11	0	91
Hadj (s)	0.06	0.06	-0.67	0.53	0.00	0.21	-0.67
Departure Headway (s)	9.2	8.8	8.1	10.0	9.5	9.4	8.5
Degree Utilization, x	1.01	1.09	1.21	0.16	0.72	0.86	0.22
Capacity (veh/h)	384	410	449	353	372	376	414
Control Delay (s)	79.3	99.1	136.9	13.6	31.8	47.8	12.7
Approach Delay (s)	79.3	119.7		28.7		40.2	
Approach LOS	F	F		D		E	

Intersection Summary			
Delay	82.3		
HCM Level of Service	F		
Intersection Capacity Utilization	81.0%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	90	220	80	20	260	10	320	70	30	10	70	190
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	100	244	89	22	289	11	356	78	33	11	78	211
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	300			333			928	833	167	733	872	150
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	300			333			928	833	167	733	872	150
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	92			98			0	72	96	95	70	76
cM capacity (veh/h)	1258			1223			121	274	848	215	260	870

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1
Volume Total	100	163	170	22	193	107	433	33	300
Volume Left	100	0	0	22	0	0	356	0	11
Volume Right	0	0	89	0	0	11	0	33	211
cSH	1258	1700	1700	1223	1700	1700	134	848	505
Volume to Capacity	0.08	0.10	0.10	0.02	0.11	0.06	3.23	0.04	0.59
Queue Length 95th (ft)	6	0	0	1	0	0	Err	3	95
Control Delay (s)	8.1	0.0	0.0	8.0	0.0	0.0	Err	9.4	22.0
Lane LOS	A			A			F	A	C
Approach Delay (s)	1.9			0.6			9285.5		22.0
Approach LOS							F		C

Intersection Summary			
Average Delay	2851.6		
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	110	160	70	60	340	20	430	80	30	10	70	80
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	126	184	80	69	391	23	494	92	34	11	80	92
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	414			264			943	1029	132	966	1057	207
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	414			264			943	1029	132	966	1057	207
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	89			95			0	53	96	90	57	88
cM capacity (veh/h)	1142			1297			114	196	893	113	188	799

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1
Volume Total	126	123	142	69	261	153	586	34	184
Volume Left	126	0	0	69	0	0	494	0	11
Volume Right	0	0	80	0	0	23	0	34	92
cSH	1142	1700	1700	1297	1700	1700	122	893	285
Volume to Capacity	0.11	0.07	0.08	0.05	0.15	0.09	4.81	0.04	0.64
Queue Length 95th (ft)	9	0	0	4	0	0	Err	3	103
Control Delay (s)	8.5	0.0	0.0	7.9	0.0	0.0	Err	9.2	37.9
Lane LOS	A			A			F	A	E
Approach Delay (s)	2.8			1.1			9444.0		37.9
Approach LOS							F		E

Intersection Summary			
Average Delay	3498.1		
Intersection Capacity Utilization	66.6%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	160	70	20	240	50	60
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	205	90	26	308	64	77
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			295		609	147
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			295		609	147
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		85	91
cM capacity (veh/h)			1263		418	873

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2
Volume Total	137	158	26	308	64	77
Volume Left	0	0	26	0	64	0
Volume Right	0	90	0	0	0	77
cSH	1700	1700	1263	1700	418	873
Volume to Capacity	0.08	0.09	0.02	0.18	0.15	0.09
Queue Length 95th (ft)	0	0	2	0	13	7
Control Delay (s)	0.0	0.0	7.9	0.0	15.2	9.5
Lane LOS			A		C	A
Approach Delay (s)	0.0		0.6		12.1	
Approach LOS					B	

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	23.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	120	70	30	280	110	10
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	143	83	36	333	131	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			226		589	113
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			226		589	113
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		69	99
cM capacity (veh/h)			1339		427	918

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2
Volume Total	95	131	36	333	131	12
Volume Left	0	0	36	0	131	0
Volume Right	0	83	0	0	0	12
cSH	1700	1700	1339	1700	427	918
Volume to Capacity	0.06	0.08	0.03	0.20	0.31	0.01
Queue Length 95th (ft)	0	0	2	0	32	1
Control Delay (s)	0.0	0.0	7.8	0.0	17.1	9.0
Lane LOS			A		C	A
Approach Delay (s)	0.0		0.8		16.4	
Approach LOS					C	

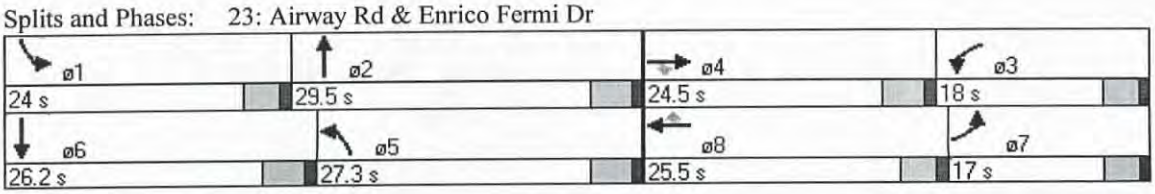
Intersection Summary			
Average Delay	3.6		
Intersection Capacity Utilization	27.5%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.984	0.850			0.850		0.965			0.981	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1741	1504	1770	1863	1583	1770	3415	0	1770	3472	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1741	1504	1770	1863	1583	1770	3415	0	1770	3472	0
Satd. Flow (RTOR)		6	98			84		41			16	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	60	70	90	70	40	70	170	290	90	130	340	50
Adj. Flow (vph)	72	84	108	84	48	84	205	349	108	157	410	60
Lane Group Flow (vph)	72	94	98	84	48	84	205	457	0	157	470	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Total Split (s)	17.0	24.5	24.5	18.0	25.5	25.5	27.3	29.5	0.0	24.0	26.2	0.0
Act Effct Green (s)	12.3	10.5	10.5	9.8	7.8	7.8	19.7	48.6		13.2	42.0	
Actuated g/C Ratio	0.13	0.11	0.11	0.10	0.08	0.08	0.21	0.51		0.14	0.44	
v/c Ratio	0.32	0.48	0.39	0.47	0.32	0.41	0.56	0.26		0.65	0.31	
Control Delay	39.8	45.1	12.8	47.1	43.2	13.6	41.1	14.8		36.4	14.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	39.8	45.1	12.8	47.1	43.2	13.6	41.1	14.8		36.4	14.8	
LOS	D	D	B	D	D	B	D	B		D	B	
Approach Delay		31.7			33.2			22.9			20.2	
Approach LOS		C			C			C			C	

Intersection Summary

Cycle Length: 96
Actuated Cycle Length: 96
Offset: 63 (66%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.65
Intersection Signal Delay: 24.5 — Intersection LOS: C
Intersection Capacity Utilization 41.0% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 23: Airway Rd & Enrico Fermi Dr

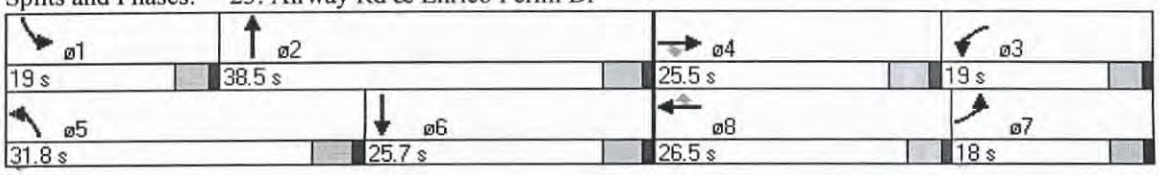


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850			0.850		0.967			0.977	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1770	1504	1770	1863	1583	1770	3422	0	1770	3458	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1770	1504	1770	1863	1583	1770	3422	0	1770	3458	0
Satd. Flow (RTOR)			49			122		38			19	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	50	40	40	70	70	100	190	320	90	70	270	50
Adj. Flow (vph)	61	49	49	85	85	122	232	390	110	85	329	61
Lane Group Flow (vph)	61	49	49	85	85	122	232	500	0	85	390	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Total Split (s)	18.0	25.5	25.5	19.0	26.5	26.5	31.8	38.5	0.0	19.0	25.7	0.0
Act Effct Green (s)	9.0	8.6	8.6	10.0	9.5	9.5	19.4	61.3		10.1	50.0	
Actuated g/C Ratio	0.09	0.08	0.08	0.10	0.09	0.09	0.19	0.60		0.10	0.49	
v/c Ratio	0.39	0.33	0.28	0.49	0.49	0.47	0.69	0.24		0.48	0.23	
Control Delay	50.2	49.1	16.8	53.6	53.0	14.5	42.1	12.5		64.2	11.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	50.2	49.1	16.8	53.6	53.0	14.5	42.1	12.5		64.2	11.0	
LOS	D	D	B	D	D	B	D	B		E	B	
Approach Delay		39.6			37.1			21.9			20.5	
Approach LOS		D			D			C			C	

Intersection Summary

Cycle Length: 102
Actuated Cycle Length: 102
Offset: 82 (80%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.69
Intersection Signal Delay: 25.9 — Intersection LOS: C
Intersection Capacity Utilization 40.1% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 23: Airway Rd & Enrico Fermi Dr

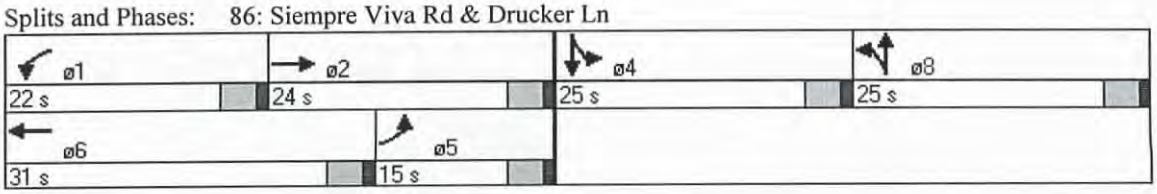


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.980			0.981			0.900			0.948	
Flt Protected	0.950			0.950			0.950				0.974	
Satd. Flow (prot)	1770	4984	0	1770	4989	0	1770	1676	0	0	1720	0
Flt Permitted	0.950			0.950			0.950				0.974	
Satd. Flow (perm)	1770	4984	0	1770	4989	0	1770	1676	0	0	1720	0
Satd. Flow (RTOR)		26			28			22			30	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	40	330	50	120	680	100	30	10	20	70	10	50
Adj. Flow (vph)	43	359	54	130	739	109	33	11	22	76	11	54
Lane Group Flow (vph)	43	413	0	130	848	0	33	33	0	0	141	0
Turn Type	Prot			Prot			Split			Split		
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases												
Total Split (s)	15.0	24.0	0.0	22.0	31.0	0.0	25.0	25.0	0.0	25.0	25.0	0.0
Act Effct Green (s)	8.9	49.5		12.0	56.5		7.2	7.2			11.3	
Actuated g/C Ratio	0.09	0.52		0.12	0.59		0.08	0.08			0.12	
v/c Ratio	0.26	0.16		0.59	0.29		0.25	0.23			0.62	
Control Delay	43.4	13.2		45.4	10.7		45.9	25.7			42.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay	43.4	13.2		45.4	10.7		45.9	25.7			42.4	
LOS	D	B		D	B		D	C			D	
Approach Delay		16.1			15.3			35.8			42.4	
Approach LOS		B			B			D			D	

Intersection Summary

Cycle Length: 96
Actuated Cycle Length: 96
Offset: 38 (40%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.62
Intersection Signal Delay: 18.7 — Intersection LOS: B
Intersection Capacity Utilization 42.8% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 86: Siempre Viva Rd & Drucker Ln

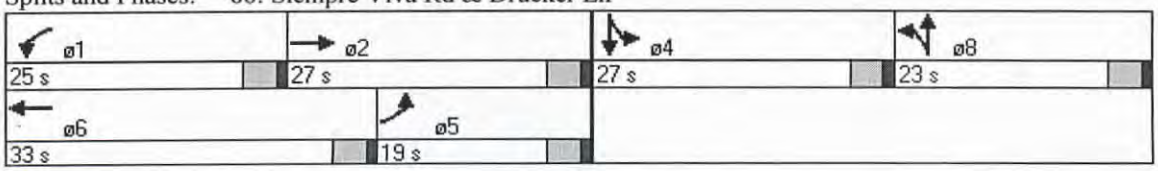


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.985			0.968			0.880			0.979	
Flt Protected	0.950			0.950			0.950				0.969	
Satd. Flow (prot)	1770	5009	0	1770	4923	0	1770	1639	0	0	1767	0
Flt Permitted	0.950			0.950			0.950				0.969	
Satd. Flow (perm)	1770	5009	0	1770	4923	0	1770	1639	0	0	1767	0
Satd. Flow (RTOR)		16			67			44			9	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	90	650	70	160	700	190	50	10	40	120	40	30
Adj. Flow (vph)	99	714	77	176	769	209	55	11	44	132	44	33
Lane Group Flow (vph)	99	791	0	176	978	0	55	55	0	0	209	0
Turn Type	Prot			Prot			Split			Split		
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases												
Total Split (s)	19.0	27.0	0.0	25.0	33.0	0.0	23.0	23.0	0.0	27.0	27.0	0.0
Act Effct Green (s)	9.3	16.4		11.7	18.6		8.1	8.1			12.6	
Actuated g/C Ratio	0.14	0.26		0.18	0.29		0.13	0.13			0.20	
v/c Ratio	0.39	0.61		0.56	0.66		0.24	0.22			0.58	
Control Delay	34.5	24.4		34.4	21.7		34.4	16.7			32.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay	34.5	24.4		34.4	21.7		34.4	16.7			32.2	
LOS	C	C		C	C		C	B			C	
Approach Delay		25.5			23.6			25.6			32.2	
Approach LOS		C			C			C			C	

Intersection Summary

Cycle Length: 102
Actuated Cycle Length: 63.3
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.66
Intersection Signal Delay: 25.2 — Intersection LOS: C
Intersection Capacity Utilization 50.2% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 86: Siempre Viva Rd & Drucker Ln

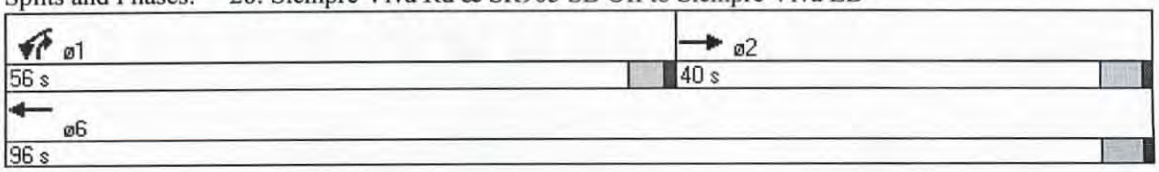


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.91	0.91	0.97	0.91	1.00	0.88
Frt	0.974					0.850
Flt Protected			0.950			
Satd. Flow (prot)	4953	0	3433	5085	0	2787
Flt Permitted			0.950			
Satd. Flow (perm)	4953	0	3433	5085	0	2787
Satd. Flow (RTOR)	55					185
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	610	130	230	1060	0	760
Adj. Flow (vph)	663	141	250	1152	0	826
Lane Group Flow (vph)	804	0	250	1152	0	826
Turn Type			Prot			Over
Protected Phases	2		1	6		1
Permitted Phases						
Total Split (s)	40.0	0.0	56.0	96.0	0.0	56.0
Act Effct Green (s)	55.6		32.4	96.0		32.4
Actuated g/C Ratio	0.58		0.34	1.00		0.34
v/c Ratio	0.28		0.22	0.23		0.78
Control Delay	8.0		18.7	0.1		26.6
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	8.0		18.7	0.1		26.6
LOS	A		B	A		C
Approach Delay	8.0			3.4		
Approach LOS	A			A		

Intersection Summary

Cycle Length: 96
Actuated Cycle Length: 96
Offset: 77 (80%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 11.0 — Intersection LOS: B
Intersection Capacity Utilization 47.9% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 28: Siempre Viva Rd & SR905 SB Off to Siempre Viva EB

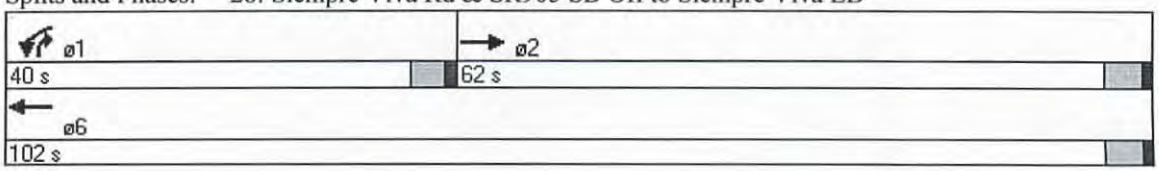


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.91	0.91	0.97	0.91	1.00	0.88
Frt	0.947					0.850
Flt Protected			0.950			
Satd. Flow (prot)	4816	0	3433	5085	0	2787
Flt Permitted			0.950			
Satd. Flow (perm)	4816	0	3433	5085	0	2787
Satd. Flow (RTOR)	94					98
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	1240	670	640	750	0	340
Adj. Flow (vph)	1265	684	653	765	0	347
Lane Group Flow (vph)	1949	0	653	765	0	347
Turn Type			Prot			Over
Protected Phases	2		1	6		1
Permitted Phases						
Total Split (s)	62.0	0.0	40.0	102.0	0.0	40.0
Act Effct Green (s)	67.1		26.9	102.0		26.9
Actuated g/C Ratio	0.66		0.26	1.00		0.26
v/c Ratio	0.61		0.72	0.15		0.43
Control Delay	11.3		26.2	0.1		22.6
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	11.3		26.2	0.1		22.6
LOS	B		C	A		C
Approach Delay	11.3			12.1		
Approach LOS	B			B		

Intersection Summary

Cycle Length: 102
Actuated Cycle Length: 102
Offset: 88 (86%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.72
Intersection Signal Delay: 12.6 — Intersection LOS: B
Intersection Capacity Utilization 63.9% — ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 28: Siempre Viva Rd & SR905 SB Off to Siempre Viva EB



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑			↱
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	1370	820	0	0	470
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	1457	872	0	0	500
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		281	733			
pX, platoon unblocked					0.95	
vC, conflicting volume	872				1358	291
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	872				1268	291
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	29
cM capacity (veh/h)	769				152	706

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1
Volume Total	486	486	486	291	291	291	500
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	500
cSH	1700	1700	1700	1700	1700	1700	706
Volume to Capacity	0.29	0.29	0.29	0.17	0.17	0.17	0.71
Queue Length 95th (ft)	0	0	0	0	0	0	148
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	21.5
Lane LOS							C
Approach Delay (s)	0.0			0.0			21.5
Approach LOS							C

Intersection Summary			
Average Delay	3.8		
Intersection Capacity Utilization	65.3%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑			↱
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	1580	1040	0	0	350
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	0	1612	1061	0	0	357
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		281	733			
pX, platoon unblocked					0.85	
vC, conflicting volume	1061				1599	354
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1061				1347	354
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	44
cM capacity (veh/h)	652				121	643

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1
Volume Total	537	537	537	354	354	354	357
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	357
cSH	1700	1700	1700	1700	1700	1700	643
Volume to Capacity	0.32	0.32	0.32	0.21	0.21	0.21	0.56
Queue Length 95th (ft)	0	0	0	0	0	0	86
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	17.4
Lane LOS							C
Approach Delay (s)	0.0			0.0			17.4
Approach LOS							C

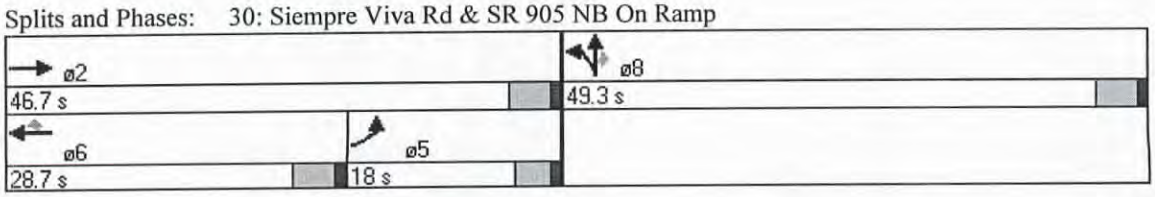
Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	75.2%	ICU Level of Service	D
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	1.00	0.86	0.86	1.00	1.00	0.88	1.00	1.00	1.00
Frt					0.934	0.850			0.850			
Flt Protected	0.950							0.953				
Satd. Flow (prot)	3433	5085	0	0	4489	1362	0	1775	2787	0	0	0
Flt Permitted	0.950							0.953				
Satd. Flow (perm)	3433	5085	0	0	4489	1362	0	1775	2787	0	0	0
Satd. Flow (RTOR)					201	255			50			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	220	1150	0	0	310	490	510	10	550	0	0	0
Adj. Flow (vph)	229	1198	0	0	323	510	531	10	573	0	0	0
Lane Group Flow (vph)	229	1198	0	0	578	255	0	541	573	0	0	0
Turn Type	Prot					Perm	Split		Perm			
Protected Phases	5	2			6		8	8				
Permitted Phases						6			8			
Total Split (s)	18.0	46.7	0.0	0.0	28.7	28.7	49.3	49.3	49.3	0.0	0.0	0.0
Act Effct Green (s)	11.4	53.0			37.6	37.6		35.0	35.0			
Actuated g/C Ratio	0.12	0.55			0.39	0.39		0.36	0.36			
v/c Ratio	0.56	0.43			0.31	0.37		0.84	0.55			
Control Delay	41.9	14.0			1.8	2.0		39.2	23.0			
Queue Delay	0.0	0.0			0.0	0.0		0.0	0.0			
Total Delay	41.9	14.0			1.8	2.0		39.2	23.0			
LOS	D	B			A	A		D	C			
Approach Delay		18.5			1.9			30.9				
Approach LOS		B			A			C				

Intersection Summary

Cycle Length: 96
Actuated Cycle Length: 96
Offset: 34 (35%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 18.5 — Intersection LOS: B
Intersection Capacity Utilization 65.3% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 30: Siempre Viva Rd & SR 905 NB On Ramp

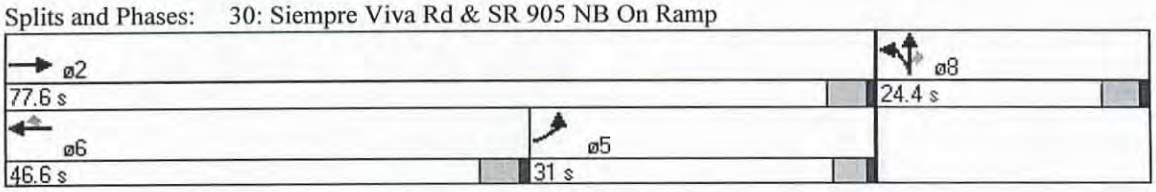


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	1.00	0.86	0.86	1.00	1.00	0.88	1.00	1.00	1.00
Frt					0.952	0.850			0.850			
Flt Protected	0.950							0.955				
Satd. Flow (prot)	3433	5085	0	0	4575	1362	0	1779	2787	0	0	0
Flt Permitted	0.950							0.955				
Satd. Flow (perm)	3433	5085	0	0	4575	1362	0	1779	2787	0	0	0
Satd. Flow (RTOR)					142	461			287			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	600	980	0	0	860	910	180	10	440	0	0	0
Adj. Flow (vph)	638	1043	0	0	915	968	191	11	468	0	0	0
Lane Group Flow (vph)	638	1043	0	0	1345	538	0	202	468	0	0	0
Turn Type	Prot					Perm	Split		Perm			
Protected Phases	5	2			6		8	8				
Permitted Phases						6			8			
Total Split (s)	31.0	77.6	0.0	0.0	46.6	46.6	24.4	24.4	24.4	0.0	0.0	0.0
Act Effct Green (s)	22.8	77.2			50.4	50.4		16.8	16.8			
Actuated g/C Ratio	0.22	0.76			0.49	0.49		0.16	0.16			
v/c Ratio	0.83	0.27			0.58	0.59		0.69	0.67			
Control Delay	43.5	1.5			2.5	1.8		52.1	19.6			
Queue Delay	0.0	0.0			0.0	0.0		0.0	0.0			
Total Delay	43.5	1.5			2.5	1.8		52.1	19.6			
LOS	D	A			A	A		D	B			
Approach Delay		17.5			2.3			29.4				
Approach LOS		B			A			C				

Intersection Summary

Cycle Length: 102
Actuated Cycle Length: 102
Offset: 9 (9%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.83
Intersection Signal Delay: 12.6 — Intersection LOS: B
Intersection Capacity Utilization 75.2% — ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 30: Siempre Viva Rd & SR 905 NB On Ramp

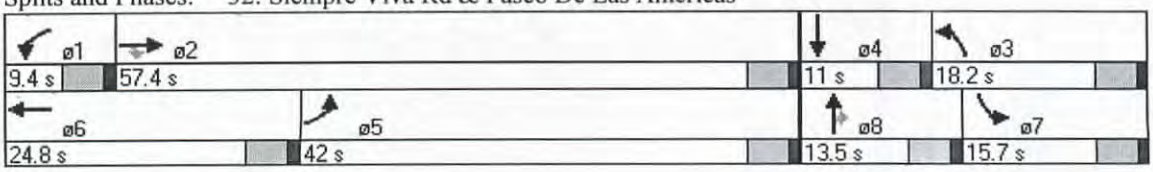


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850		0.994				0.850		0.912	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5085	1583	1770	3518	0	1770	3539	1583	1770	3228	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	5085	1583	1770	3518	0	1770	3539	1583	1770	3228	0
Satd. Flow (RTOR)			191		4				21		181	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	530	660	180	20	480	20	150	70	20	90	120	170
Adj. Flow (vph)	564	702	191	21	511	21	160	74	21	96	128	181
Lane Group Flow (vph)	564	702	191	21	532	0	160	74	21	96	309	0
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2						8			
Total Split (s)	42.0	57.4	57.4	9.4	24.8	0.0	18.2	13.5	13.5	15.7	11.0	0.0
Act Effct Green (s)	38.0	60.6	60.6	5.7	22.4		12.8	7.8	7.8	11.8	6.9	
Actuated g/C Ratio	0.40	0.63	0.63	0.06	0.23		0.13	0.08	0.08	0.12	0.07	
v/c Ratio	0.80	0.22	0.18	0.20	0.65		0.68	0.26	0.14	0.44	0.77	
Control Delay	30.7	7.3	1.6	50.0	25.2		54.4	43.1	19.0	45.8	32.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	30.7	7.3	1.6	50.0	25.2		54.4	43.1	19.0	45.8	32.1	
LOS	C	A	A	D	C		D	D	B	D	C	
Approach Delay		15.6			26.2			48.2			35.4	
Approach LOS		B			C			D			D	

Intersection Summary

Cycle Length: 96
Actuated Cycle Length: 96
Offset: 27 (28%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 23.9 — Intersection LOS: C
Intersection Capacity Utilization 73.7% — ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 32: Siempre Viva Rd & Paseo De Las Americas

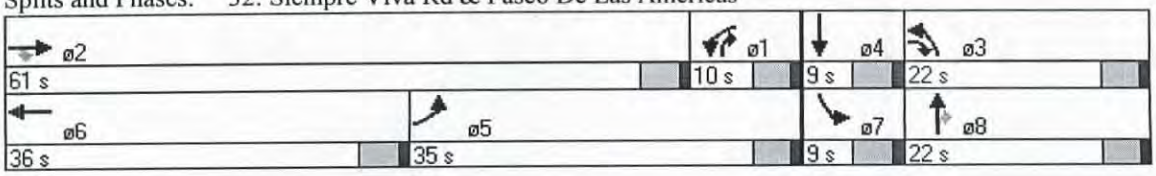


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850		0.996				0.850		0.907	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	2049	5487	1708	1909	4082	0	2049	3819	1708	1909	3463	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	2049	5487	1708	1909	4082	0	2049	3819	1708	1909	3463	0
Satd. Flow (RTOR)			102		3				10		235	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	640	430	100	50	1170	30	370	200	10	20	140	230
Adj. Flow (vph)	653	439	102	51	1194	31	378	204	10	20	143	235
Lane Group Flow (vph)	653	439	102	51	1225	0	378	204	10	20	378	0
Turn Type	Prot		pm+ov	Prot			Prot		pm+ov	Prot		
Protected Phases	5	2	3	1	6		3	8	1	7	4	
Permitted Phases			2						8			
Total Split (s)	35.0	61.0	22.0	10.0	36.0	0.0	22.0	22.0	10.0	9.0	9.0	0.0
Act Effct Green (s)	31.0	59.0	81.0	6.0	32.0		18.0	23.4	31.8	5.0	5.0	
Actuated g/C Ratio	0.30	0.58	0.79	0.06	0.31		0.18	0.23	0.31	0.05	0.05	
v/c Ratio	1.05	0.14	0.07	0.46	0.95		1.04	0.23	0.02	0.21	0.96	
Control Delay	80.6	8.7	0.7	63.3	45.5		101.3	34.1	11.6	51.6	56.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	80.6	8.7	0.7	63.3	45.5		101.3	34.1	11.6	51.6	56.7	
LOS	F	A	A	E	D		F	C	B	D	E	
Approach Delay		47.3			46.2			76.7			56.5	
Approach LOS		D			D			E			E	

Intersection Summary

Cycle Length: 102
Actuated Cycle Length: 102
Offset: 100 (98%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.05
Intersection Signal Delay: 53.0 — Intersection LOS: D
Intersection Capacity Utilization 100.9% — ICU Level of Service G
Analysis Period (min) 15

Splits and Phases: 32: Siempre Viva Rd & Paseo De Las Americas



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	60	690	20	30	410	30	60	20	10	30	10	50
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	76	873	25	38	519	38	76	25	13	38	13	63
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		1276			1310							
pX, platoon unblocked				0.99			0.99	0.99	0.99	0.99	0.99	
vC, conflicting volume	557			899			1443	1671	449	1228	1665	278
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	557			883			1435	1666	427	1217	1660	278
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	92			95			0	69	98	59	85	91
cM capacity (veh/h)	1010			751			68	83	568	92	84	719

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1	SB 2
Volume Total	76	582	316	38	346	211	114	51	63
Volume Left	76	0	0	38	0	0	76	38	0
Volume Right	0	0	25	0	0	38	13	0	63
cSH	1010	1700	1700	751	1700	1700	79	90	719
Volume to Capacity	0.08	0.34	0.19	0.05	0.20	0.12	1.44	0.57	0.09
Queue Length 95th (ft)	6	0	0	4	0	0	227	64	7
Control Delay (s)	8.9	0.0	0.0	10.0	0.0	0.0	349.9	88.1	10.5
Lane LOS	A			B			F	F	B
Approach Delay (s)	0.7			0.6			349.9	45.0	
Approach LOS							F	E	

Intersection Summary			
Average Delay	25.6		
Intersection Capacity Utilization	44.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	120	280	60	20	1010	20	110	20	10	20	20	130
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	140	326	70	23	1174	23	128	23	12	23	23	151
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		1276			1310							
pX, platoon unblocked	0.99						0.99	0.99		0.99	0.99	0.99
vC, conflicting volume	1198			395			1436	1884	198	1698	1907	599
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1192			395			1432	1883	198	1696	1906	589
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	76			98			0	55	99	25	54	66
cM capacity (veh/h)	577			1160			32	52	810	31	50	448

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1	SB 2
Volume Total	140	217	178	23	783	415	163	47	151
Volume Left	140	0	0	23	0	0	128	23	0
Volume Right	0	0	70	0	0	23	12	0	151
cSH	577	1700	1700	1160	1700	1700	37	38	448
Volume to Capacity	0.24	0.13	0.10	0.02	0.46	0.24	4.41	1.21	0.34
Queue Length 95th (ft)	23	0	0	2	0	0	Err	118	37
Control Delay (s)	13.2	0.0	0.0	8.2	0.0	0.0	Err	377.3	17.1
Lane LOS	B			A			F	F	C
Approach Delay (s)	3.4			0.2			Err	101.8	
Approach LOS							F	F	

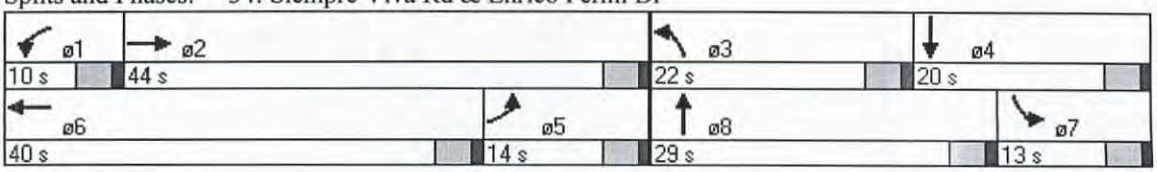
Intersection Summary			
Average Delay	779.6		
Intersection Capacity Utilization	59.6%	ICU Level of Service	B
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.991			0.975			0.967			0.874	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	1846	0	1770	3451	0	1770	3422	0	1770	3093	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	1846	0	1770	3451	0	1770	3422	0	1770	3093	0
Satd. Flow (RTOR)		4			28			37			193	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	250	450	30	40	200	40	110	140	40	50	30	160
Adj. Flow (vph)	301	542	36	48	241	48	133	169	48	60	36	193
Lane Group Flow (vph)	301	578	0	48	289	0	133	217	0	60	229	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Total Split (s)	14.0	44.0	0.0	10.0	40.0	0.0	22.0	29.0	0.0	13.0	20.0	0.0
Act Effct Green (s)	28.1	56.6		8.2	32.6		12.2	12.0		9.2	7.1	
Actuated g/C Ratio	0.29	0.59		0.09	0.34		0.13	0.12		0.10	0.07	
v/c Ratio	0.30	0.53		0.32	0.24		0.59	0.47		0.36	0.56	
Control Delay	21.9	12.4		47.0	24.0		49.7	36.2		59.0	28.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	21.9	12.4		47.0	24.0		49.7	36.2		59.0	28.2	
LOS	C	B		D	C		D	D		E	C	
Approach Delay		15.7			27.3			41.3			34.6	
Approach LOS		B			C			D			C	

Intersection Summary

Cycle Length: 96
Actuated Cycle Length: 96
Offset: 94 (98%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.59
Intersection Signal Delay: 25.6 — Intersection LOS: C
Intersection Capacity Utilization 54.3% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 34: Siempre Viva Rd & Enrico Fermi Dr

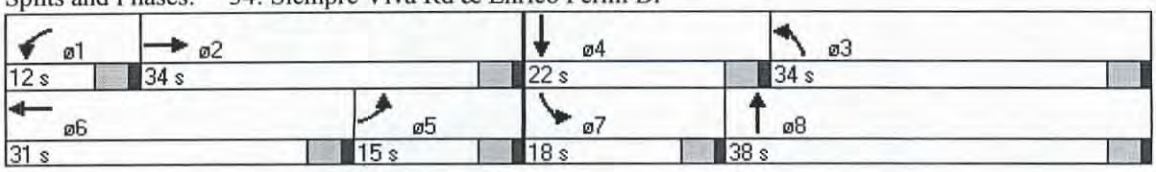


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.970			0.978			0.979			0.875	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	1807	0	1770	3461	0	1770	3465	0	1770	3097	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	1807	0	1770	3461	0	1770	3465	0	1770	3097	0
Satd. Flow (RTOR)		12			18			20			330	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	160	120	30	40	470	80	280	240	40	90	60	300
Adj. Flow (vph)	176	132	33	44	516	88	308	264	44	99	66	330
Lane Group Flow (vph)	176	165	0	44	604	0	308	308	0	99	396	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Total Split (s)	15.0	34.0	0.0	12.0	31.0	0.0	34.0	38.0	0.0	18.0	22.0	0.0
Act Effct Green (s)	9.9	50.6		8.0	44.6		22.2	22.9		10.7	9.2	
Actuated g/C Ratio	0.10	0.50		0.08	0.44		0.22	0.22		0.10	0.09	
v/c Ratio	0.53	0.18		0.32	0.40		0.80	0.39		0.54	0.68	
Control Delay	41.4	13.3		49.4	22.3		52.7	32.5		45.4	12.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	41.4	13.3		49.4	22.3		52.7	32.5		45.4	12.0	
LOS	D	B		D	C		D	C		D	B	
Approach Delay		27.8			24.1			42.6			18.7	
Approach LOS		C			C			D			B	

Intersection Summary

Cycle Length: 102
Actuated Cycle Length: 102
Offset: 70 (69%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 28.9 — Intersection LOS: C
Intersection Capacity Utilization 60.3% — ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 34: Siempre Viva Rd & Enrico Fermi Dr

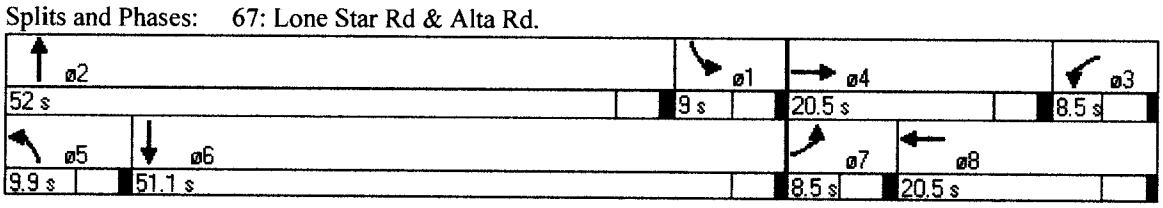


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.925				0.850		0.986			0.976	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1723	0	1770	1863	1583	1770	1837	0	1770	1818	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1723	0	1770	1863	1583	1770	1837	0	1770	1818	0
Satd. Flow (RTOR)		33				65		9			16	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	50	30	30	40	30	60	30	688	70	60	317	60
Adj. Flow (vph)	54	33	33	43	33	65	33	748	76	65	345	65
Lane Group Flow (vph)	54	66	0	43	33	65	33	824	0	65	410	0
Turn Type	Prot			Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						
Total Split (s)	8.5	20.5	0.0	8.5	20.5	20.5	9.9	52.0	0.0	9.0	51.1	0.0
Act Effct Green (s)	5.1	8.6		5.1	8.6	8.6	6.6	57.4		5.7	59.1	
Actuated g/C Ratio	0.06	0.10		0.06	0.10	0.10	0.08	0.74		0.07	0.76	
v/c Ratio	0.49	0.32		0.39	0.17	0.29	0.24	0.61		0.53	0.30	
Control Delay	51.4	23.2		46.3	33.5	13.0	39.8	12.8		51.4	7.2	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	51.4	23.2		46.3	33.5	13.0	39.8	12.8		51.4	7.2	
LOS	D	C		D	C	B	D	B		D	A	
Approach Delay		35.9			28.0			13.8			13.2	
Approach LOS		D			C			B			B	

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 78
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.61
Intersection Signal Delay: 16.6 — Intersection LOS: B
Intersection Capacity Utilization 63.2% — ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 67: Lone Star Rd & Alta Rd.



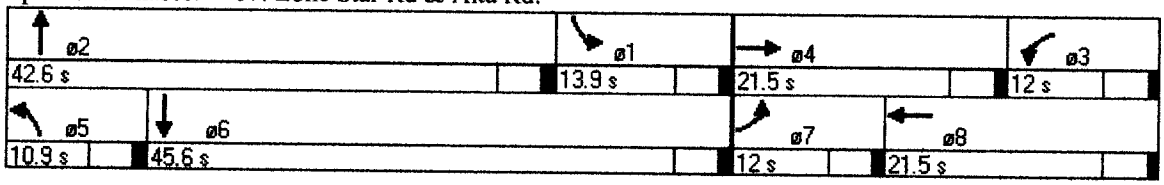
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.925				0.850		0.984			0.985	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1723	0	1770	1863	1583	1770	1833	0	1770	1835	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1723	0	1770	1863	1583	1770	1833	0	1770	1835	0
Satd. Flow (RTOR)		33				65		8			8	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	50	30	30	50	30	60	30	410	50	60	446	50
Adj. Flow (vph)	54	33	33	54	33	65	33	446	54	65	485	54
Lane Group Flow (vph)	54	66	0	54	33	65	33	500	0	65	539	0
Turn Type	Prot			Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						
Total Split (s)	12.0	21.5	0.0	12.0	21.5	21.5	10.9	42.6	0.0	13.9	45.6	0.0
Act Effct Green (s)	8.3	8.7		8.3	8.7	8.7	7.6	45.6		9.2	49.6	
Actuated g/C Ratio	0.11	0.12		0.11	0.12	0.12	0.10	0.64		0.12	0.69	
v/c Ratio	0.28	0.29		0.28	0.15	0.27	0.19	0.43		0.30	0.42	
Control Delay	31.9	20.6		31.9	29.6	11.9	33.8	14.2		30.3	11.4	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	31.9	20.6		31.9	29.6	11.9	33.8	14.2		30.3	11.4	
LOS	C	C		C	C	B	C	B		C	B	
Approach Delay		25.7			22.8			15.4			13.4	
Approach LOS		C			C			B			B	

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 71.5
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.43
Intersection Signal Delay: 16.2
Intersection Capacity Utilization 49.3%
Analysis Period (min) 15

Intersection LOS: B
ICU Level of Service A

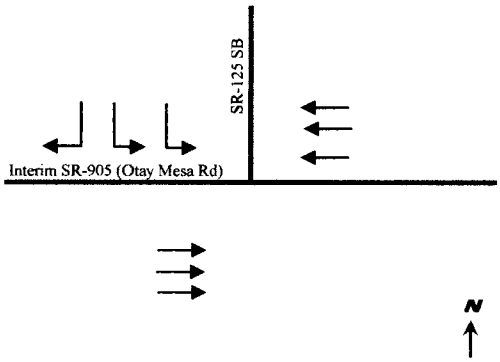
Splits and Phases: 67: Lone Star Rd & Alta Rd.



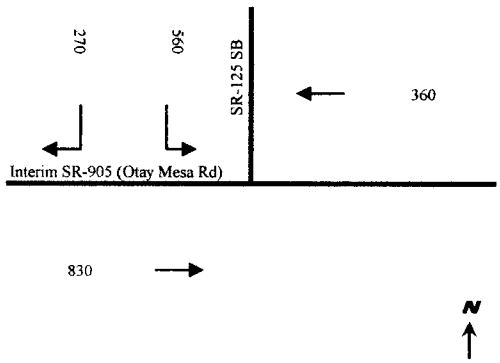
Cumulative + Project - Intersection ILV Analysis

Date of Analysis:	March 19, 2011	Intersection:	Otay Mesa Rd @SR-125 SB
Analyst:	*VSH*	Peak Hour Analyzed:	AM Peak Hour
Condition Analyzed:	Cumulative (2020) + Phases 1-2		

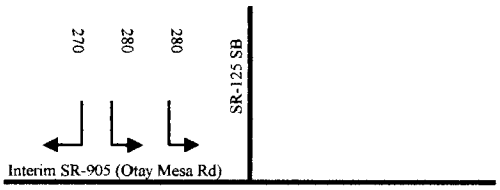
LANE GEOMETRY



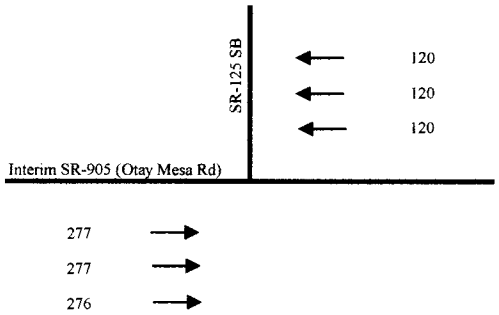
TRAFFIC VOLUMES



PHASE 1



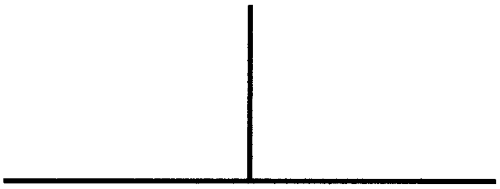
PHASE 2



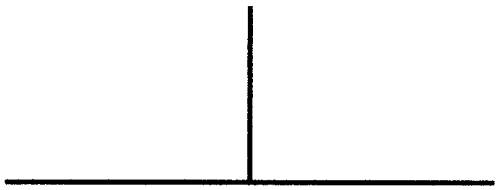
Phase 1 Critical ILV: 280

Phase 2 Critical ILV: 277

PHASE 3



PHASE 4



Phase 3 Critical ILV:

Phase 4 Critical ILV:

GRAND TOTAL ILV: 557

OPERATING CONDITION STABLE

LEGEND

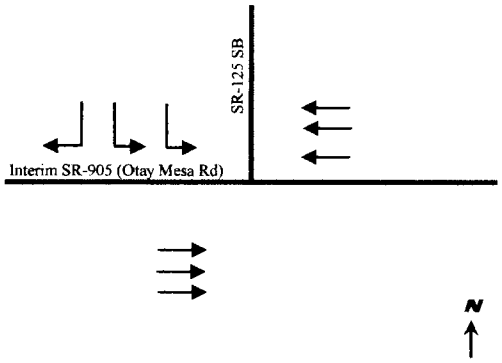
<1200 ILV = STABLE FLOW

1200 - 1500 ILV/HR = UNSTABLE FLOW

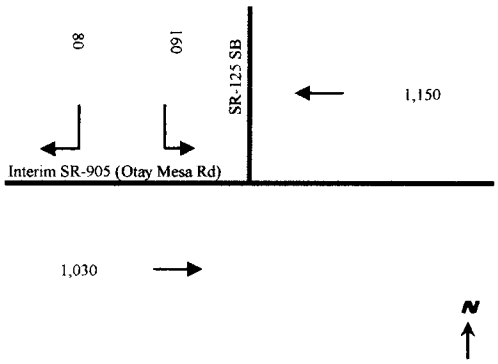
> 1500 ILV/HR = OVER CAPACITY

Date of Analysis:	March 19, 2011	Intersection:	Otay Mesa Rd @SR-125 SB
Analyst:	VSH	Peak Hour Analyzed:	PM Peak Hour
Condition Analyzed:	Cumulative (2020) + Phases 1-2		

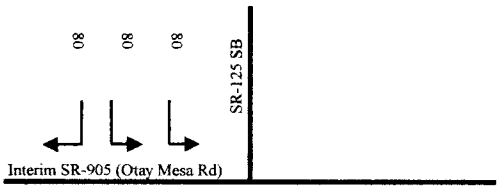
LANE GEOMETRY



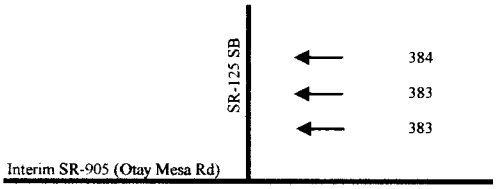
TRAFFIC VOLUMES



PHASE 1



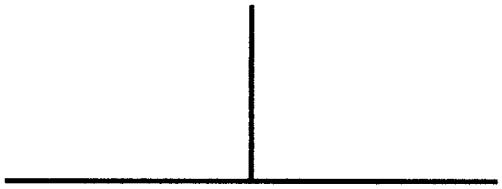
PHASE 2



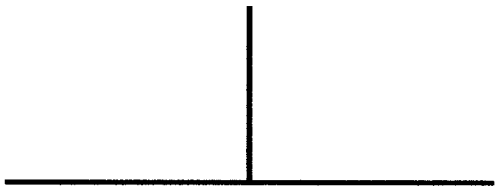
Phase 1 Critical ILV: 80

Phase 2 Critical ILV: 384

PHASE 3



PHASE 4



Phase 3 Critical ILV:

Phase 4 Critical ILV:

GRAND TOTAL ILV: 464

OPERATING CONDITION STABLE

LEGEND

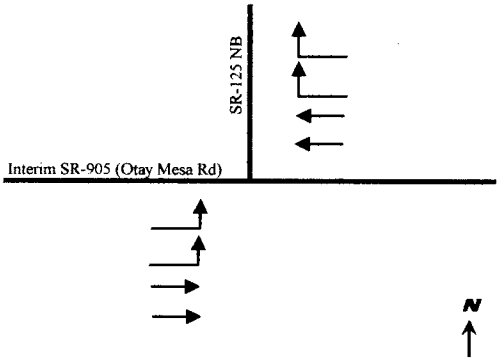
<1200 ILV = STABLE FLOW

1200 - 1500 ILV/HR = UNSTABLE FLOW

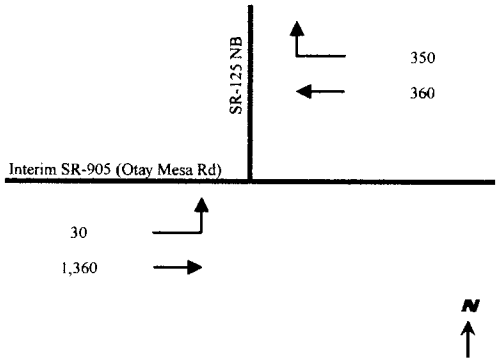
> 1500 ILV/HR = OVER CAPACITY

Date of Analysis:	March 19, 2011	Intersection:	Otay Mesa Rd @ SR-125 NB
Analyst:	*USH*	Peak Hour Analyzed:	AM Peak Hour
Condition Analyzed:	Cumulative (2020) + Phases 1-2		

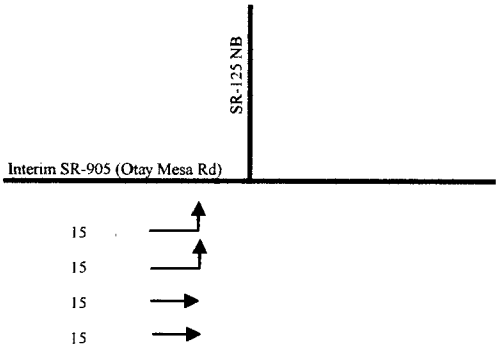
LANE GEOMETRY



TRAFFIC VOLUMES

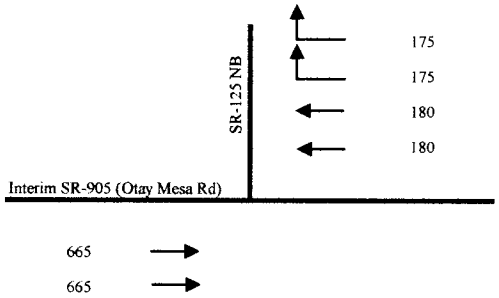


PHASE 1



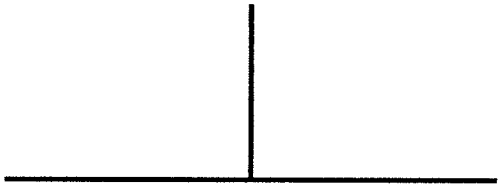
Phase 1 Critical ILV: 15

PHASE 2

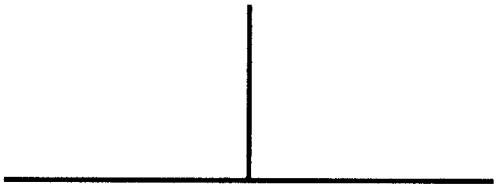


Phase 2 Critical ILV: 665

PHASE 3



PHASE 4



Phase 3 Critical ILV:

Phase 4 Critical ILV:

GRAND TOTAL ILV: 680

OPERATING CONDITION STABLE

LEGEND

<1200 ILV = STABLE FLOW

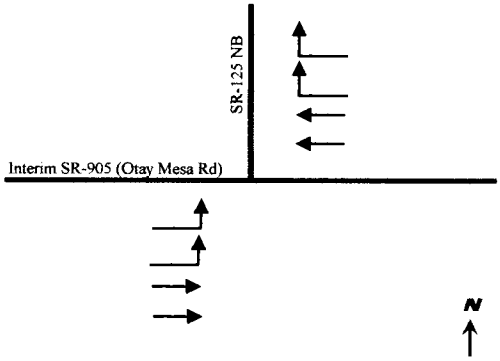
1200 - 1500 ILV/HR = UNSTABLE FLOW

> 1500 ILV/HR = OVER CAPACITY

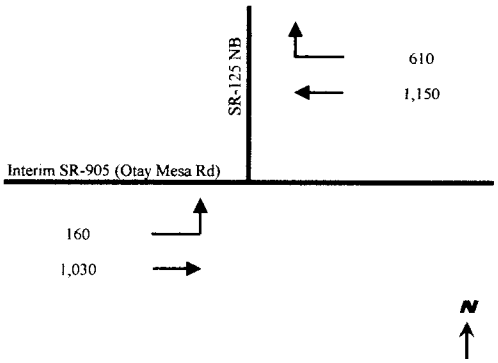
Date of Analysis:	March 19, 2011
Analyst:	RSH
Condition Analyzed:	Cumulative (2020) + Phases 1-2

Intersection:	Otay Mesa Rd @ SR-125 NB
Peak Hour Analyzed:	PM Peak Hour

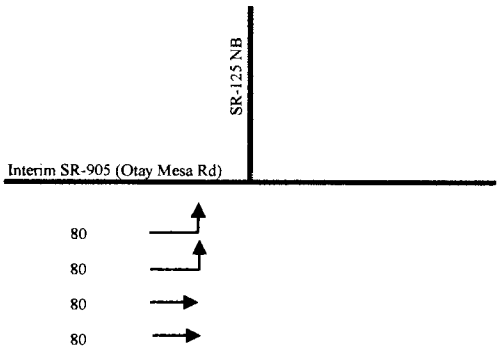
LANE GEOMETRY



TRAFFIC VOLUMES

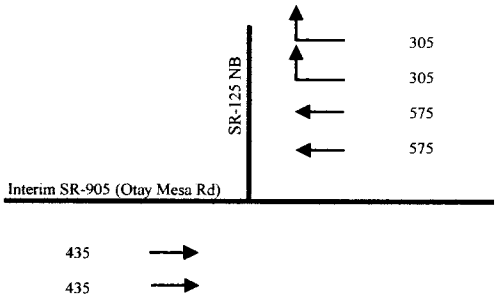


PHASE 1



Phase 1 Critical ILV: 80

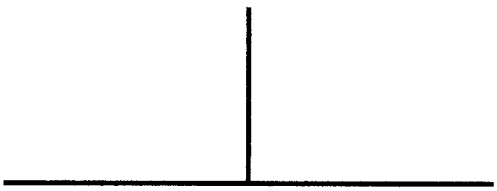
PHASE 2



Phase 2 Critical ILV: 575

PHASE 3

PHASE 4



Phase 3 Critical ILV:

Phase 4 Critical ILV:

GRAND TOTAL ILV: 655

OPERATING CONDITION STABLE

LEGEND

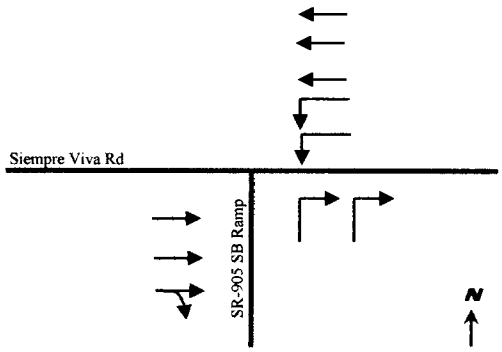
<1200 ILV = STABLE FLOW

1200 - 1500 ILV/HR = UNSTABLE FLOW

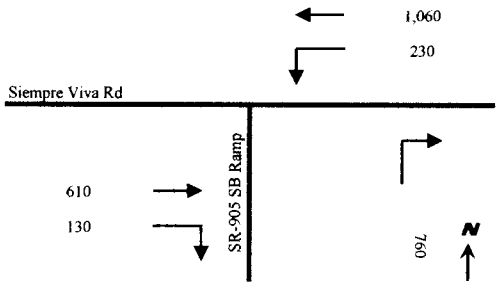
> 1500 ILV/HR = OVER CAPACITY

Date of Analysis:	March 19, 2011	Intersection:	Siempre Viva Rd @ SR-905 SB Ramp
Analyst:	*USH*	Peak Hour Analyzed:	AM Peak Hour
Condition Analyzed:	Cumulative (2020) + Phases 1-2		

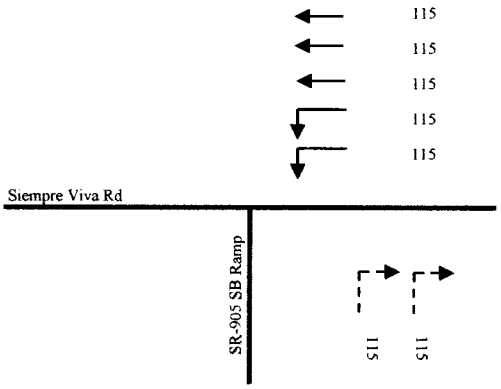
LANE GEOMETRY



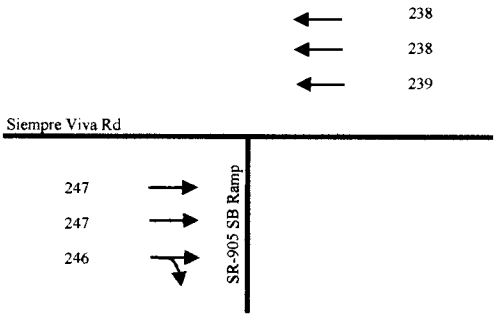
TRAFFIC VOLUMES



PHASE 1



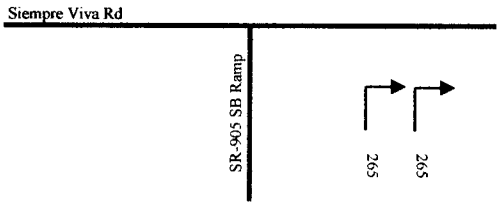
PHASE 2



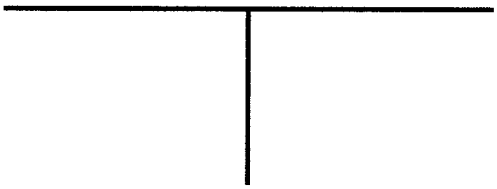
Phase 1 Critical ILV: 115

Phase 2 Critical ILV: 247

PHASE 3



PHASE 4



Phase 3 Critical ILV: 265

Phase 4 Critical ILV:

GRAND TOTAL ILV: 627

OPERATING CONDITION STABLE

LEGEND

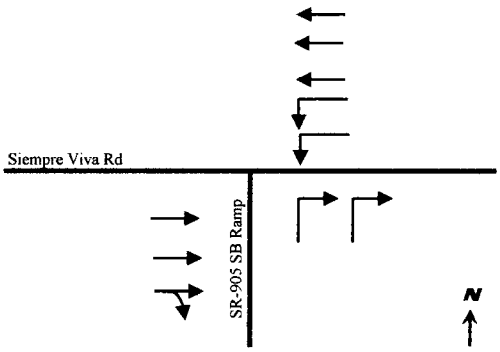
<1200 ILV = STABLE FLOW

1200 - 1500 ILV/HR = UNSTABLE FLOW

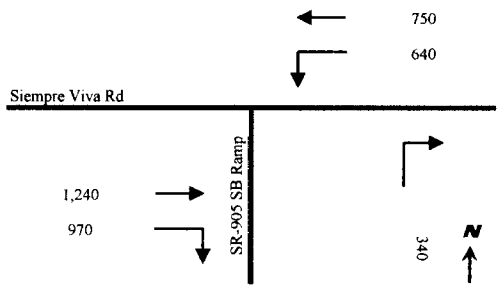
> 1500 ILV/HR = OVER CAPACITY

Date of Analysis:	March 19, 2011	Intersection:	Siempre Viva Rd @ SR-905 SB Ramp
Analyst:	*VSH*	Peak Hour Analyzed:	PM Peak Hour
Condition Analyzed:	Cumulative (2020) + Phases 1-2		

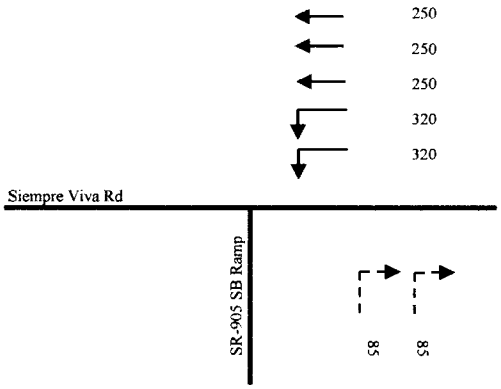
LANE GEOMETRY



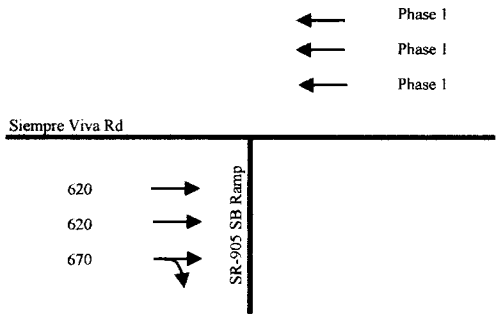
TRAFFIC VOLUMES



PHASE 1



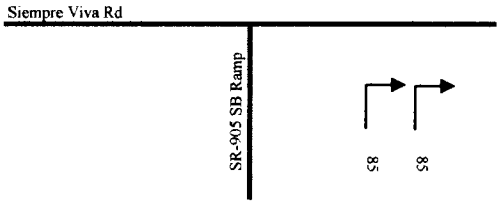
PHASE 2



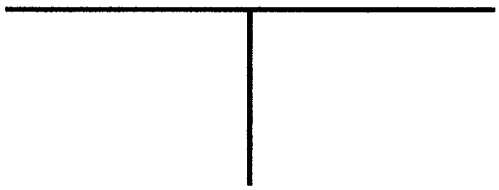
Phase 1 Critical ILV: 320

Phase 2 Critical ILV: 670

PHASE 3



PHASE 4



Phase 3 Critical ILV: 85

Phase 4 Critical ILV:

GRAND TOTAL ILV: **1,075**

OPERATING CONDITION **STABLE**

LEGEND

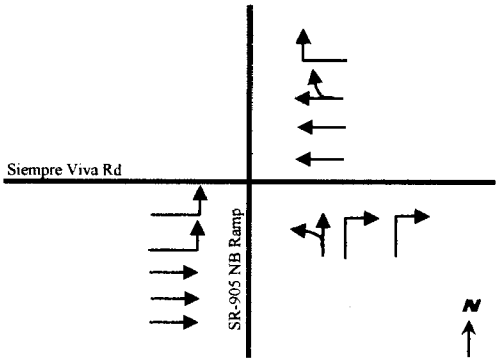
<1200 ILV = STABLE FLOW

1200 - 1500 ILV/HR = UNSTABLE FLOW

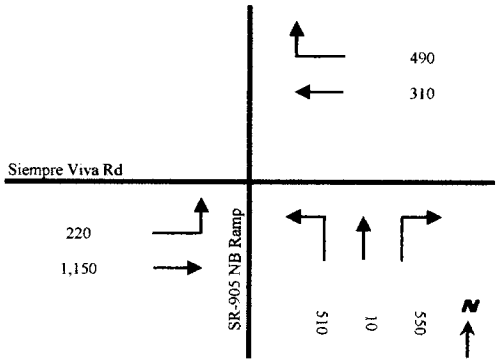
> 1500 ILV/HR = OVER CAPACITY

Date of Analysis:	March 19, 2011	Intersection:	Siempre Viva Rd & SR-905 NB
Analyst:	VJH	Peak Hour Analyzed:	AM Peak Hour
Condition Analyzed:	Cumulative (2020) + Phases 1-2		

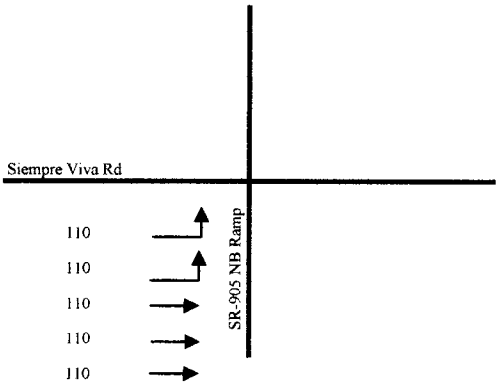
LANE GEOMETRY



TRAFFIC VOLUMES

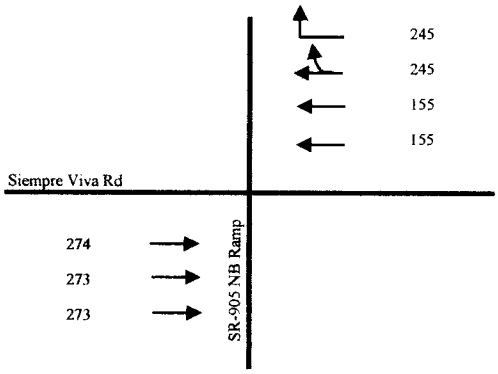


PHASE 1



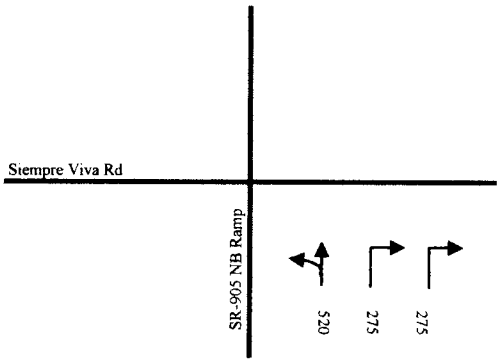
Phase 1 Critical ILV: 110

PHASE 2



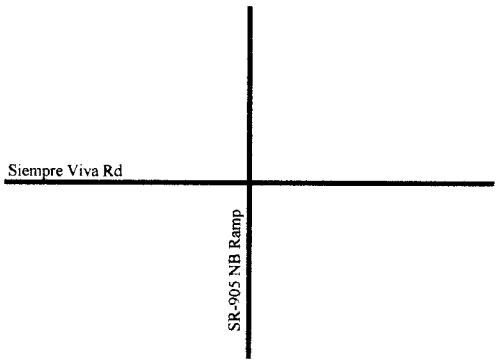
Phase 2 Critical ILV: 274

PHASE 3



Phase 3 Critical ILV: 520

PHASE 4



Phase 4 Critical ILV:

GRAND TOTAL ILV: 904

OPERATING CONDITION STABLE

LEGEND

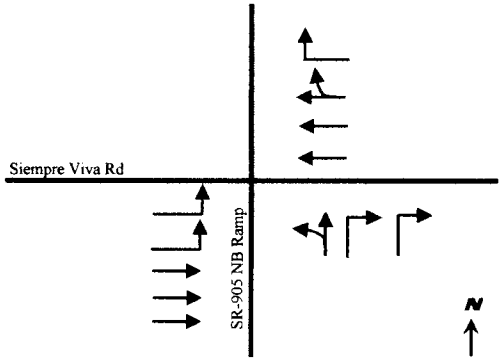
<1200 ILV = STABLE FLOW

1200 - 1500 ILV/HR = UNSTABLE FLOW

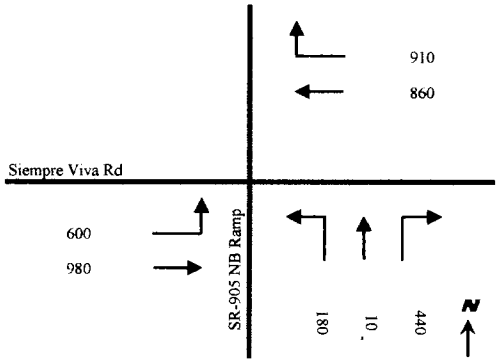
> 1500 ILV/HR = OVER CAPACITY

Date of Analysis:	March 19, 2011	Intersection:	Siempre Viva Rd & SR-905 NB
Analyst:	*TSH*	Peak Hour Analyzed:	PM Peak Hour
Condition Analyzed:	Cumulative (2020) + Phases 1-2		

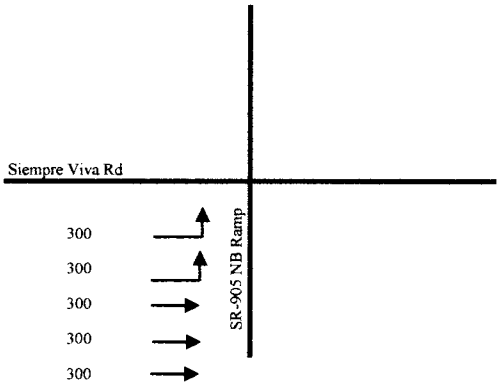
LANE GEOMETRY



TRAFFIC VOLUMES

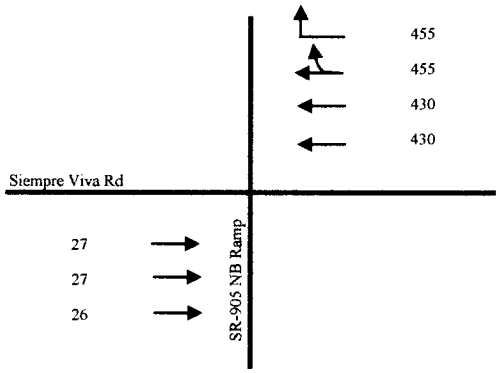


PHASE 1



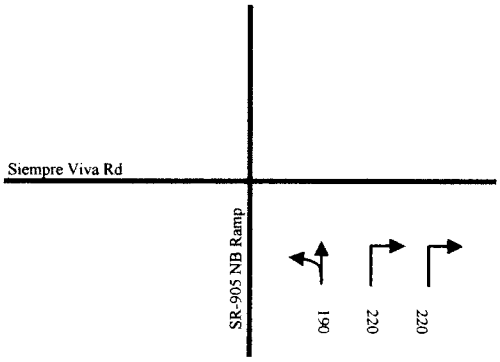
Phase 1 Critical ILV: 300

PHASE 2



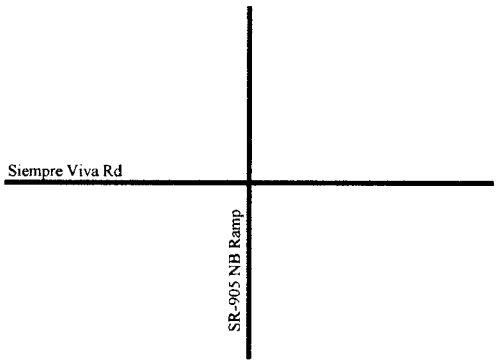
Phase 2 Critical ILV: 455

PHASE 3



Phase 3 Critical ILV: 220

PHASE 4



Phase 4 Critical ILV:

GRAND TOTAL ILV: 975

OPERATING CONDITION STABLE

LEGEND

<1200 ILV = STABLE FLOW

1200 - 1500 ILV/HR = UNSTABLE FLOW

> 1500 ILV/HR = OVER CAPACITY

Cumulative + Project – Queuing Summaries

Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	988	429	667	321
v/c Ratio	0.29	0.13	0.76	0.50
Control Delay	3.9	5.1	38.7	6.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	3.9	5.1	38.7	6.0
Queue Length 50th (ft)	28	16	195	1
Queue Length 95th (ft)	45	41	209	44
Internal Link Dist (ft)	1486	570	1201	
Turn Bay Length (ft)				
Base Capacity (vph)	3366	3366	1598	907
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.29	0.13	0.42	0.35

Intersection Summary

Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	1157	1292	180	90
v/c Ratio	0.28	0.31	0.51	0.45
Control Delay	1.3	0.8	47.2	31.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	1.3	0.8	47.2	31.3
Queue Length 50th (ft)	24	10	56	29
Queue Length 95th (ft)	28	29	87	75
Internal Link Dist (ft)	1486	570	1201	
Turn Bay Length (ft)				
Base Capacity (vph)	4152	4152	1322	635
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.28	0.31	0.14	0.14

Intersection Summary

Lane Group	EBL	EBT	WBT	WBR
Lane Group Flow (vph)	37	1679	444	432
v/c Ratio	0.15	0.47	0.13	0.16
Control Delay	39.5	0.5	0.6	0.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	39.5	0.5	0.6	0.3
Queue Length 50th (ft)	11	0	0	0
Queue Length 95th (ft)	m19	0	4	0
Internal Link Dist (ft)		570	270	
Turn Bay Length (ft)	430			310
Base Capacity (vph)	805	3539	3312	2636
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.05	0.47	0.13	0.16

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	WBR
Lane Group Flow (vph)	178	1144	1278	678
v/c Ratio	0.51	0.32	0.44	0.28
Control Delay	41.9	0.3	2.8	0.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	41.9	0.3	2.8	0.6
Queue Length 50th (ft)	60	0	84	5
Queue Length 95th (ft)	88	0	m172	m16
Internal Link Dist (ft)		570	270	
Turn Bay Length (ft)	430			310
Base Capacity (vph)	958	3539	2896	2404
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.19	0.32	0.44	0.28

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	398	1241	12	722	36	72	289
v/c Ratio	0.68	0.45	0.09	0.35	0.19	0.47	0.27
Control Delay	44.9	4.9	28.7	4.1	30.1	43.9	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.9	4.9	28.7	4.1	30.1	43.9	5.1
Queue Length 50th (ft)	110	24	7	4	14	42	13
Queue Length 95th (ft)	143	249	m10	110	37	78	55
Internal Link Dist (ft)		230		1003	291	511	
Turn Bay Length (ft)			50				
Base Capacity (vph)	919	2739	230	2078	342	289	1314
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.45	0.05	0.35	0.11	0.25	0.22

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	851	333	11	1333	33	236	1080
v/c Ratio	0.93	0.13	0.14	0.91	0.10	0.91	0.76
Control Delay	63.8	4.1	43.1	28.0	25.4	69.3	19.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.8	4.1	43.1	28.0	25.4	69.3	19.1
Queue Length 50th (ft)	279	21	6	325	12	148	304
Queue Length 95th (ft)	#387	51	m8	m384	36	m#231	400
Internal Link Dist (ft)		230		1003	291	511	
Turn Bay Length (ft)			50				
Base Capacity (vph)	911	2497	80	1463	325	265	1425
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.93	0.13	0.14	0.91	0.10	0.89	0.76

Intersection Summary

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	25	1308	111	346	299	306	25	197
v/c Ratio	0.22	0.99	0.75	0.40	0.82	0.81	0.09	0.70
Control Delay	51.8	45.7	67.1	15.6	53.7	51.1	34.4	51.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.8	45.7	67.1	15.6	53.7	51.1	34.4	51.2
Queue Length 50th (ft)	16	~458	69	104	180	176	13	112
Queue Length 95th (ft)	m29	#515	m#130	196	238	235	32	161
Internal Link Dist (ft)		1003		1090		2620		1662
Turn Bay Length (ft)	180		180				150	
Base Capacity (vph)	114	1327	148	860	420	431	313	329
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.99	0.75	0.40	0.71	0.71	0.08	0.60

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	11	506	55	747	386	394	22	165
v/c Ratio	0.11	0.53	0.21	0.96	0.75	0.75	0.09	0.65
Control Delay	55.1	31.6	37.7	54.8	42.9	41.6	37.0	50.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.1	31.6	37.7	54.8	42.9	41.6	37.0	50.7
Queue Length 50th (ft)	7	146	31	~513	216	213	12	96
Queue Length 95th (ft)	m20	m178	63	#742	#462	#462	34	161
Internal Link Dist (ft)		1003		1090		2620		1662
Turn Bay Length (ft)	180		180				150	
Base Capacity (vph)	97	1133	311	777	515	523	292	307
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.45	0.18	0.96	0.75	0.75	0.08	0.54

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	96	1055	329	383	164	479	27	54
v/c Ratio	0.52	1.11	1.12	0.34	0.65	1.14	0.35	0.16
Control Delay	41.5	79.5	125.8	11.2	42.2	112.5	47.8	20.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.5	79.5	125.8	11.2	42.2	112.5	47.8	20.9
Queue Length 50th (ft)	61	~758	~232	115	92	~279	14	14
Queue Length 95th (ft)	m70	#695	#290	131	75	#303	34	34
Internal Link Dist (ft)		1250		2512		2644		1233
Turn Bay Length (ft)	150		90		175		175	
Base Capacity (vph)	203	954	295	1115	252	419	78	345
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	1.11	1.12	0.34	0.65	1.14	0.35	0.16

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	24	583	238	524	190	322	24	190
v/c Ratio	0.25	0.92	0.75	0.54	0.53	0.42	0.11	0.29
Control Delay	52.7	51.6	54.3	17.8	28.6	4.8	28.0	22.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.7	51.6	54.3	17.8	28.6	4.8	28.0	22.5
Queue Length 50th (ft)	15	340	148	178	111	83	11	72
Queue Length 95th (ft)	39	431	206	266	183	2	31	128
Internal Link Dist (ft)		1250		2512		2644		1233
Turn Bay Length (ft)	150		90		175		175	
Base Capacity (vph)	97	703	382	1026	357	761	222	646
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.83	0.62	0.51	0.53	0.42	0.11	0.29

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	72	94	98	84	48	84	205	457	157	470
v/c Ratio	0.32	0.48	0.39	0.47	0.32	0.41	0.56	0.26	0.65	0.31
Control Delay	39.8	45.1	12.8	47.1	43.2	13.6	41.1	14.8	36.4	14.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.8	45.1	12.8	47.1	43.2	13.6	41.1	14.8	36.4	14.8
Queue Length 50th (ft)	40	53	0	50	28	4	123	76	73	80
Queue Length 95th (ft)	70	92	37	87	m56	34	176	149	m93	m125
Internal Link Dist (ft)		1264			1283			504		2644
Turn Bay Length (ft)	175			200			200		200	
Base Capacity (vph)	266	376	398	258	417	420	430	1749	369	1529
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.25	0.25	0.33	0.12	0.20	0.48	0.26	0.43	0.31

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	61	49	49	85	85	122	232	500	85	390
v/c Ratio	0.39	0.33	0.28	0.49	0.49	0.47	0.69	0.24	0.48	0.23
Control Delay	50.2	49.1	16.8	53.6	53.0	14.5	42.1	12.5	64.2	11.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.2	49.1	16.8	53.6	53.0	14.5	42.1	12.5	64.2	11.0
Queue Length 50th (ft)	38	32	0	53	54	1	120	84	55	34
Queue Length 95th (ft)	69	63	30	90	91	43	159	140	m74	m129
Internal Link Dist (ft)		1264			1283			504		2644
Turn Bay Length (ft)	175			200			200		200	
Base Capacity (vph)	243	373	356	260	411	444	482	2072	260	1705
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.13	0.14	0.33	0.21	0.27	0.48	0.24	0.33	0.23

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	43	413	130	848	33	33	141
v/c Ratio	0.26	0.16	0.59	0.29	0.25	0.23	0.62
Control Delay	43.4	13.2	45.4	10.7	45.9	25.7	42.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.4	13.2	45.4	10.7	45.9	25.7	42.4
Queue Length 50th (ft)	24	43	76	112	19	6	65
Queue Length 95th (ft)	57	79	131	148	48	35	120
Internal Link Dist (ft)		3986		1160		879	785
Turn Bay Length (ft)	270		200		300		
Base Capacity (vph)	203	2580	332	2947	387	384	400
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.16	0.39	0.29	0.09	0.09	0.35

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	99	791	176	978	55	55	209
v/c Ratio	0.39	0.61	0.56	0.66	0.24	0.22	0.58
Control Delay	34.5	24.4	34.4	21.7	34.4	16.7	32.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.5	24.4	34.4	21.7	34.4	16.7	32.2
Queue Length 50th (ft)	35	95	62	109	20	4	70
Queue Length 95th (ft)	100	187	154	209	66	40	172
Internal Link Dist (ft)		3986		1160		879	785
Turn Bay Length (ft)	270		200		300		
Base Capacity (vph)	392	1752	517	2058	485	481	588
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.45	0.34	0.48	0.11	0.11	0.36

Intersection Summary

Lane Group	EBT	WBL	WBT	NBR
Lane Group Flow (vph)	804	250	1152	826
v/c Ratio	0.28	0.22	0.23	0.78
Control Delay	8.0	18.7	0.1	26.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	8.0	18.7	0.1	26.6
Queue Length 50th (ft)	54	50	0	199
Queue Length 95th (ft)	80	m56	0	236
Internal Link Dist (ft)	1277		201	
Turn Bay Length (ft)		200		
Base Capacity (vph)	2892	1860	5085	1594
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.28	0.13	0.23	0.52

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBL	WBT	NBR
Lane Group Flow (vph)	1949	653	765	347
v/c Ratio	0.61	0.72	0.15	0.43
Control Delay	11.3	26.2	0.1	22.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	11.3	26.2	0.1	22.6
Queue Length 50th (ft)	221	170	0	75
Queue Length 95th (ft)	343	222	0	107
Internal Link Dist (ft)	1277		201	
Turn Bay Length (ft)		200		
Base Capacity (vph)	3199	1212	5085	1047
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.61	0.54	0.15	0.33

Intersection Summary

Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	229	1198	578	255	541	573
v/c Ratio	0.56	0.43	0.31	0.37	0.84	0.55
Control Delay	41.9	14.0	1.8	2.0	39.2	23.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.9	14.0	1.8	2.0	39.2	23.0
Queue Length 50th (ft)	70	130	0	0	296	140
Queue Length 95th (ft)	m93	184	34	m27	357	161
Internal Link Dist (ft)		653	897		1340	
Turn Bay Length (ft)	250			200		200
Base Capacity (vph)	501	2809	1881	689	838	1342
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.43	0.31	0.37	0.65	0.43

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	638	1043	1345	538	202	468
v/c Ratio	0.83	0.27	0.58	0.59	0.69	0.67
Control Delay	43.5	1.5	2.5	1.8	52.1	19.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.5	1.5	2.5	1.8	52.1	19.6
Queue Length 50th (ft)	198	15	21	0	124	59
Queue Length 95th (ft)	250	20	m71	m11	195	115
Internal Link Dist (ft)		653	897		1340	
Turn Bay Length (ft)	250			200		200
Base Capacity (vph)	909	3849	2331	906	356	787
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.27	0.58	0.59	0.57	0.59

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	564	702	191	21	532	160	74	21	96	309
v/c Ratio	0.80	0.22	0.18	0.20	0.65	0.68	0.26	0.14	0.44	0.77
Control Delay	30.7	7.3	1.6	50.0	25.2	54.4	43.1	19.0	45.8	32.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.7	7.3	1.6	50.0	25.2	54.4	43.1	19.0	45.8	32.1
Queue Length 50th (ft)	299	54	6	13	118	93	22	0	54	41
Queue Length 95th (ft)	#476	83	17	m31	160	159	44	22	m106	#100
Internal Link Dist (ft)		897			1196		812			1210
Turn Bay Length (ft)	250		120	325		475			250	
Base Capacity (vph)	701	3211	1070	105	823	262	350	176	226	403
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.80	0.22	0.18	0.20	0.65	0.61	0.21	0.12	0.42	0.77

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	653	439	102	51	1225	378	204	10	20	378
v/c Ratio	1.05	0.14	0.07	0.46	0.95	1.04	0.23	0.02	0.21	0.96
Control Delay	80.6	8.7	0.7	63.3	45.5	101.3	34.1	11.6	51.6	56.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	80.6	8.7	0.7	63.3	45.5	101.3	34.1	11.6	51.6	56.7
Queue Length 50th (ft)	~471	36	0	33	423	~269	54	0	13	50
Queue Length 95th (ft)	#682	54	m11	m61	#533	#450	96	11	m37	#144
Internal Link Dist (ft)		897			1196		812			1210
Turn Bay Length (ft)	250		120	325		475			250	
Base Capacity (vph)	623	3174	1377	112	1283	362	876	540	94	393
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.05	0.14	0.07	0.46	0.95	1.04	0.23	0.02	0.21	0.96

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	325	554	48	289	133	217	60	229
v/c Ratio	0.28	0.53	0.32	0.30	0.58	0.39	0.31	0.49
Control Delay	20.8	16.1	46.4	28.5	49.0	33.8	39.0	15.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.8	16.1	46.4	28.5	49.0	33.8	39.0	15.9
Queue Length 50th (ft)	70	237	28	74	78	55	18	0
Queue Length 95th (ft)	105	379	m57	98	118	81	67	48
Internal Link Dist (ft)		1230		1296		877		525
Turn Bay Length (ft)	180		180		250		200	
Base Capacity (vph)	1147	1061	152	1348	272	776	218	676
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.52	0.32	0.21	0.49	0.28	0.28	0.34

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	176	165	44	604	308	308	99	396
v/c Ratio	0.53	0.18	0.32	0.40	0.80	0.39	0.54	0.68
Control Delay	41.4	13.3	49.4	22.3	52.7	32.5	45.4	12.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.4	13.3	49.4	22.3	52.7	32.5	45.4	12.0
Queue Length 50th (ft)	50	30	28	135	192	87	62	26
Queue Length 95th (ft)	82	125	m61	222	261	114	109	36
Internal Link Dist (ft)		1230		1296		877		525
Turn Bay Length (ft)	180		180		250		200	
Base Capacity (vph)	373	902	153	1523	522	1168	243	818
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.18	0.29	0.40	0.59	0.26	0.41	0.48

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	54	66	43	33	65	33	824	65	410
v/c Ratio	0.49	0.32	0.39	0.17	0.29	0.24	0.61	0.53	0.30
Control Delay	51.4	23.2	46.3	33.5	13.0	39.8	12.8	51.4	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.4	23.2	46.3	33.5	13.0	39.8	12.8	51.4	7.2
Queue Length 50th (ft)	23	13	18	13	0	14	275	28	62
Queue Length 95th (ft)	#81	52	#61	42	35	46	478	#94	171
Internal Link Dist (ft)		2484		671			522		620
Turn Bay Length (ft)						150		150	
Base Capacity (vph)	111	369	111	371	367	140	1379	123	1384
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.18	0.39	0.09	0.18	0.24	0.60	0.53	0.30

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	54	66	54	33	65	33	500	65	539
v/c Ratio	0.28	0.29	0.28	0.15	0.27	0.19	0.43	0.30	0.42
Control Delay	31.9	20.6	31.9	29.6	11.9	33.8	14.2	30.3	11.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.9	20.6	31.9	29.6	11.9	33.8	14.2	30.3	11.4
Queue Length 50th (ft)	18	11	18	11	0	11	154	22	108
Queue Length 95th (ft)	60	50	60	40	34	42	280	67	286
Internal Link Dist (ft)		2484		671			522		620
Turn Bay Length (ft)						150		150	
Base Capacity (vph)	215	421	215	428	414	181	1264	260	1332
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.16	0.25	0.08	0.16	0.18	0.40	0.25	0.40

Intersection Summary

APPENDIX H

- Existing + Project Phase 1 - Internal Int. Analysis
- Existing + Project Phases 1-2 - Internal Int. Analysis
- Cum. w/SR-905 Ph. 1A&1B + Project Build Out (Phases 1-2) - Internal Int. Analysis
- Buildout + Project Phases 1-2 - Internal Int. Analysis

Existing + Project Phase 1 - Internal Int. Analysis

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	93	0	160	33	119	386
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	101	0	174	36	129	420
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	210				394	192
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	210				394	192
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	93				77	51
cM capacity (veh/h)	1361				565	850

Direction, Lane #	EB 1	EB 2	WB 1	SB 1	SB 2
Volume Total	101	0	210	129	420
Volume Left	101	0	0	129	0
Volume Right	0	0	36	0	420
cSH	1361	1700	1700	565	850
Volume to Capacity	0.07	0.00	0.12	0.23	0.49
Queue Length 95th (ft)	6	0	0	22	70
Control Delay (s)	7.9	0.0	0.0	13.2	13.3
Lane LOS	A			B	B
Approach Delay (s)	7.9		0.0	13.3	
Approach LOS				B	

Intersection Summary			
Average Delay	9.4		
Intersection Capacity Utilization	41.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	372	0	40	133	30	96
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	396	0	43	141	32	102
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	184				905	113
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	184				905	113
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	72				85	89
cM capacity (veh/h)	1391				220	939

Direction, Lane #	EB 1	EB 2	WB 1	SB 1	SB 2
Volume Total	396	0	184	32	102
Volume Left	396	0	0	32	0
Volume Right	0	0	141	0	102
cSH	1391	1700	1700	220	939
Volume to Capacity	0.28	0.00	0.11	0.15	0.11
Queue Length 95th (ft)	30	0	0	12	9
Control Delay (s)	8.6	0.0	0.0	24.2	9.3
Lane LOS	A			C	A
Approach Delay (s)	8.6		0.0	12.8	
Approach LOS				B	

Intersection Summary			
Average Delay	7.2		
Intersection Capacity Utilization	44.2%	ICU Level of Service	A
Analysis Period (min)	15		

Existing + Project Phases 1-2 - Internal Int. Analysis

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	393	157	78	118	29	98
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	418	167	83	126	31	104
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	209				1065	104
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	209				1065	104
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	69				80	89
cM capacity (veh/h)	1360				151	930

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1	SB 2
Volume Total	418	84	84	55	153	31	104
Volume Left	418	0	0	0	0	31	0
Volume Right	0	0	0	0	126	0	104
cSH	1360	1700	1700	1700	1700	151	930
Volume to Capacity	0.31	0.05	0.05	0.03	0.09	0.20	0.11
Queue Length 95th (ft)	33	0	0	0	0	18	9
Control Delay (s)	8.8	0.0	0.0	0.0	0.0	35.0	9.4
Lane LOS	A					D	A
Approach Delay (s)	6.3			0.0		15.2	
Approach LOS						C	

Intersection Summary			
Average Delay	6.2		
Intersection Capacity Utilization	41.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	98	39	315	29	118	393
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	107	42	342	32	128	427
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	374				592	187
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	374				592	187
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	91				68	48
cM capacity (veh/h)	1181				398	823

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1	SB 2
Volume Total	107	21	21	228	146	128	427
Volume Left	107	0	0	0	0	128	0
Volume Right	0	0	0	0	32	0	427
cSH	1181	1700	1700	1700	1700	398	823
Volume to Capacity	0.09	0.01	0.01	0.13	0.09	0.32	0.52
Queue Length 95th (ft)	7	0	0	0	0	34	76
Control Delay (s)	8.3	0.0	0.0	0.0	0.0	18.3	14.0
Lane LOS	A					C	B
Approach Delay (s)	6.0			0.0		15.0	
Approach LOS						B	

Intersection Summary			
Average Delay	8.5		
Intersection Capacity Utilization	40.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	29	157	39	121	484	157
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	32	171	42	132	526	171
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	828	611	697			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	828	611	697			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	90	65	95			
cM capacity (veh/h)	325	493	899			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1
Volume Total	32	171	42	132	697
Volume Left	32	0	42	0	0
Volume Right	0	171	0	0	171
cSH	325	493	899	1700	1700
Volume to Capacity	0.10	0.35	0.05	0.08	0.41
Queue Length 95th (ft)	8	38	4	0	0
Control Delay (s)	17.3	16.1	9.2	0.0	0.0
Lane LOS	C	C	A		
Approach Delay (s)	16.3		2.2		0.0
Approach LOS	C				

Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	51.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	118	39	157	485	121	187
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	124	41	165	511	127	197
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1067	226	324			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1067	226	324			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	42	95	87			
cM capacity (veh/h)	213	814	1236			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1
Volume Total	124	41	165	511	324
Volume Left	124	0	165	0	0
Volume Right	0	41	0	0	197
cSH	213	814	1236	1700	1700
Volume to Capacity	0.58	0.05	0.13	0.30	0.19
Queue Length 95th (ft)	81	4	12	0	0
Control Delay (s)	43.2	9.7	8.4	0.0	0.0
Lane LOS	E	A	A		
Approach Delay (s)	34.8		2.0		0.0
Approach LOS	D				

Intersection Summary			
Average Delay	6.1		
Intersection Capacity Utilization	43.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	150	0	0	10	39	537
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	163	0	0	11	42	584
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	345	334	626			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	345	334	626			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	75	100	100			
cM capacity (veh/h)	651	708	956			

Direction, Lane #	EB 1	EB 2	NB 1	SB 1
Volume Total	163	0	11	626
Volume Left	163	0	0	0
Volume Right	0	0	0	584
cSH	651	1700	956	1700
Volume to Capacity	0.25	0.00	0.00	0.37
Queue Length 95th (ft)	25	0	0	0
Control Delay (s)	12.4	0.0	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	12.4		0.0	0.0
Approach LOS	B			

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	603	0	0	39	10	134
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	655	0	0	42	11	146
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	126	84	157			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	126	84	157			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	25	100	100			
cM capacity (veh/h)	869	976	1423			

Direction, Lane #	EB 1	EB 2	NB 1	SB 1
Volume Total	655	0	42	157
Volume Left	655	0	0	0
Volume Right	0	0	0	146
cSH	869	1700	1423	1700
Volume to Capacity	0.75	0.00	0.00	0.09
Queue Length 95th (ft)	181	0	0	0
Control Delay (s)	20.7	0.0	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	20.7		0.0	0.0
Approach LOS	C			

Intersection Summary			
Average Delay	15.9		
Intersection Capacity Utilization	48.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	33	131	288	72	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	36	142	313	78	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	455				335	299
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	455				335	299
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				88	100
cM capacity (veh/h)	1105				660	741

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	36	455	78	0
Volume Left	0	0	78	0
Volume Right	0	313	0	0
cSH	1105	1700	660	1700
Volume to Capacity	0.00	0.27	0.12	0.00
Queue Length 95th (ft)	0	0	10	0
Control Delay (s)	0.0	0.0	11.2	0.0
Lane LOS			B	A
Approach Delay (s)	0.0	0.0	11.2	
Approach LOS			B	

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	35.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	131	33	72	288	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	142	36	78	313	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	114				217	75
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	114				217	75
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				59	100
cM capacity (veh/h)	1475				771	986

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	142	114	313	0
Volume Left	0	0	313	0
Volume Right	0	78	0	0
cSH	1475	1700	771	1700
Volume to Capacity	0.00	0.07	0.41	0.00
Queue Length 95th (ft)	0	0	50	0
Control Delay (s)	0.0	0.0	12.8	0.0
Lane LOS			B	A
Approach Delay (s)	0.0	0.0	12.8	
Approach LOS			B	

Intersection Summary			
Average Delay	7.0		
Intersection Capacity Utilization	29.5%	ICU Level of Service	A
Analysis Period (min)	15		

Cum. w/SR-905 Ph. 1A&1B + Project Build Out (Phases 1-2) - Internal Int. Analysis

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	110	120	10	80	60	70
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	120	130	11	87	65	76
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			250		293	185
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			250		293	185
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		91	91
cM capacity (veh/h)			1316		692	857

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	250	98	141
Volume Left	0	11	65
Volume Right	130	0	76
cSH	1700	1316	772
Volume to Capacity	0.15	0.01	0.18
Queue Length 95th (ft)	0	1	17
Control Delay (s)	0.0	0.9	10.7
Lane LOS		A	B
Approach Delay (s)	0.0	0.9	10.7
Approach LOS			B

Intersection Summary			
Average Delay	3.3		
Intersection Capacity Utilization	27.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	80	70	30	110	80	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	87	76	33	120	87	22
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			163		310	125
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			163		310	125
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		87	98
cM capacity (veh/h)			1416		667	926

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	163	152	109
Volume Left	0	33	87
Volume Right	76	0	22
cSH	1700	1416	706
Volume to Capacity	0.10	0.02	0.15
Queue Length 95th (ft)	0	2	14
Control Delay (s)	0.0	1.8	11.0
Lane LOS		A	B
Approach Delay (s)	0.0	1.8	11.0
Approach LOS			B

Intersection Summary			
Average Delay	3.5		
Intersection Capacity Utilization	31.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	103	327	100	10	3	26
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	110	348	106	11	3	28
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	117				679	112
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	117				679	112
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	93				99	97
cM capacity (veh/h)	1471				386	941

Direction, Lane #	EB 1	EB 2	WB 1	SB 1	SB 2
Volume Total	110	348	117	3	28
Volume Left	110	0	0	3	0
Volume Right	0	0	11	0	28
cSH	1471	1700	1700	386	941
Volume to Capacity	0.07	0.20	0.07	0.01	0.03
Queue Length 95th (ft)	6	0	0	1	2
Control Delay (s)	7.6	0.0	0.0	14.4	8.9
Lane LOS	A			B	A
Approach Delay (s)	1.8		0.0	9.5	
Approach LOS				A	

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	27.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	26	90	357	3	10	104
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	28	98	388	3	11	113
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	391				544	390
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	391				544	390
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				98	83
cM capacity (veh/h)	1167				488	659

Direction, Lane #	EB 1	EB 2	WB 1	SB 1	SB 2
Volume Total	28	98	391	11	113
Volume Left	28	0	0	11	0
Volume Right	0	0	3	0	113
cSH	1167	1700	1700	488	659
Volume to Capacity	0.02	0.06	0.23	0.02	0.17
Queue Length 95th (ft)	2	0	0	2	15
Control Delay (s)	8.2	0.0	0.0	12.5	11.6
Lane LOS	A			B	B
Approach Delay (s)	1.8		0.0	11.7	
Approach LOS				B	

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	32.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	140	190	80	20	50	30
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	152	207	87	22	54	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	109				609	98
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	109				609	98
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	90				87	97
cM capacity (veh/h)	1482				411	958

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	359	109	87
Volume Left	152	0	54
Volume Right	0	22	33
cSH	1482	1700	523
Volume to Capacity	0.10	0.06	0.17
Queue Length 95th (ft)	9	0	15
Control Delay (s)	3.8	0.0	13.2
Lane LOS	A		B
Approach Delay (s)	3.8	0.0	13.2
Approach LOS			B

Intersection Summary			
Average Delay	4.5		
Intersection Capacity Utilization	35.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	50	50	290	70	10	70
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	53	53	305	74	11	74
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	379				500	342
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	379				500	342
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	96				98	89
cM capacity (veh/h)	1180				507	700

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	105	379	84
Volume Left	53	0	11
Volume Right	0	74	74
cSH	1180	1700	669
Volume to Capacity	0.04	0.22	0.13
Queue Length 95th (ft)	3	0	11
Control Delay (s)	4.3	0.0	11.2
Lane LOS	A		B
Approach Delay (s)	4.3	0.0	11.2
Approach LOS			B

Intersection Summary			
Average Delay	2.4		
Intersection Capacity Utilization	39.8%	ICU Level of Service	A
Analysis Period (min)	15		

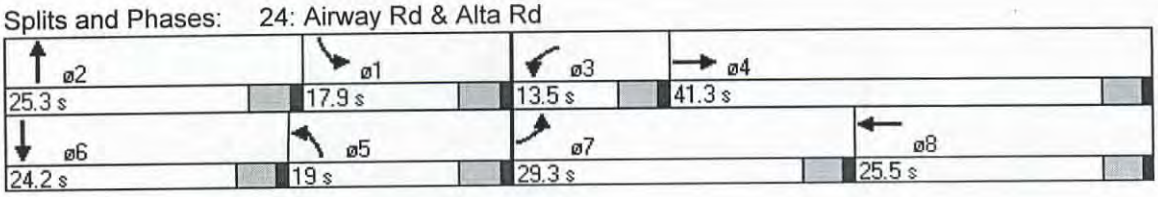
Buildout + Project Phases 1-2 - Internal Int. Analysis

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.918			0.971			0.968			0.908	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3249	0	1770	3437	0	1770	3426	0	1770	3214	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3249	0	1770	3437	0	1770	3426	0	1770	3214	0
Satd. Flow (RTOR)		289			28			14			142	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	190	218	266	12	196	48	74	48	13	55	83	131
Adj. Flow (vph)	207	237	289	13	213	52	80	52	14	60	90	142
Lane Group Flow (vph)	207	526	0	13	265	0	80	66	0	60	232	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Total Split (s)	29.3	41.3	0.0	13.5	25.5	0.0	19.0	25.3	0.0	17.9	24.2	0.0
Act Effct Green (s)	16.6	30.5		6.7	12.3		10.3	44.1		11.0	44.9	
Actuated g/C Ratio	0.17	0.31		0.07	0.13		0.11	0.45		0.11	0.46	
v/c Ratio	0.69	0.44		0.11	0.58		0.43	0.04		0.30	0.15	
Control Delay	49.8	12.3		44.4	41.0		37.0	7.5		42.4	8.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	49.8	12.3		44.4	41.0		37.0	7.5		42.4	8.8	
LOS	D	B		D	D		D	A		D	A	
Approach Delay		22.9			41.2			23.7			15.7	
Approach LOS		C			D			C			B	

Intersection Summary

Cycle Length: 98
Actuated Cycle Length: 98
Offset: 23 (23%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.69
Intersection Signal Delay: 25.0 — Intersection LOS: C
Intersection Capacity Utilization 41.9% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 24: Airway Rd & Alta Rd

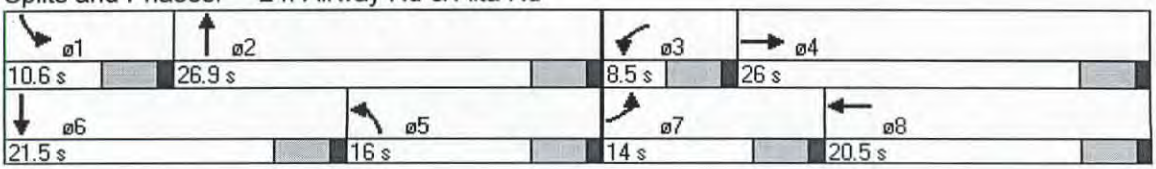


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.953			0.970			0.980			0.879	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3373	0	1770	3433	0	1770	3468	0	1770	3111	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3373	0	1770	3433	0	1770	3468	0	1770	3111	0
Satd. Flow (RTOR)		106			40			14			227	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	144	216	98	14	240	61	190	85	13	53	50	209
Adj. Flow (vph)	157	235	107	15	261	66	207	92	14	58	54	227
Lane Group Flow (vph)	157	342	0	15	327	0	207	106	0	58	281	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Total Split (s)	14.0	26.0	0.0	8.5	20.5	0.0	16.0	26.9	0.0	10.6	21.5	0.0
Act Effct Green (s)	10.2	24.0		5.4	11.6		15.2	30.7		7.7	19.0	
Actuated g/C Ratio	0.14	0.33		0.08	0.16		0.21	0.43		0.11	0.26	
v/c Ratio	0.63	0.29		0.11	0.56		0.55	0.07		0.31	0.28	
Control Delay	41.7	12.7		33.7	27.8		16.9	3.8		33.8	7.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	41.7	12.7		33.7	27.8		16.9	3.8		33.8	7.6	
LOS	D	B		C	C		B	A		C	A	
Approach Delay		21.8			28.0			12.4			12.1	
Approach LOS		C			C			B			B	

Intersection Summary

Cycle Length: 72
Actuated Cycle Length: 72
Offset: 66 (92%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.63
Intersection Signal Delay: 19.1 — Intersection LOS: B
Intersection Capacity Utilization 48.6% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 24: Airway Rd & Alta Rd

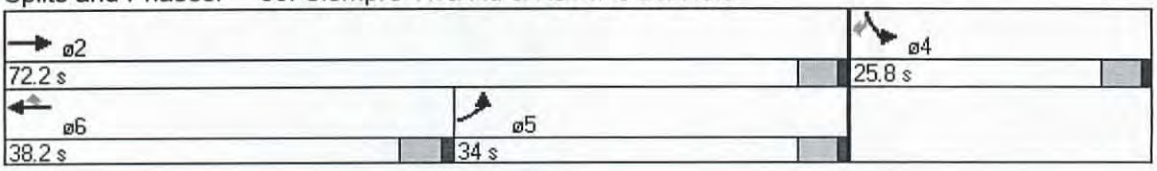


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	3539	3539	1583	1770	1583
Satd. Flow (RTOR)				276		100
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	249	1190	683	262	32	95
Adj. Flow (vph)	262	1253	719	276	34	100
Lane Group Flow (vph)	262	1253	719	276	34	100
Turn Type	Prot			Perm		Perm
Protected Phases	5	2	6		4	
Permitted Phases				6		4
Total Split (s)	34.0	72.2	38.2	38.2	25.8	25.8
Act Effct Green (s)	30.0	82.1	48.1	48.1	7.9	7.9
Actuated g/C Ratio	0.31	0.84	0.49	0.49	0.08	0.08
v/c Ratio	0.48	0.42	0.41	0.30	0.24	0.45
Control Delay	31.4	2.6	7.9	1.4	45.5	15.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.4	2.6	7.9	1.4	45.5	15.7
LOS	C	A	A	A	D	B
Approach Delay		7.6	6.1		23.3	
Approach LOS		A	A		C	

Intersection Summary

Cycle Length: 98
Actuated Cycle Length: 98
Offset: 26 (27%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.48
Intersection Signal Delay: 7.8 — Intersection LOS: A
Intersection Capacity Utilization 46.0% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 85: Siempre Viva Rd & Hawano Dr. North

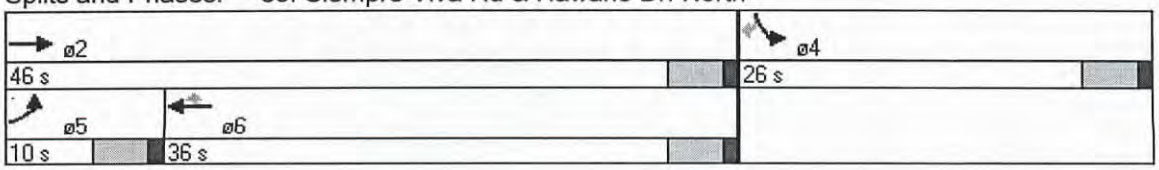


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	3539	3539	1583	931	1583
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	3539	3539	1583	931	1583
Satd. Flow (RTOR)				68		197
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	62	1029	1026	65	131	380
Adj. Flow (vph)	65	1083	1080	68	138	400
Lane Group Flow (vph)	65	1083	1080	68	138	400
Turn Type	Prot			Perm		Perm
Protected Phases	5	2	6		4	
Permitted Phases				6		4
Total Split (s)	10.0	46.0	36.0	36.0	26.0	26.0
Act Effct Green (s)	7.0	48.3	41.4	41.4	15.7	15.7
Actuated g/C Ratio	0.10	0.67	0.58	0.58	0.22	0.22
v/c Ratio	0.38	0.46	0.53	0.07	0.68	0.80
Control Delay	37.2	7.3	4.2	0.4	41.4	25.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.2	7.3	4.2	0.4	41.4	25.2
LOS	D	A	A	A	D	C
Approach Delay		9.0	3.9		29.3	
Approach LOS		A	A		C	

Intersection Summary

Cycle Length: 72
Actuated Cycle Length: 72
Offset: 3 (4%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 10.8 — Intersection LOS: B
Intersection Capacity Utilization 58.6% — ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 85: Siempre Viva Rd & Hawano Dr. North

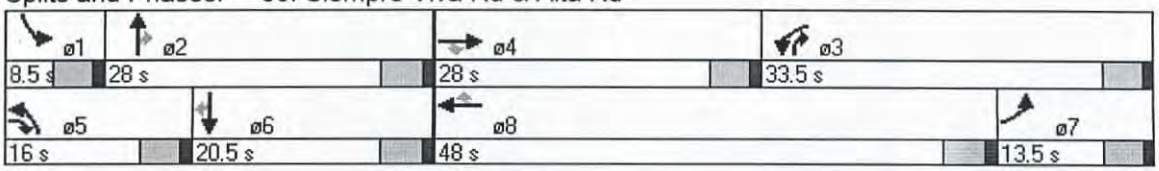


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Satd. Flow (RTOR)			152			12			36			116
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	41	987	194	222	643	11	148	86	159	50	109	107
Adj. Flow (vph)	45	1073	211	241	699	12	161	93	173	54	118	116
Lane Group Flow (vph)	45	1073	211	241	699	12	161	93	173	54	118	116
Turn Type	Prot		pm+ov	Prot		Perm	Prot		pm+ov	Prot		Perm
Protected Phases	7	4	5	3	8		5	2	3	1	6	
Permitted Phases			4			8			2			6
Total Split (s)	13.5	28.0	16.0	33.5	48.0	48.0	16.0	28.0	33.5	8.5	20.5	20.5
Act Effct Green (s)	17.1	30.7	45.1	18.5	36.4	36.4	14.4	26.3	45.6	8.6	18.4	18.4
Actuated g/C Ratio	0.17	0.31	0.46	0.19	0.37	0.37	0.15	0.27	0.47	0.09	0.19	0.19
v/c Ratio	0.15	0.97	0.26	0.72	0.53	0.02	0.62	0.10	0.23	0.35	0.18	0.30
Control Delay	29.8	51.9	3.0	49.2	28.5	12.5	49.6	30.0	8.3	53.2	29.7	6.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.8	51.9	3.0	49.2	28.5	12.5	49.6	30.0	8.3	53.2	29.7	6.4
LOS	C	D	A	D	C	B	D	C	A	D	C	A
Approach Delay		43.4			33.5			28.6			24.7	
Approach LOS		D			C			C			C	

Intersection Summary

Cycle Length: 98
Actuated Cycle Length: 98
Offset: 2 (2%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.97
Intersection Signal Delay: 36.3 — Intersection LOS: D
Intersection Capacity Utilization 64.4% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 35: Siempre Viva Rd & Alta Rd

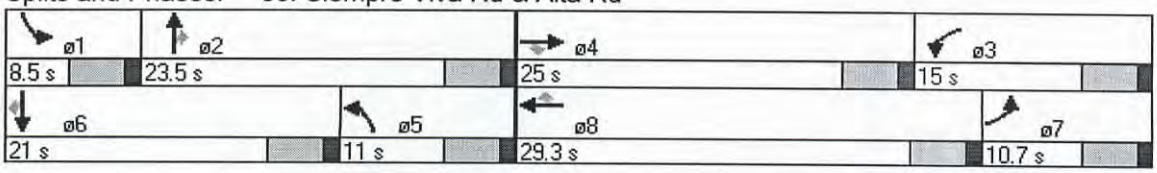


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Satd. Flow (RTOR)			185			2			279			202
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	55	923	182	74	784	2	121	256	354	45	52	186
Adj. Flow (vph)	60	1003	198	80	852	2	132	278	385	49	57	202
Lane Group Flow (vph)	60	1003	198	80	852	2	132	278	385	49	57	202
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Total Split (s)	10.7	25.0	25.0	15.0	29.3	29.3	11.0	23.5	23.5	8.5	21.0	21.0
Act Effct Green (s)	7.9	24.7	24.7	8.9	28.0	28.0	11.4	22.8	22.8	5.7	12.9	12.9
Actuated g/C Ratio	0.11	0.34	0.34	0.12	0.39	0.39	0.16	0.32	0.32	0.08	0.18	0.18
v/c Ratio	0.31	0.82	0.30	0.36	0.62	0.00	0.47	0.25	0.56	0.35	0.09	0.45
Control Delay	27.7	25.4	4.4	33.0	20.7	11.5	33.0	21.3	10.8	43.6	31.8	12.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.7	25.4	4.4	33.0	20.7	11.5	33.0	21.3	10.8	43.6	31.8	12.4
LOS	C	C	A	C	C	B	C	C	B	D	C	B
Approach Delay		22.2			21.8			18.1			21.0	
Approach LOS		C			C			B			C	

Intersection Summary

Cycle Length: 72
Actuated Cycle Length: 72
Offset: 48 (67%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 21.0 — Intersection LOS: C
Intersection Capacity Utilization 60.8% — ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 35: Siempre Viva Rd & Alta Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	192	5	5	5	24	88	5	26	5	64	39	301
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 (vph)	209	5	5	5	26	96	5	28	5	70	42	327

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total (vph)	209	11	32	96	39	70	370
Volume Left (vph)	209	0	5	0	5	70	0
Volume Right (vph)	0	5	0	96	5	0	327
Hadj (s)	0.53	-0.32	0.12	-0.67	-0.02	0.53	-0.59
Departure Headway (s)	6.4	5.6	6.2	5.4	6.1	6.1	5.0
Degree Utilization, x	0.37	0.02	0.05	0.14	0.07	0.12	0.51
Capacity (veh/h)	529	601	534	612	547	562	697
Control Delay (s)	12.0	7.5	8.4	8.1	9.5	8.7	11.9
Approach Delay (s)	11.8		8.2		9.5	11.4	
Approach LOS	B		A		A	B	

Intersection Summary			
Delay	10.9		
HCM Level of Service	B		
Intersection Capacity Utilization	44.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	367	5	5	5	96	354	5	103	5	16	10	175
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 (vph)	399	5	5	5	104	385	5	112	5	17	11	190

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total (vph)	399	11	110	385	123	17	201
Volume Left (vph)	399	0	5	0	5	17	0
Volume Right (vph)	0	5	0	385	5	0	190
Hadj (s)	0.53	-0.32	0.06	-0.67	0.02	0.53	-0.63
Departure Headway (s)	7.0	6.1	6.5	5.8	7.5	7.9	6.7
Degree Utilization, x	0.77	0.02	0.20	0.62	0.26	0.04	0.37
Capacity (veh/h)	504	559	526	593	421	414	480
Control Delay (s)	28.7	8.0	9.9	16.4	13.1	10.0	12.4
Approach Delay (s)	28.2		15.0		13.1	12.2	
Approach LOS	D		B		B	B	

Intersection Summary			
Delay	18.7		
HCM Level of Service	C		
Intersection Capacity Utilization	58.3%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	170	117	89	118	29	43
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	185	127	97	128	32	47
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	225				658	161
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	225				658	161
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	86				91	95
cM capacity (veh/h)	1344				370	884

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	312	225	32	47
Volume Left	185	0	32	0
Volume Right	0	128	0	47
cSH	1344	1700	370	884
Volume to Capacity	0.14	0.13	0.09	0.05
Queue Length 95th (ft)	12	0	7	4
Control Delay (s)	5.3	0.0	15.6	9.3
Lane LOS	A		C	A
Approach Delay (s)	5.3	0.0	11.8	
Approach LOS			B	

Intersection Summary			
Average Delay	4.2		
Intersection Capacity Utilization	40.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	43	65	212	29	118	170
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	47	71	230	32	128	185
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	262				410	246
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	262				410	246
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	96				78	77
cM capacity (veh/h)	1302				576	793

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	117	262	128	185
Volume Left	47	0	128	0
Volume Right	0	32	0	185
cSH	1302	1700	576	793
Volume to Capacity	0.04	0.15	0.22	0.23
Queue Length 95th (ft)	3	0	21	23
Control Delay (s)	3.3	0.0	13.0	10.9
Lane LOS	A		B	B
Approach Delay (s)	3.3	0.0	11.8	
Approach LOS			B	

Intersection Summary			
Average Delay	5.9		
Intersection Capacity Utilization	35.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	43	65	212	29	118	170
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	47	71	230	32	128	185
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	262				410	246
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	262				410	246
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	96				78	77
cM capacity (veh/h)	1302				576	793

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	117	262	128	185
Volume Left	47	0	128	0
Volume Right	0	32	0	185
cSH	1302	1700	576	793
Volume to Capacity	0.04	0.15	0.22	0.23
Queue Length 95th (ft)	3	0	21	23
Control Delay (s)	3.3	0.0	13.0	10.9
Lane LOS	A		B	B
Approach Delay (s)	3.3	0.0	11.8	
Approach LOS			B	

Intersection Summary			
Average Delay	5.9		
Intersection Capacity Utilization	35.3%	ICU Level of Service	A
Analysis Period (min)	15		

APPENDIX I

- Freeway Analysis

Existing Conditions								
Roadway Segment	# Lanes/Direction	Capacity	ADT	Peak Hour %	Direction Split	Truck Factor	V/C	LOS
State Route 125								
North of Otay Mesa Rd	2	4,600	9,160	8.29%	60%	5.11%	0.10	A
Existing State Route 905								
South of Siempre Viva Rd	2	4,600	28,000	8.29%	60%	5.11%	0.32	A

Lanes - Number of lanes in one direction: HOV-High Occupancy Lanes
Capacity - Capacity in one direction
ADT - Average Daily Traffic
Peak Hour % - Percentage of average daily traffic occurring during the peak hour
Direction Split - Percentage of peak hour traffic traveling in peak direction.
Truck Factor - Truck/terrain factor to represent influence of heavy vehicles and/or grades.
Peak Hour Volume - Peak hour traffic in peak direction of travel/ For facilities with HOV lanes, ten percent is assumed to use HOV lanes.
v/c Ratio - Volume to Capacity Ratio

Note: LOS calculations only go up to "F(2)", anything over 1.46 is LOS F(3)

Existing + Phase 1 Conditions								
Roadway Segment	# Lanes/Direction	Capacity	ADT	Peak Hour %	Direction Split	Truck Factor	V/C	LOS
State Route 125								
North of Otay Mesa Rd	2	4,600	9,575	8.00%	60%	5.00%	0.10	A
Existing State Route 905								
South of Siempre Viva Rd	2	4,600	28,831	8.29%	60%	5.11%	0.33	A

Lanes - Number of lanes in one direction: HOV-High Occupancy Lanes
Capacity - Capacity in one direction
ADT - Average Daily Traffic
Peak Hour % - Percentage of average daily traffic occurring during the peak hour
Direction Split - Percentage of peak hour traffic traveling in peak direction.
Truck Factor - Truck/terrain factor to represent influence of heavy vehicles and/or grades.
Peak Hour Volume - Peak hour traffic in peak direction of travel/ For facilities with HOV lanes, ten percent is assumed to use HOV lanes.
v/c Ratio - Volume to Capacity Ratio

Note: LOS calculations only go up to "F(2)", anything over 1.46 is LOS F(3)

Existing + Phases 1-2 Conditions								
Roadway Segment	# Lanes/Direction	Capacity	ADT	Peak Hour %	Direction Split	Truck Factor	V/C	LOS
State Route 125								
North of Otay Mesa Rd	2	4,600	9,979	8.00%	60%	5.00%	0.11	A
Existing State Route 905								
South of Siempre Viva Rd	2	4,600	29,637	8.29%	60%	5.11%	0.34	A

Lanes - Number of lanes in one direction: HOV-High Occupancy Lanes
Capacity - Capacity in one direction
ADT - Average Daily Traffic
Peak Hour % - Percentage of average daily traffic occurring during the peak hour
Direction Split - Percentage of peak hour traffic traveling in peak direction.
Truck Factor - Truck/terrain factor to represent influence of heavy vehicles and/or grades.
Peak Hour Volume - Peak hour traffic in peak direction of travel/ For facilities with HOV lanes, ten percent is assumed to use HOV lanes.
v/c Ratio - Volume to Capacity Ratio

Note: LOS calculations only go up to "F(2)", anything over 1.46 is LOS F(3)

Cumulative + Project w/ SR-905 [Phases 1A & 1B] Conditions								
Roadway Segment	# Lanes/Direction	Capacity	ADT	Peak Hour %	Direction Split	Truck Factor	V/C	LOS
SR-125								
North of Otay Mesa Rd	2	4,600	13,930	8.00%	60%	5.00%	0.15	A
Existing State Route 905								
South of Siempre Viva Rd	2	4,600	76,460	8.29%	60%	5.11%	0.87	D
New State Route 905 Facility								
West of Britannia Blvd	3	6,900	117,120	8.29%	60%	5.11%	0.89	D
Britannia Blvd to La Media Rd	3	6,900	104,080	8.29%	60%	5.11%	0.79	C
La Media Rd to Siempre Viva Rd	3	6,900	90,990	8.29%	60%	5.11%	0.69	C

Lanes - Number of lanes in one direction: HOV-High Occupancy Lanes
Capacity - Capacity in one direction
ADT - Average Daily Traffic
Peak Hour % - Percentage of average daily traffic occurring during the peak hour
Direction Split - Percentage of peak hour traffic traveling in peak direction.
Truck Factor - Truck/terrain factor to represent influence of heavy vehicles and/or grades.
Peak Hour Volume - Peak hour traffic in peak direction of travel/ For facilities with HOV lanes, ten percent is assumed to use HOV lanes.
v/c Ratio - Volume to Capacity Ratio

Note: LOS calculations only go up to "F(2)", anything over 1.46 is LOS F(3)

2030 w/o Project Conditions								
Roadway Segment	# Lanes/Direction	Capacity	ADT	Peak Hour %	Direction Split	Truck Factor	V/C	LOS
SR-125								
North of Otay Mesa Rd	2	4,600	77,482	8.00%	60%	5.00%	0.85	D
New State Route 905 Facility								
Britannia Blvd to La Media Rd	4	9,200	149,453	8.29%	60%	5.11%	0.85	D
La Media Rd to Siempre Viva Rd	4	9,200	73,308	8.29%	60%	5.11%	0.42	B
South of Siempre Viva Rd	2	4,600	71,482	8.29%	60%	5.11%	0.81	D

Lanes - Number of lanes in one direction: HOV-High Occupancy Lanes
Capacity - Capacity in one direction
ADT - Average Daily Traffic
Peak Hour % - Percentage of average daily traffic occurring during the peak hour
Direction Split - Percentage of peak hour traffic traveling in peak direction.
Truck Factor - Truck/terrain factor to represent influence of heavy vehicles and/or grades.
Peak Hour Volume - Peak hour traffic in peak direction of travel/ For facilities with HOV lanes, ten percent is assumed to use HOV lanes.
v/c Ratio - Volume to Capacity Ratio

Note: LOS calculations only go up to "F(2)", anything over 1.46 is LOS F(3)

2030 + Project Build Out (Phases 1-2) Conditions								
Roadway Segment	# Lanes/Direction	Capacity	ADT	Peak Hour %	Direction Split	Truck Factor	V/C	LOS
SR-125								
North of Otay Mesa Rd	2	4,600	78,300	8.00%	60%	5.00%	0.86	D
New State Route 905 Facility								
Britannia Blvd to La Media Rd	4	9,200	156,000	8.29%	60%	5.11%	0.89	D
La Media Rd to Siempre Viva Rd	4	9,200	80,400	8.29%	60%	5.11%	0.46	B
South of Siempre Viva Rd	2	4,600	72,300	8.29%	60%	5.11%	0.82	D

Lanes - Number of lanes in one direction: HOV-High Occupancy Lanes
Capacity - Capacity in one direction
ADT - Average Daily Traffic
Peak Hour % - Percentage of average daily traffic occurring during the peak hour
Direction Split - Percentage of peak hour traffic traveling in peak direction.
Truck Factor - Truck/terrain factor to represent influence of heavy vehicles and/or grades.
Peak Hour Volume - Peak hour traffic in peak direction of travel/ For facilities with HOV lanes, ten percent is assumed to use HOV lanes.
v/c Ratio - Volume to Capacity Ratio

Note: LOS calculations only go up to "F(2)", anything over 1.46 is LOS F(3)

APPENDIX J

- Traffic Signal Warrant Analysis

Otay Mesa Road/Alta Road

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 4)

WARRANT 2 - Four Hour Vehicular Volume **SATISFIED* YES ☐ NO ☒**

Record hourly vehicular volumes for any four hours of an average day.

APPROACH LANES	One	2 or More	7AM	~~8AM~~	~~4PM~~	~~5PM~~ Hour
Both Approaches - Major Street	X		475	206	60	88
Higher Approach - Minor Street	X		81	74	343	169

Major St: Otay Mesa
Minor St: Alta Rd

*All plotted points fall above the curves in Figure 4C-1. (URBAN AREAS)	Yes ☐	No ☐
OR, All plotted points fall above the curves in Figure 4C-2. (RURAL AREAS)	Yes ☐	No ☒

WARRANT 3 - Peak Hour
(Part A or Part B must be satisfied) **SATISFIED YES ☐ NO ☒**

PART A **SATISFIED YES ☐ NO ☒**

(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

1. The total delay experienced for traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; AND	Yes ☐	No ☒
2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND	Yes ☒	No ☐
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.	Yes ☐	No ☒

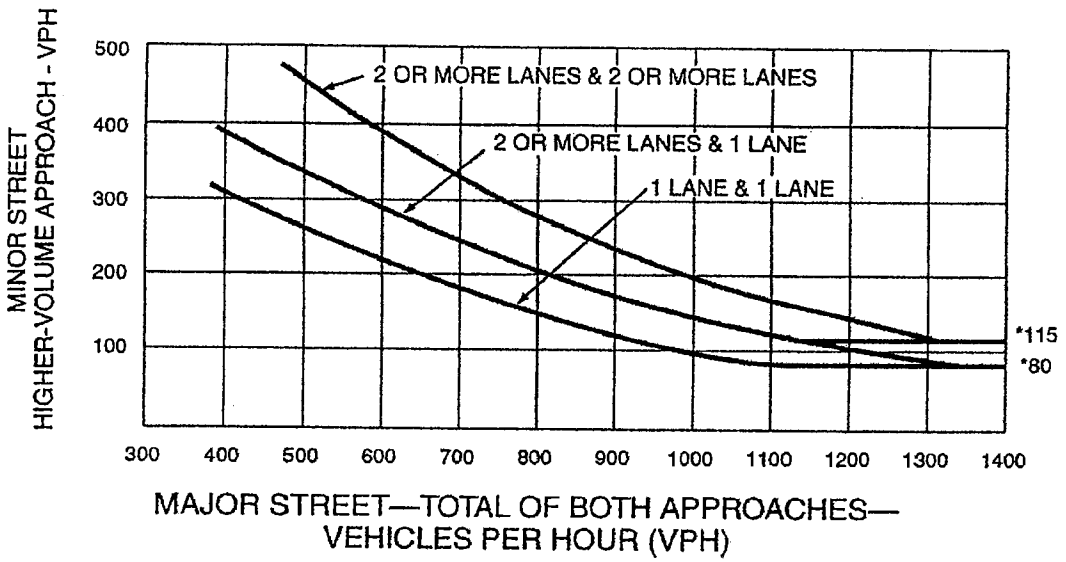
PART B **SATISFIED YES ☐ NO ☒**

APPROACH LANES	One	2 or More	AM	~~PM~~ Hour
Both Approaches - Major Street	X		475	60
Higher Approach - Minor Street	X		81	343

The plotted point falls above the curve in Figure 4C-3.	Yes ☐	No ☐
OR, The plotted point falls above the curve in Figure 4C-4.	Yes ☐	No ☒

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

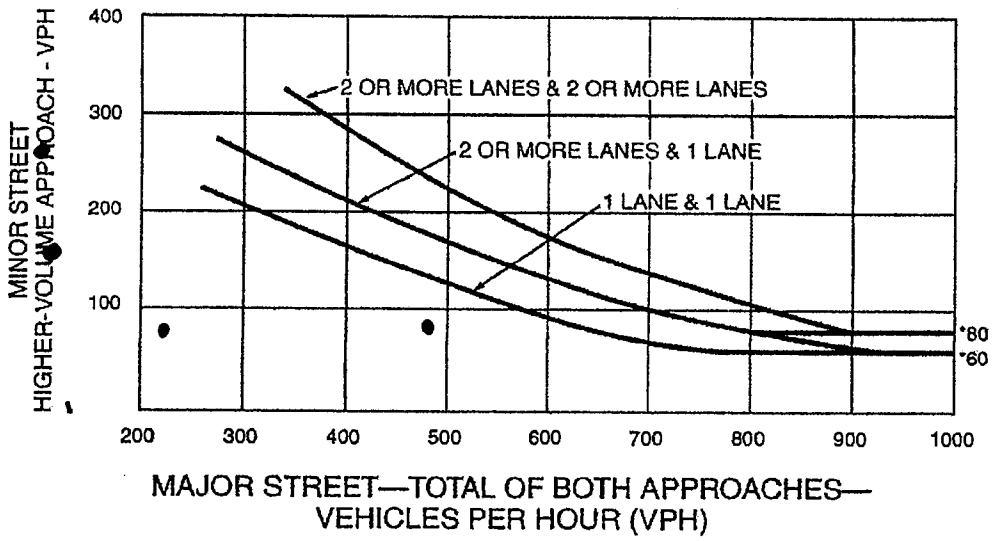
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

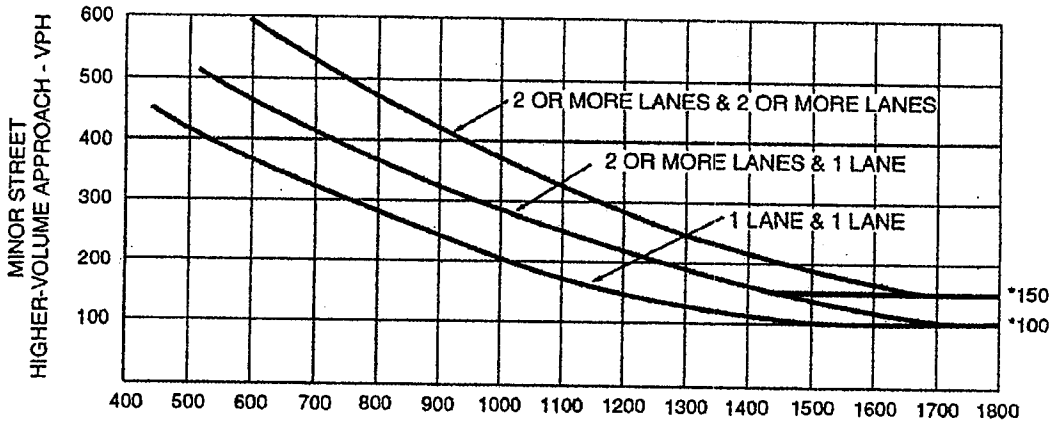
Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE ~~70~~ 64 km/h OR ABOVE 40 mph ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

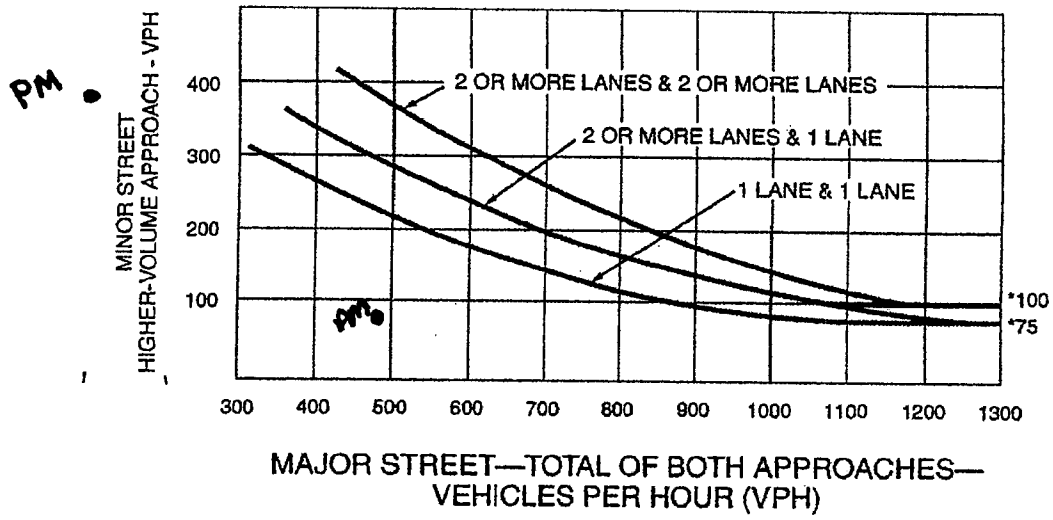
Figure 4C-3. Warrant 3, Peak Hour



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

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE ~~70~~ 64 km/h OR ABOVE 40 mph ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 4)

WARRANT 2 - Four Hour Vehicular Volume **SATISFIED* YES ☐ NO ☒**

Record hourly vehicular volumes for any four hours of an average day.

APPROACH LANES	One	2 or More	7AM	~~8AM~~	~~4PM~~	~~5PM~~ Hour
Both Approaches - Major Street	X		488	212	112	164
Higher Approach - Minor Street	X		133	122	356	175

Major St: Otay Mesa
Minor St: Alta Rd

*All plotted points fall above the curves in Figure 4C-1. (URBAN AREAS)	Yes ☐	No ☐
OR, All plotted points fall above the curves in Figure 4C-2. (RURAL AREAS)	Yes ☐	No ☒

WARRANT 3 - Peak Hour **SATISFIED YES ☐ NO ☒**
(Part A or Part B must be satisfied)

PART A **SATISFIED YES ☐ NO ☒**

(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

1. The total delay experienced for traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; AND	Yes ☐	No ☒
2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND	Yes ☒	No ☐
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.	Yes ☐	No ☒

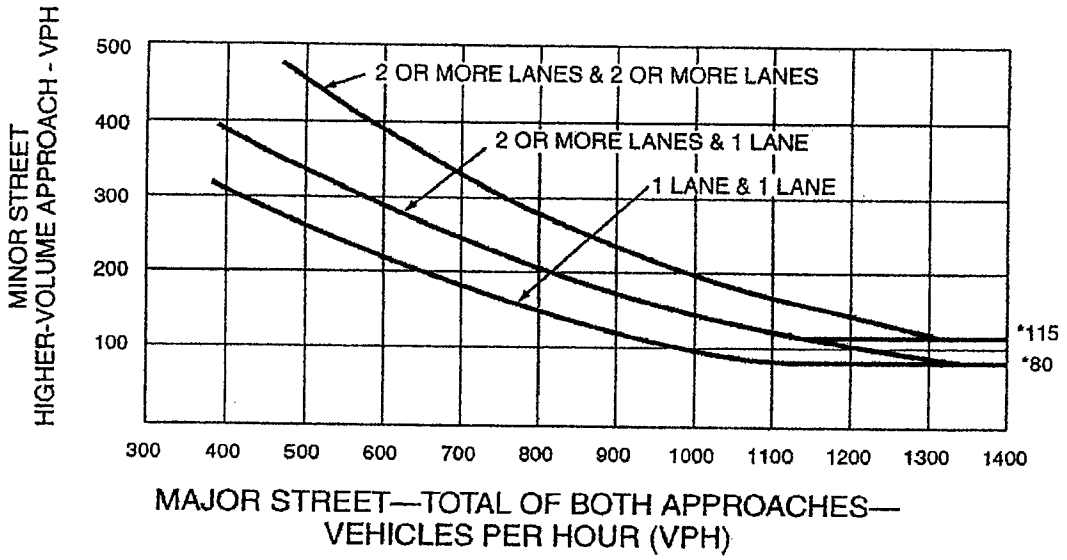
PART B **SATISFIED YES ☐ NO ☒**

APPROACH LANES	One	2 or More	AM	~~PM~~ Hour
Both Approaches - Major Street	X		488	112
Higher Approach - Minor Street	X		133	356

The plotted point falls above the curve in Figure 4C-3.	Yes ☐	No ☐
OR, The plotted point falls above the curve in Figure 4C-4.	Yes ☐	No ☒

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

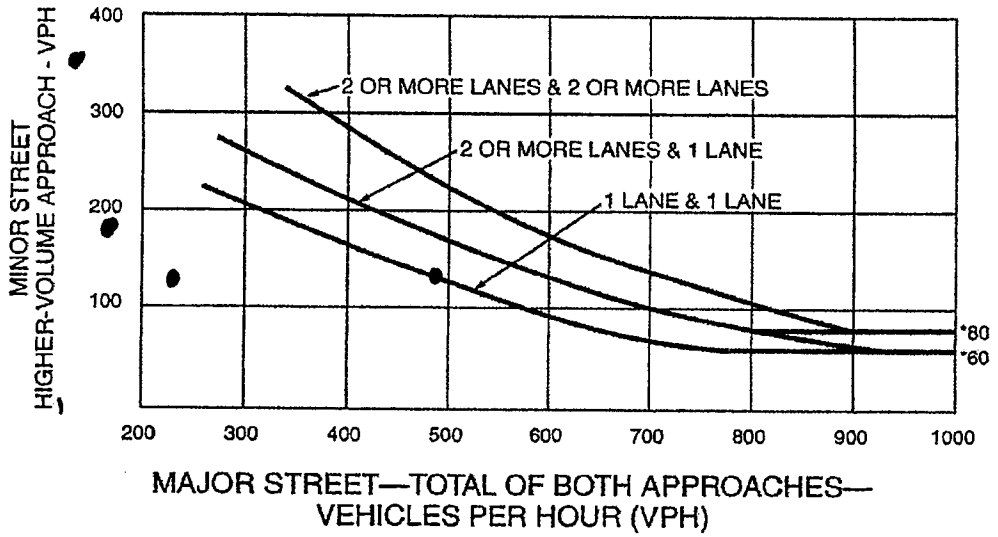
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

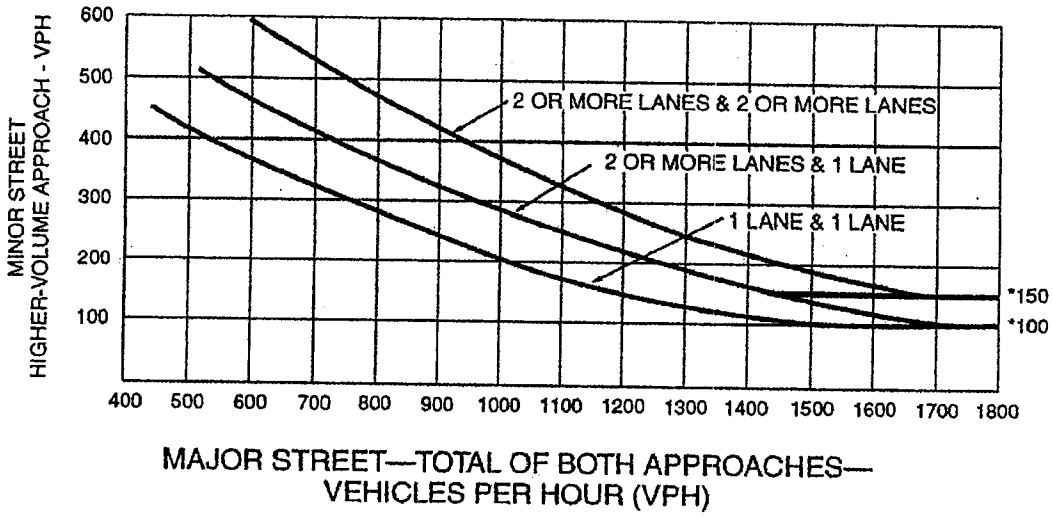
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE ~~70~~ 64 km/h OR ABOVE 40 mph ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

Existing + Project Phases 1-2 - Otay Mesa Rd/Alta Rd

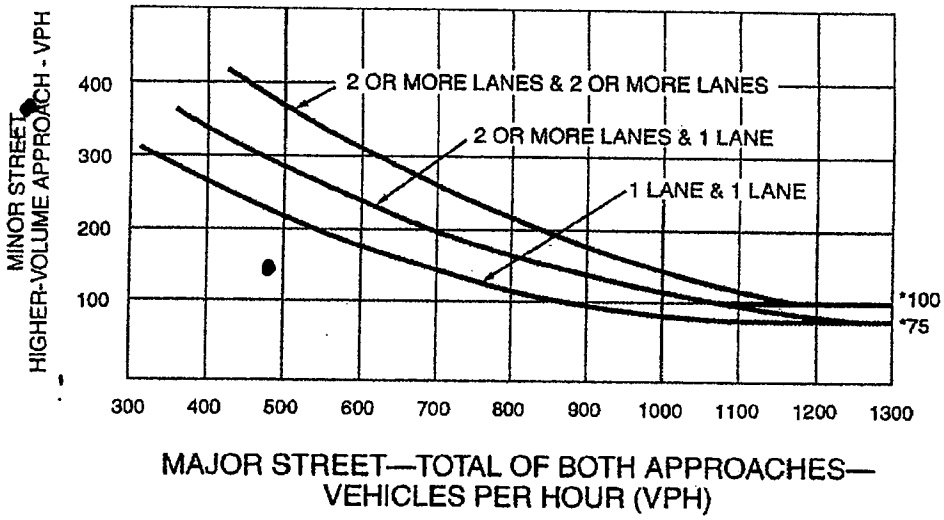
Figure 4C-3. Warrant 3, Peak Hour



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

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE ~~70~~ 64 km/h OR ABOVE 40 mph ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 4)

WARRANT 2 - Four Hour Vehicular Volume **SATISFIED* YES ☒ NO ☐**

Record hourly vehicular volumes for any four hours of an average day.

APPROACH LANES	One	2 or More	7AM	~~8AM~~	~~4PM~~	~~5PM~~ Hour
Both Approaches - Major Street	X		1170	507	710	1041
Higher Approach - Minor Street	X		390	356	540	266

Major St: Otay Mesa
Minor St: Alta Rd

*All plotted points fall above the curves in Figure 4C-1. (URBAN AREAS)	Yes ☐	No ☐
OR, All plotted points fall above the curves in Figure 4C-2. (RURAL AREAS)	Yes ☒	No ☐

WARRANT 3 - Peak Hour **SATISFIED YES ☒ NO ☐**
(Part A or Part B must be satisfied)

PART A **SATISFIED YES ☒ NO ☐**
(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

1. The total delay experienced for traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; AND	Yes ☒	No ☐
2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND	Yes ☒	No ☐
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.	Yes ☒	No ☐

PART B **SATISFIED YES ☒ NO ☐**

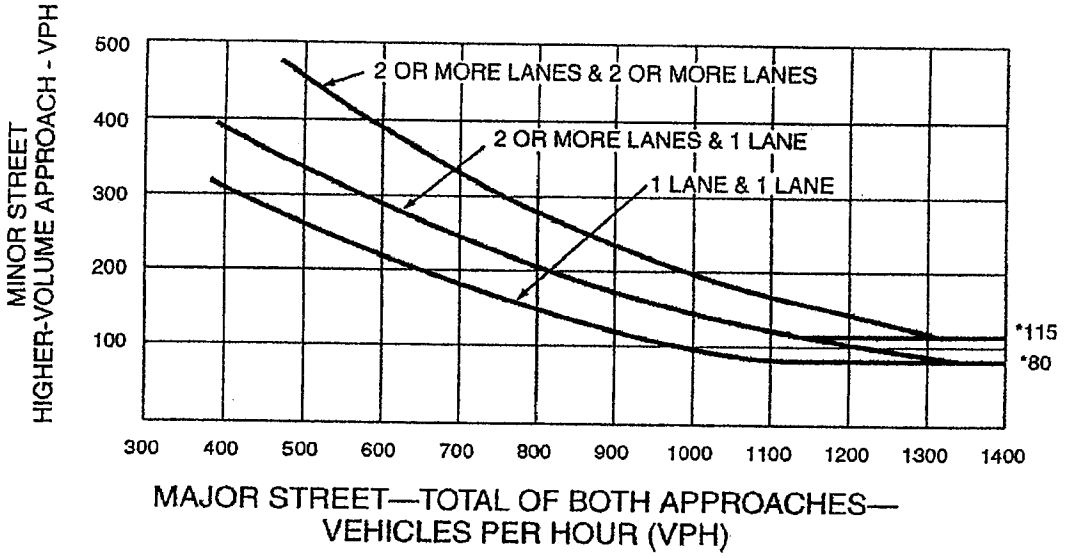
APPROACH LANES	One	2 or More	AM	~~PM~~ Hour
Both Approaches - Major Street	X		1170	710
Higher Approach - Minor Street	X		390	540

The plotted point falls above the curve in Figure 4C-3.	Yes ☐	No ☐
OR, The plotted point falls above the curve in Figure 4C-4.	Yes ☒	No ☐

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Cumulative (2020) - Otay Mesa Rd/Alta Rd

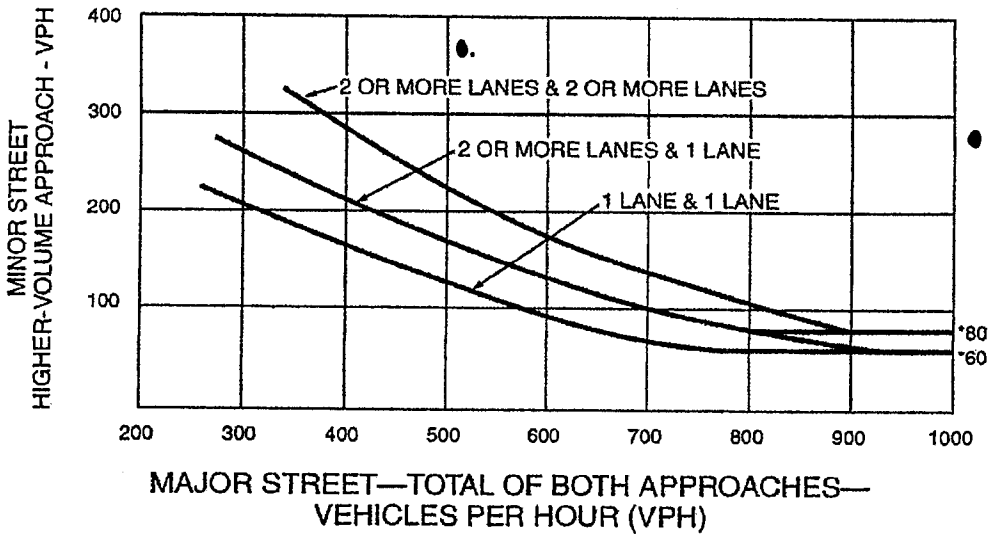
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

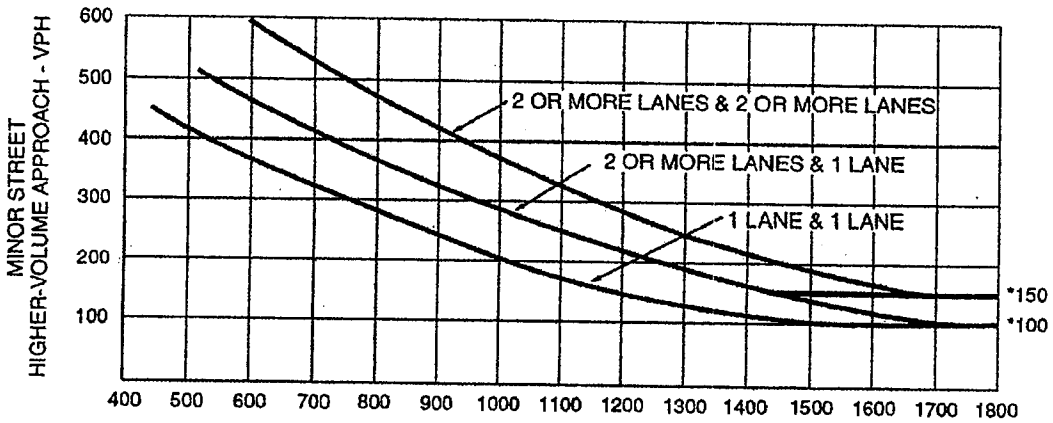
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE ~~70~~ 64 km/h OR ABOVE 40 mph ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

Cumulative (2020) - Otay Mesa Rd/Alta Rd

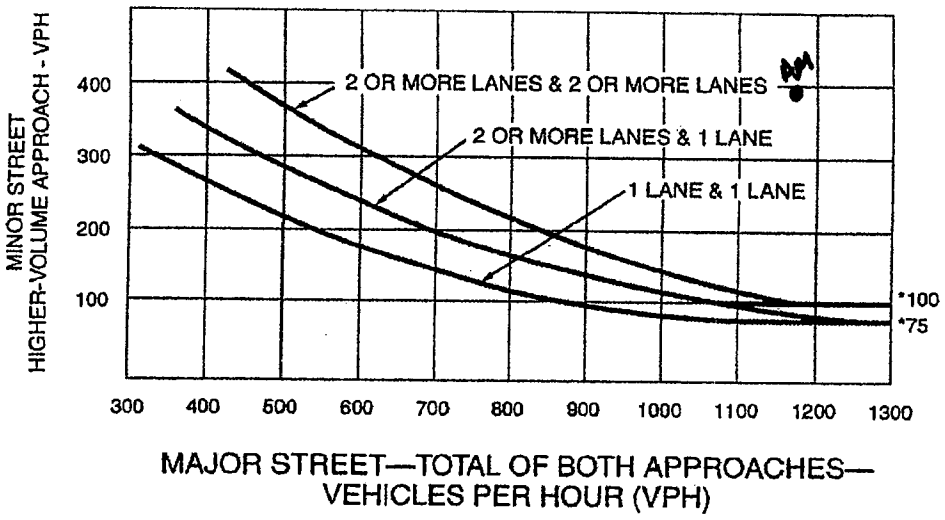
Figure 4C-3. Warrant 3, Peak Hour



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

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE ~~70~~ 64 km/h OR ABOVE 40 mph ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Airway Road/Sanyo Avenue

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 4)

WARRANT 2 - Four Hour Vehicular Volume **SATISFIED* YES ☐ NO ☒**

Record hourly vehicular volumes for any four hours of an average day.

APPROACH LANES	One	2 or More	7 AM	8AM	4PM	5PM Hour
Both Approaches - Major Street		X	515	455	385	378
Higher Approach - Minor Street		X	79	151	227	209

Major St: Sanyo Ave
Minor St: Airway Rd

*All plotted points fall above the curves in Figure 4C-1. (URBAN AREAS)	Yes ☐ No ☐
OR, All plotted points fall above the curves in Figure 4C-2. (RURAL AREAS)	Yes ☐ No ☒

WARRANT 3 - Peak Hour
(Part A or Part B must be satisfied) **SATISFIED YES ☐ NO ☒**

PART A **SATISFIED YES ☐ NO ☒**

(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

1. The total delay experienced for traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; AND	Yes ☐ No ☒
2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND	Yes ☒ No ☐
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.	Yes ☐ No ☒

PART B **SATISFIED YES ☐ NO ☒**

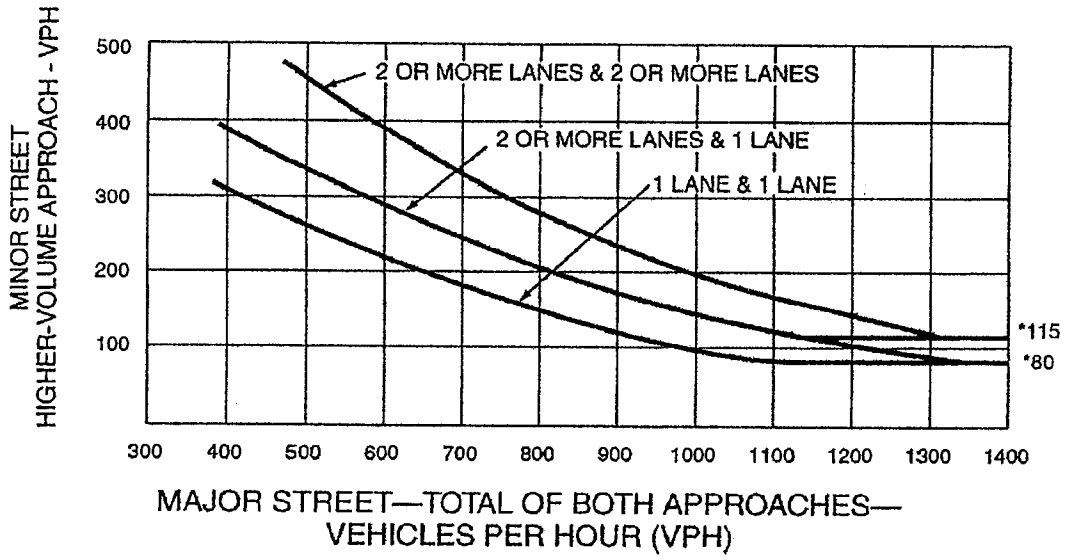
APPROACH LANES	One	2 or More	AM	PM Hour
Both Approaches - Major Street		X	499	421
Higher Approach - Minor Street		X	131	219

The plotted point falls above the curve in Figure 4C-3.	Yes ☐ No ☐
OR, The plotted point falls above the curve in Figure 4C-4.	Yes ☐ No ☒

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Existing - Airway Road/Sanyo Avenue

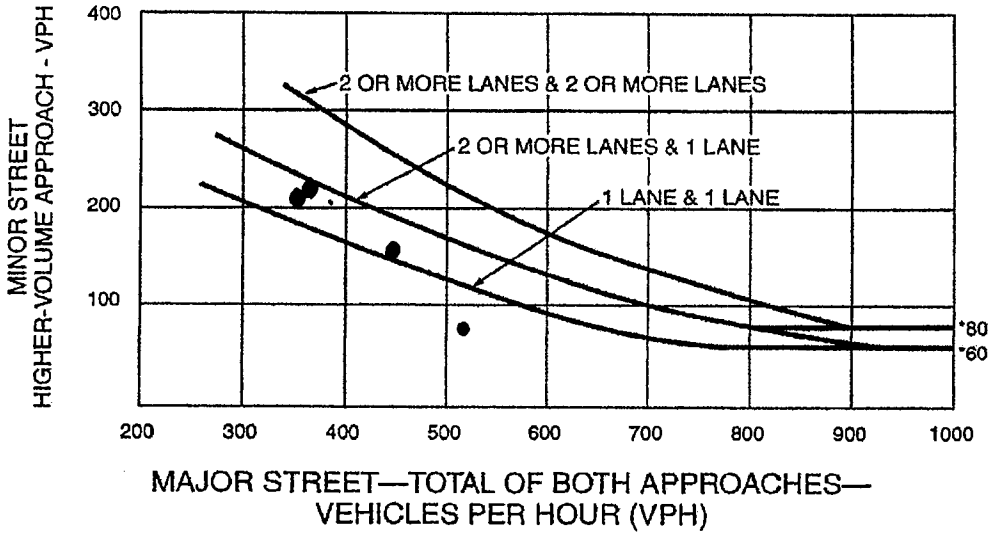
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

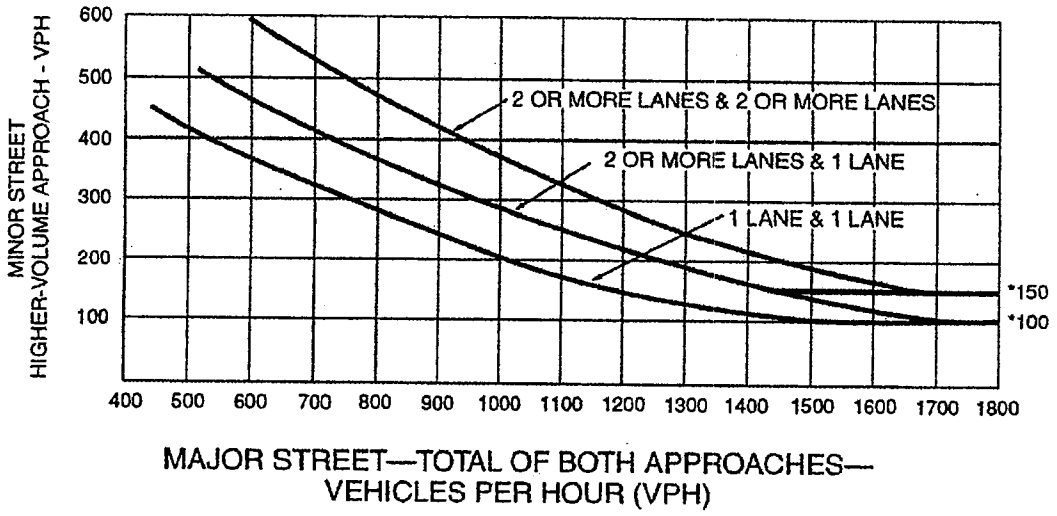
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE ~~70~~ 64 km/h OR ABOVE 40 mph ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

Existing - Airway Road/Sanyo Avenue

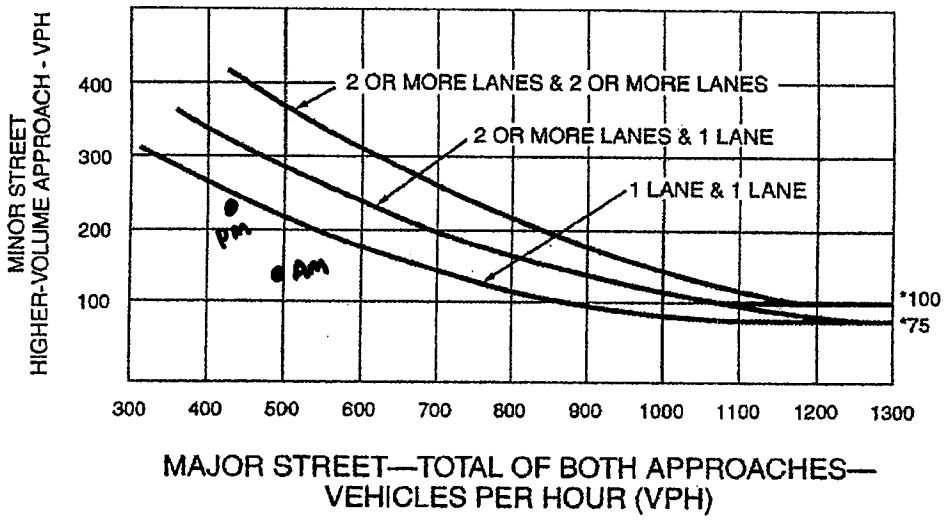
Figure 4C-3. Warrant 3, Peak Hour



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

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE ~~70~~ 64 km/h OR ABOVE 40 mph ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 4)

WARRANT 2 - Four Hour Vehicular Volume **SATISFIED* YES ☐ NO ☒**

Record hourly vehicular volumes for any four hours of an average day.

APPROACH LANES	One	2 or More	7 AM	8AM	4PM	5PM Hour
Both Approaches - Major Street		X	528	467	388	381
Higher Approach - Minor Street		X	107	204	281	259

Major St: Sanyo Ave
Minor St: Airway Rd

*All plotted points fall above the curves in Figure 4C-1. (URBAN AREAS)	Yes ☐ No ☐
OR, All plotted points fall above the curves in Figure 4C-2. (RURAL AREAS)	Yes ☐ No ☒

WARRANT 3 - Peak Hour **SATISFIED YES ☐ NO ☒**
(Part A or Part B must be satisfied)

PART A **SATISFIED YES ☐ NO ☒**
(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

1. The total delay experienced for traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; AND	Yes ☐ No ☒
2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND	Yes ☒ No ☐
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.	Yes ☐ No ☒

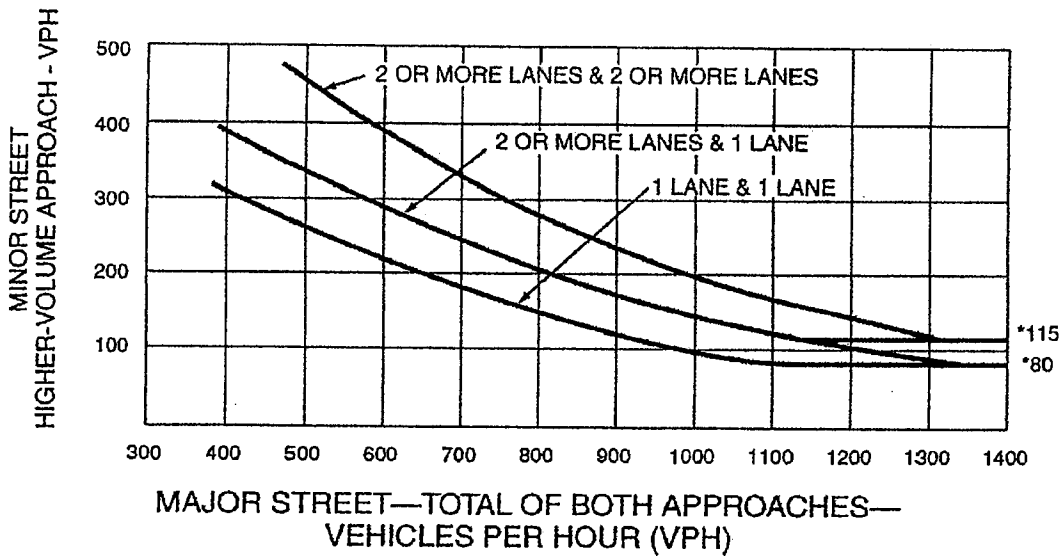
PART B **SATISFIED YES ☐ NO ☒**

APPROACH LANES	One	2 or More	AM	PM Hour
Both Approaches - Major Street		X	512	424
Higher Approach - Minor Street		X	177	271

The plotted point falls above the curve in Figure 4C-3.	Yes ☐ No ☐
OR, The plotted point falls above the curve in Figure 4C-4.	Yes ☐ No ☒

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

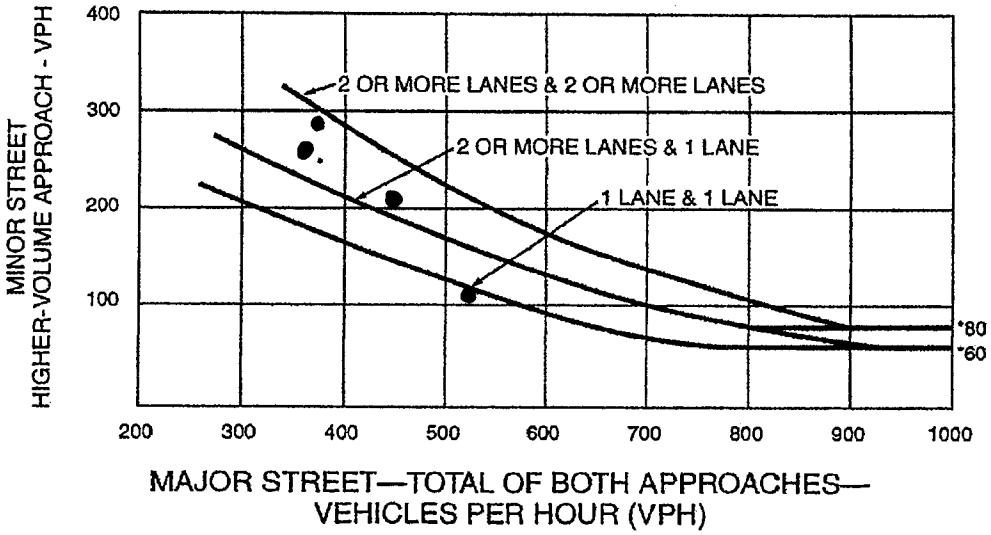
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

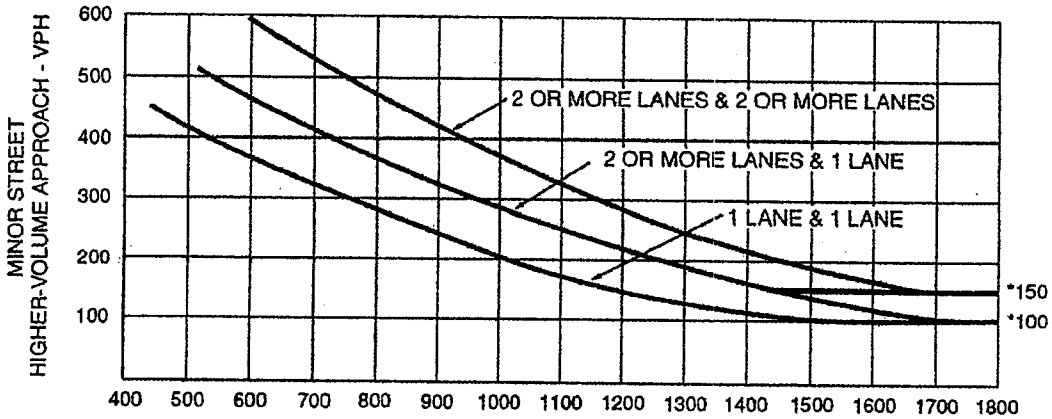
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE ~~70~~ 64 km/h OR ABOVE 40 mph ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

Existing + Project Phases 1-2 - Airway Road/Sanyo Avenue

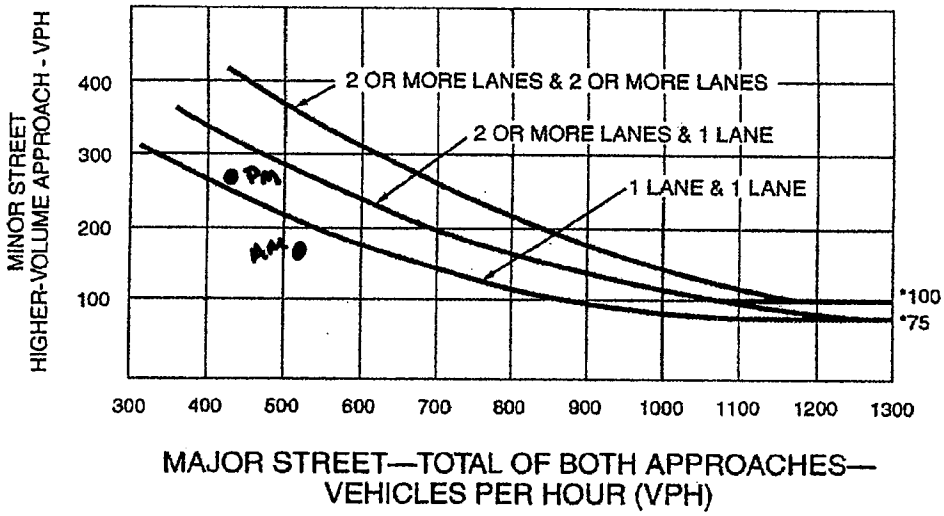
Figure 4C-3. Warrant 3, Peak Hour



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

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE ~~70~~ 64 km/h OR ABOVE 40 mph ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 4)

WARRANT 2 - Four Hour Vehicular Volume **SATISFIED* YES ☒ NO ☐**

Record hourly vehicular volumes for any four hours of an average day.

APPROACH LANES	One	2 or More	7 AM	~~8AM~~	~~4PM~~	~~5PM~~ Hour
Both Approaches - Major Street		X	670	1134	1225	1135
Higher Approach - Minor Street		X	712	638	354	360

Major St: Airway Rd
Minor St: Sanyo Ave

*All plotted points fall above the curves in Figure 4C-1. (URBAN AREAS)	Yes ☐	No ☐
OR, All plotted points fall above the curves in Figure 4C-2. (RURAL AREAS)	Yes ☒	No ☐

WARRANT 3 - Peak Hour **SATISFIED YES ☒ NO ☐**
(Part A or Part B must be satisfied)

PART A **SATISFIED YES ☒ NO ☐**
(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

1. The total delay experienced for traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; AND	Yes ☒	No ☐
2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND	Yes ☒	No ☐
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.	Yes ☒	No ☐

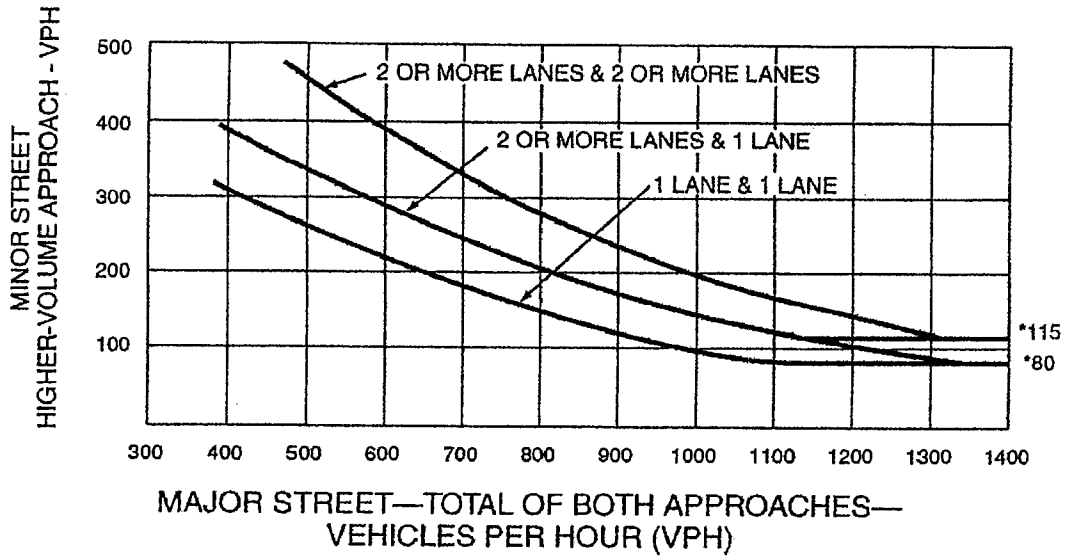
PART B **SATISFIED YES ☒ NO ☐**

APPROACH LANES	One	2 or More	AM	~~PM~~ Hour
Both Approaches - Major Street		X	1010	1210
Higher Approach - Minor Street		X	710	370

The plotted point falls above the curve in Figure 4C-3.	Yes ☐	No ☐
OR, The plotted point falls above the curve in Figure 4C-4.	Yes ☒	No ☐

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

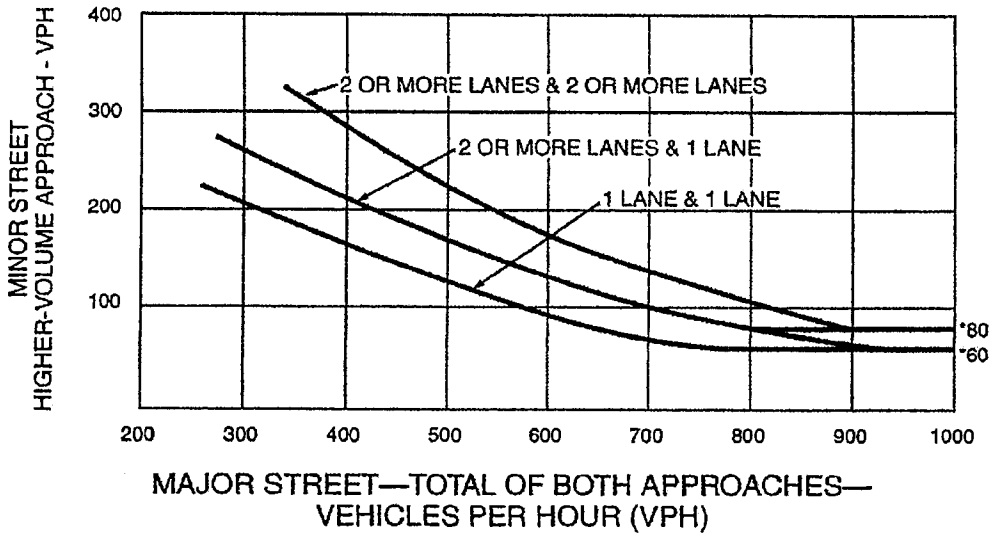
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

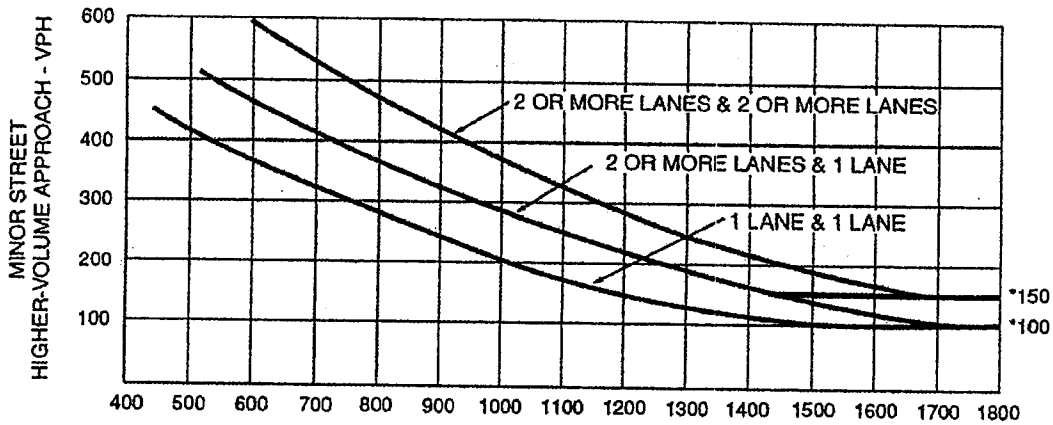
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE ~~70~~ 64 km/h OR ABOVE 40 mph ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

Cumulative (2020) - Airway Road/Sanyo Avenue

Figure 4C-3. Warrant 3, Peak Hour

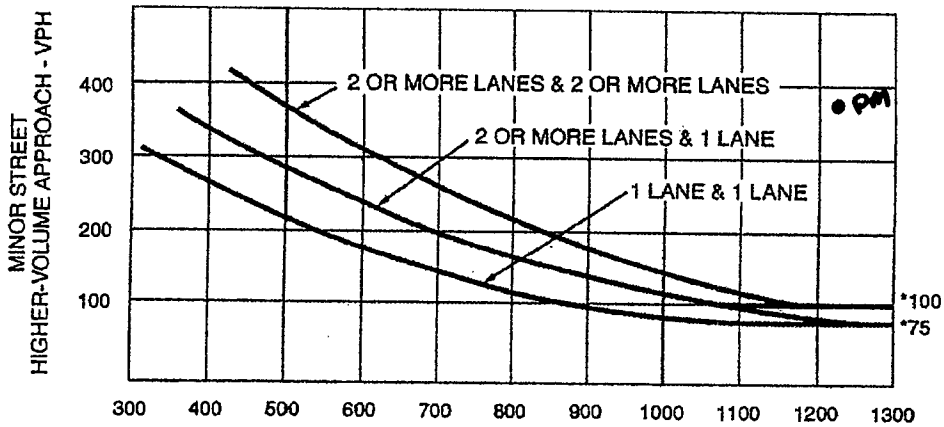


*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

AM

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE ~~70~~ 64 km/h OR ABOVE 40 mph ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Airway Road/Paseo De Las Americas

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 4)

WARRANT 2 - Four Hour Vehicular Volume **SATISFIED* YES ☐ NO ☒**

Record hourly vehicular volumes for any four hours of an average day.

APPROACH LANES	One	2 or More	7AM	~~8AM~~	~~4PM~~	~~5PM~~ Hour
Both Approaches - Major Street		X	62	123	110	97
Higher Approach - Minor Street		X	10	65	55	50

Major St: Airway Rd
Minor St: Paseo De Las Americas

*All plotted points fall above the curves in Figure 4C-1. (URBAN AREAS)	Yes ☐ No ☐
OR, All plotted points fall above the curves in Figure 4C-2. (RURAL AREAS)	Yes ☐ No ☒

WARRANT 3 - Peak Hour **SATISFIED YES ☐ NO ☒**
(Part A or Part B must be satisfied)

PART A **SATISFIED YES ☐ NO ☒**
(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

1. The total delay experienced for traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; AND	Yes ☐ No ☒
2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND	Yes ☐ No ☒
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.	Yes ☐ No ☒

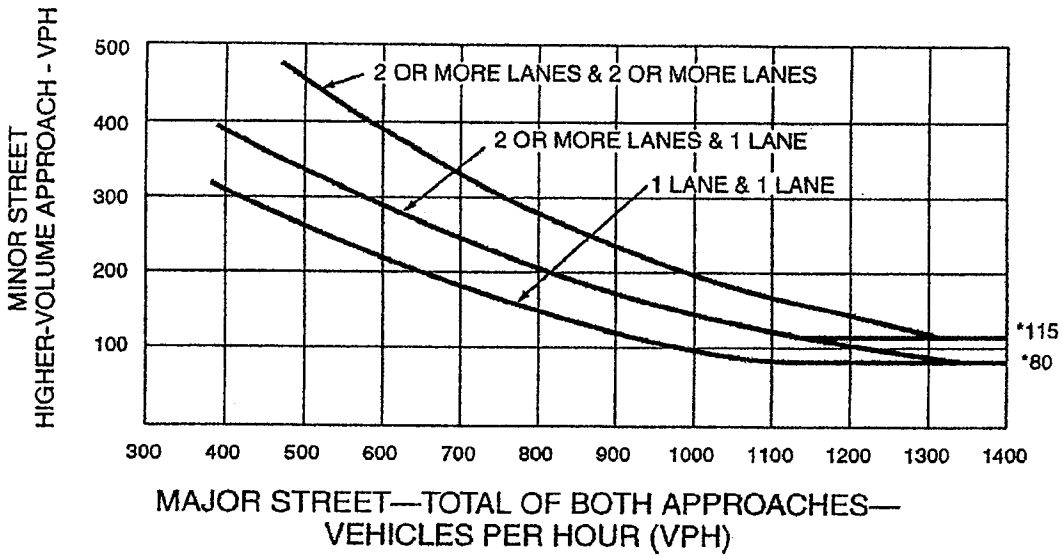
PART B **SATISFIED YES ☐ NO ☒**

APPROACH LANES	One	2 or More	AM	~~PM~~ Hour
Both Approaches - Major Street		X	123	118
Higher Approach - Minor Street		X	65	55

The plotted point falls above the curve in Figure 4C-3.	Yes ☐ No ☐
OR, The plotted point falls above the curve in Figure 4C-4.	Yes ☐ No ☒

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

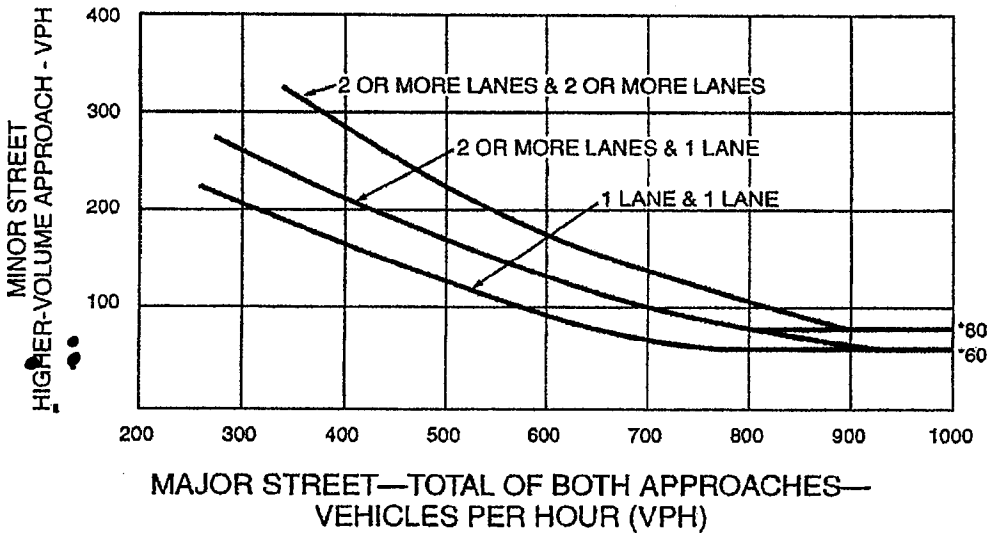
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

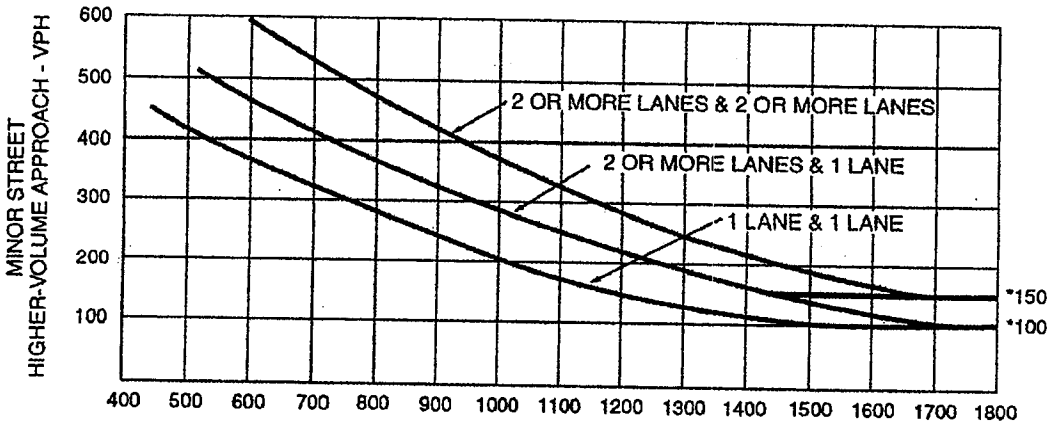
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE ~~79~~ 64 km/h OR ABOVE 40 mph ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

Existing - Airway Road/Paseo De Las Americas

Figure 4C-3. Warrant 3, Peak Hour

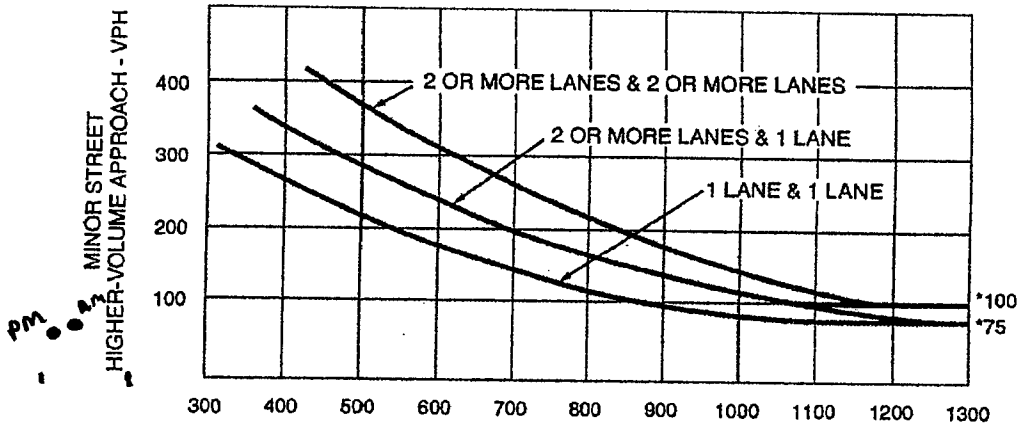


MAJOR STREET—TOTAL OF BOTH APPROACHES—
VEHICLES PER HOUR (VPH)

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

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE ~~70~~ 64 km/h OR ABOVE 40 mph ON MAJOR STREET)



MAJOR STREET—TOTAL OF BOTH APPROACHES—
VEHICLES PER HOUR (VPH)

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 4)

WARRANT 2 - Four Hour Vehicular Volume **SATISFIED* YES ☐ NO ☒**

Record hourly vehicular volumes for any four hours of an average day.

APPROACH LANES	One	2 or More	7AM	8AM	4PM	5PM	Hour
Both Approaches - Major Street		X	139	275	310	274	
Higher Approach - Minor Street		X	10	65	98	89	

Major St: Airway Rd
Minor St: Paseo De Las Americas

*All plotted points fall above the curves in Figure 4C-1. (URBAN AREAS)	Yes ☐	No ☐
OR, All plotted points fall above the curves in Figure 4C-2. (RURAL AREAS)	Yes ☐	No ☒

WARRANT 3 - Peak Hour **SATISFIED YES ☐ NO ☒**
(Part A or Part B must be satisfied)

PART A **SATISFIED YES ☐ NO ☒**
(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

1. The total delay experienced for traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; AND	Yes ☐	No ☒
2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND	Yes ☐	No ☒
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.	Yes ☐	No ☒

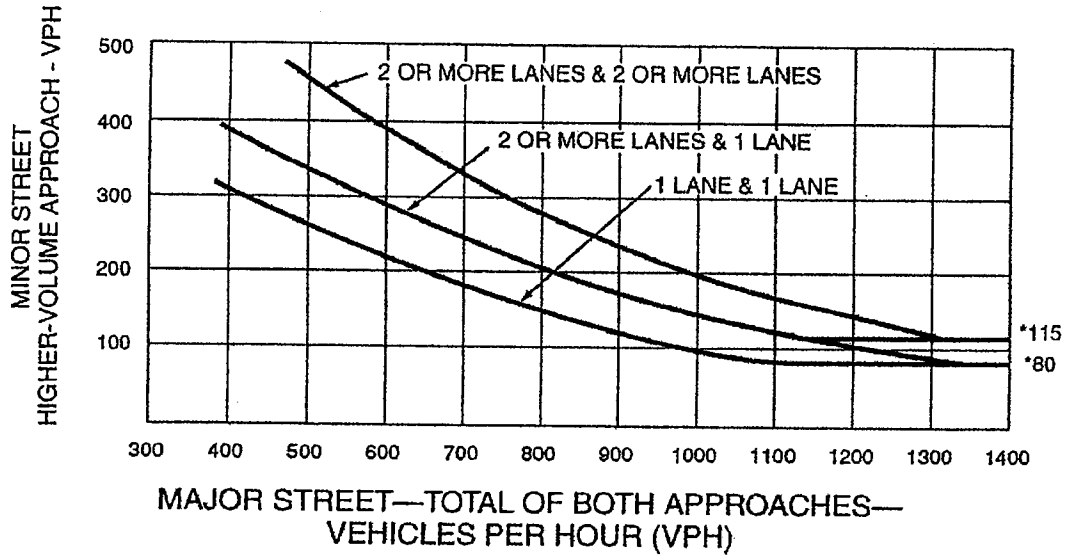
PART B **SATISFIED YES ☐ NO ☒**

APPROACH LANES	One	2 or More	AM	PM	Hour
Both Approaches - Major Street		X	275	333	
Higher Approach - Minor Street		X	65	98	

The plotted point falls above the curve in Figure 4C-3.	Yes ☐	No ☐
OR, The plotted point falls above the curve in Figure 4C-4.	Yes ☐	No ☒

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

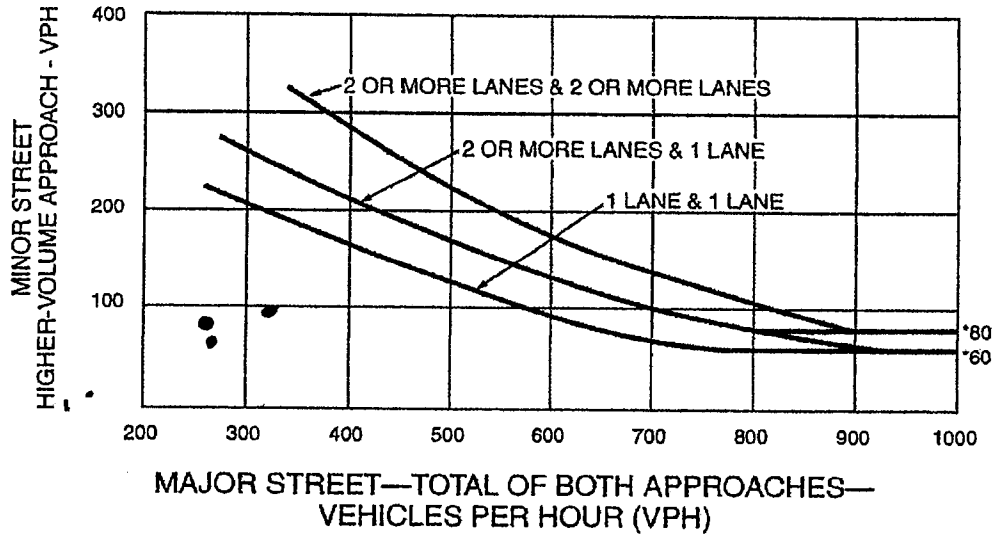
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

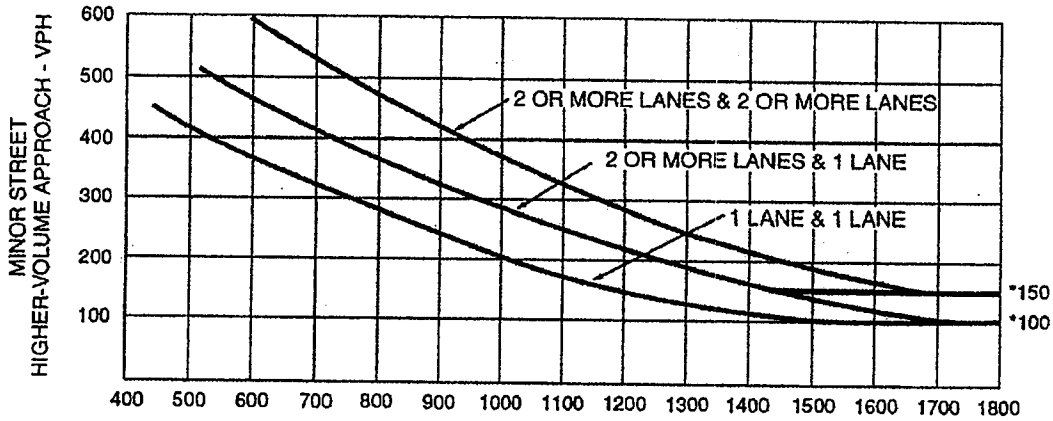
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE ~~70~~ 64 km/h OR ABOVE 40 mph ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

Existing + Project Phases 1-2 - Airway Road/Paseo De Las Americas

Figure 4C-3. Warrant 3, Peak Hour

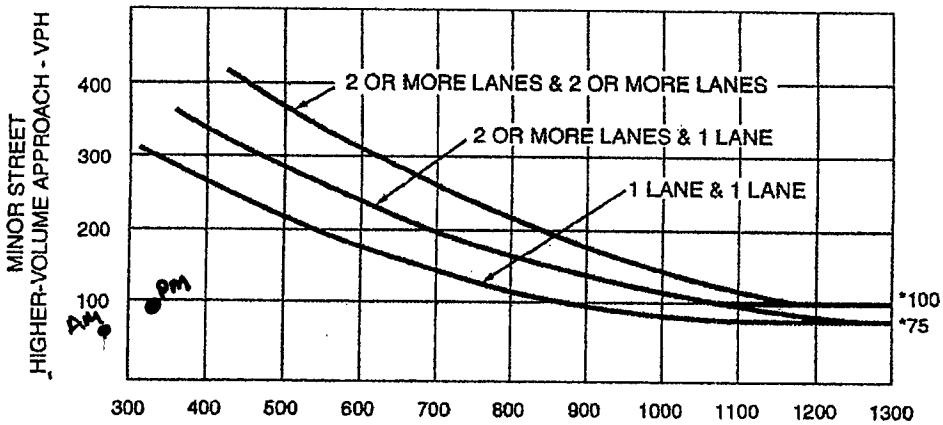


MAJOR STREET—TOTAL OF BOTH APPROACHES—
VEHICLES PER HOUR (VPH)

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

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE ~~70~~ 64 km/h OR ABOVE 40 mph ON MAJOR STREET)



MAJOR STREET—TOTAL OF BOTH APPROACHES—
VEHICLES PER HOUR (VPH)

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 4)

WARRANT 2 - Four Hour Vehicular Volume **SATISFIED* YES ☐ NO ☒**

Record hourly vehicular volumes for any four hours of an average day.

APPROACH LANES	One	2 or More	7AM	~~8AM~~	~~4PM~~	~~5PM~~ Hour
Both Approaches - Major Street		X	343	680	708	625
Higher Approach - Minor Street		X	212	420	540	491

Major St: Airway Rd
Minor St: Paseo De Las Americas

*All plotted points fall above the curves in Figure 4C-1. (URBAN AREAS)	Yes ☐ No ☐
OR, All plotted points fall above the curves in Figure 4C-2. (RURAL AREAS)	Yes ☐ No ☒

WARRANT 3 - Peak Hour
(Part A or Part B must be satisfied) **SATISFIED YES ☒ NO ☐**

PART A **SATISFIED YES ☒ NO ☐**

(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

1. The total delay experienced for traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; AND	Yes ☒ No ☐
2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND	Yes ☒ No ☐
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.	Yes ☒ No ☐

PART B **SATISFIED YES ☐ NO ☒**

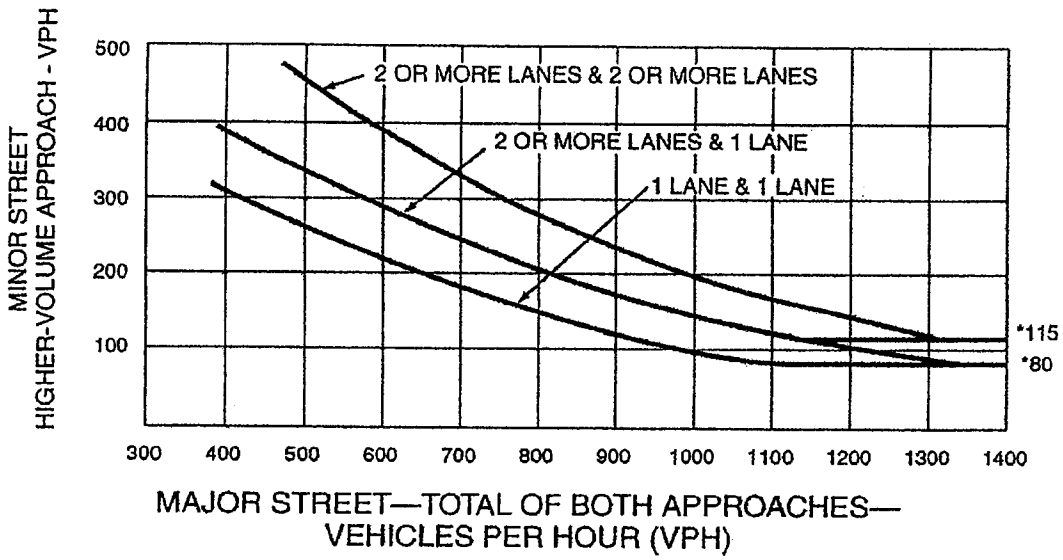
APPROACH LANES	One	2 or More	AM	~~PM~~ Hour
Both Approaches - Major Street		X	680	760
Higher Approach - Minor Street		X	420	540

The plotted point falls above the curve in Figure 4C-3.	Yes ☐ No ☐
OR, The plotted point falls above the curve in Figure 4C-4.	Yes ☒ No ☐

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Cumulative (2020) - Airway Road/Paseo De Las Americas

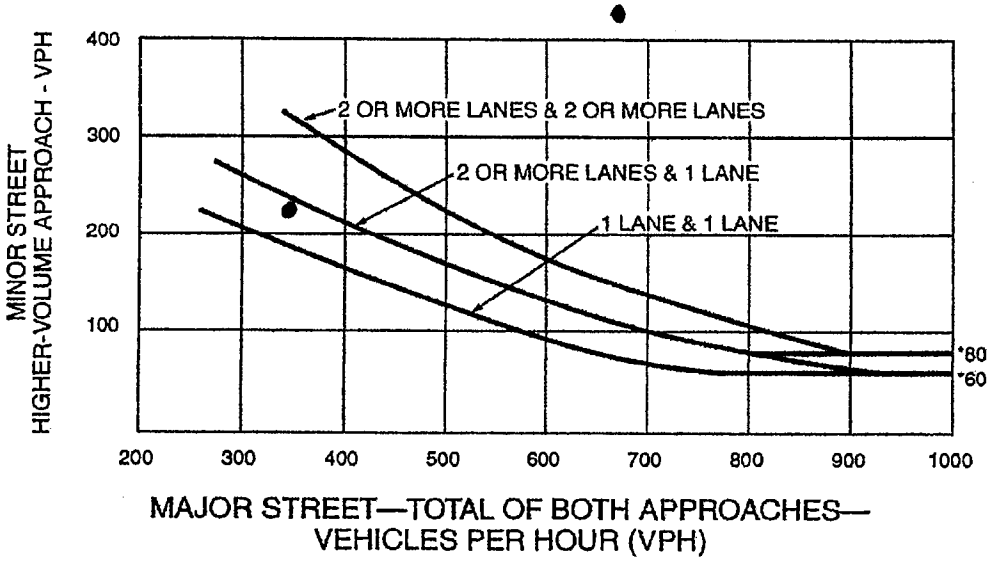
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

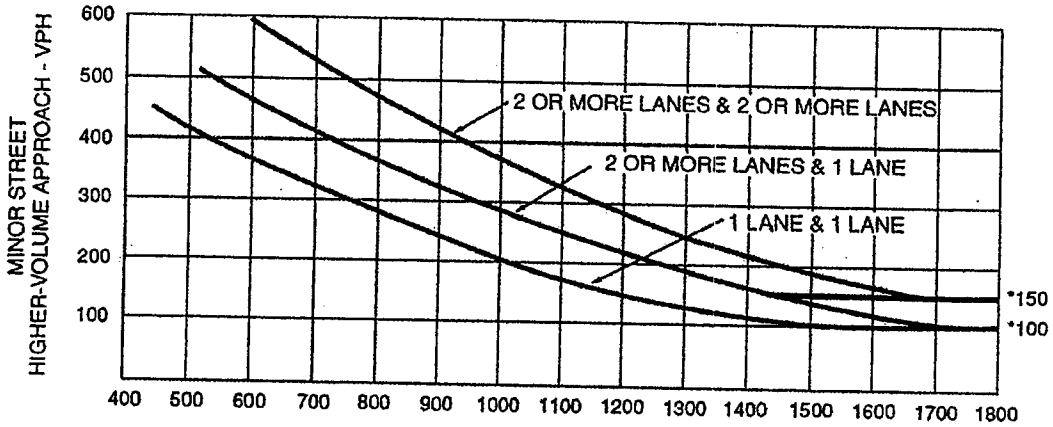
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE ~~70~~ 64 km/h OR ABOVE 40 mph ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

Cumulative (2020) - Airway Road/Paseo De Las Americas

Figure 4C-3. Warrant 3, Peak Hour

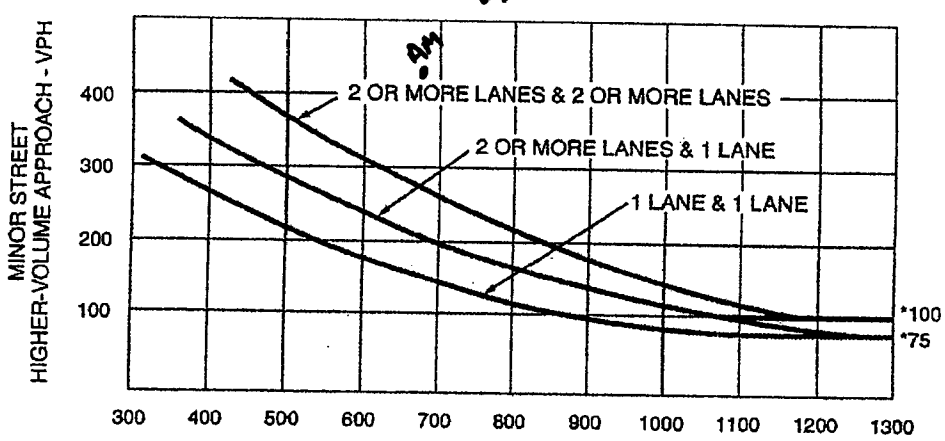


MAJOR STREET—TOTAL OF BOTH APPROACHES—
VEHICLES PER HOUR (VPH)

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

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE ~~70~~ 64 km/h OR ABOVE 40 mph ON MAJOR STREET)



MAJOR STREET—TOTAL OF BOTH APPROACHES—
VEHICLES PER HOUR (VPH)

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Siempre Viva Road/Michael Faraday Drive

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 4)

WARRANT 2 - Four Hour Vehicular Volume **SATISFIED* YES ☐ NO ☒**

Record hourly vehicular volumes for any four hours of an average day.

APPROACH LANES	One	2 or More	7AM	8AM	4PM	5PM	Hour
Both Approaches - Major Street		X	213	192	322	297	
Higher Approach - Minor Street	X		16	39	50	89	

*All plotted points fall above the curves in Figure 4C-1. (URBAN AREAS)	Yes ☐ No ☐
OR, All plotted points fall above the curves in Figure 4C-2. (RURAL AREAS)	Yes ☐ No ☒

WARRANT 3 - Peak Hour **SATISFIED YES ☐ NO ☒**
(Part A or Part B must be satisfied)

PART A **SATISFIED YES ☐ NO ☒**
(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

1. The total delay experienced for traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; AND	Yes ☐ No ☒
2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND	Yes ☐ No ☒
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.	Yes ☐ No ☒

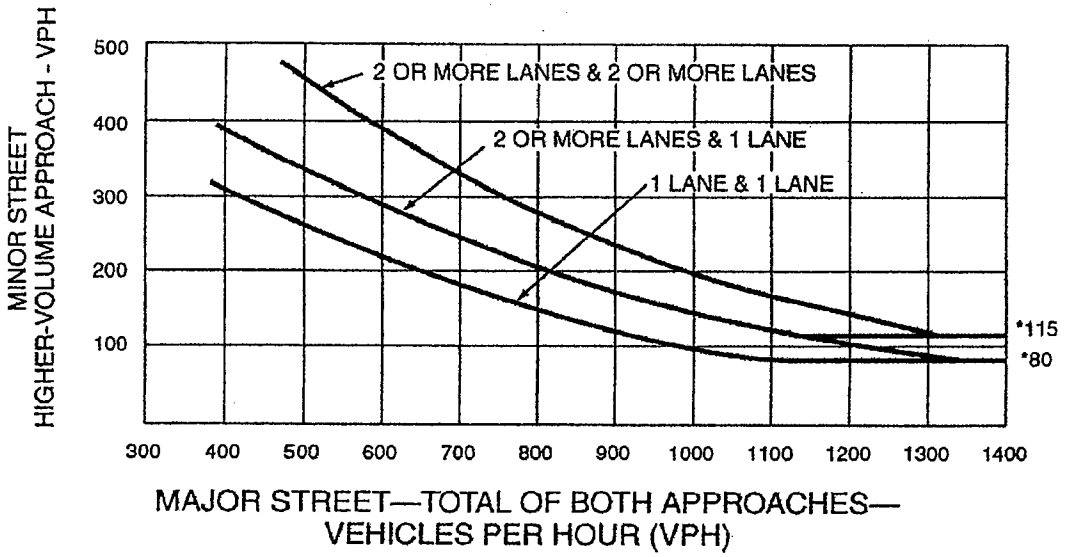
PART B **SATISFIED YES ☐ NO ☒**

APPROACH LANES	One	2 or More	AM	PM	Hour
Both Approaches - Major Street		X	192	328	
Higher Approach - Minor Street	X		39	67	

The plotted point falls above the curve in Figure 4C-3.	Yes ☐ No ☐
OR, The plotted point falls above the curve in Figure 4C-4.	Yes ☐ No ☒

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

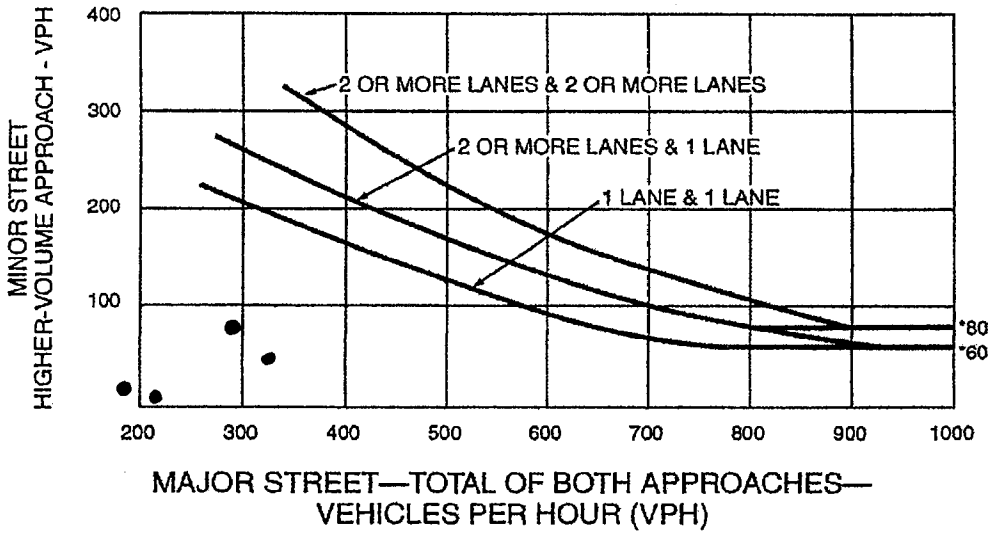
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

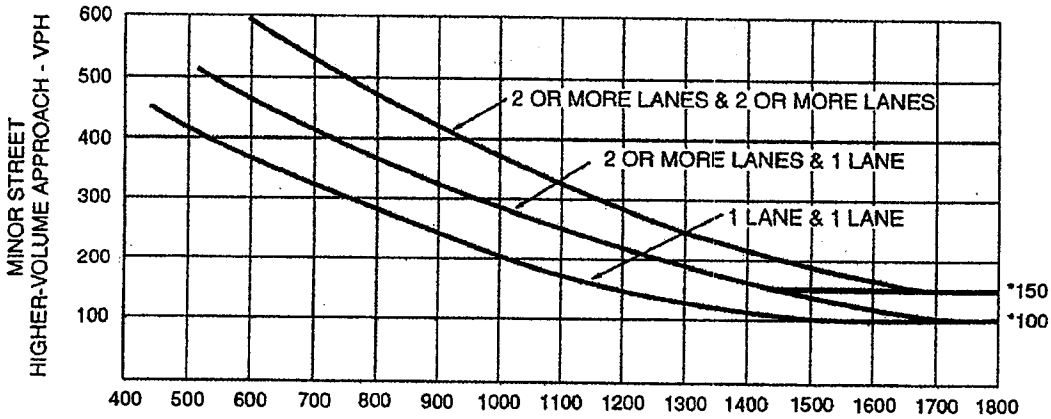
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE ~~70~~ 64 km/h OR ABOVE 40 mph ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

Existing - Siempre Viva Road/Michael Faraday Drive

Figure 4C-3. Warrant 3, Peak Hour

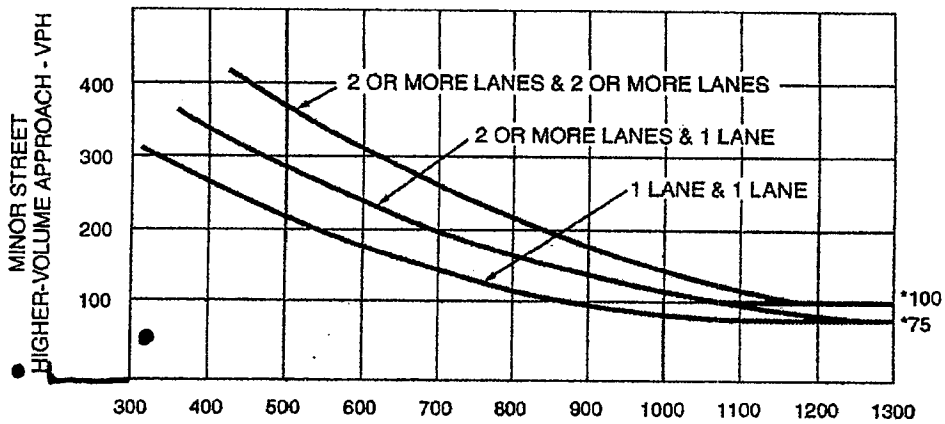


MAJOR STREET—TOTAL OF BOTH APPROACHES—
VEHICLES PER HOUR (VPH)

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

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE ~~70~~ 64 km/h OR ABOVE 40 mph ON MAJOR STREET)



MAJOR STREET—TOTAL OF BOTH APPROACHES—
VEHICLES PER HOUR (VPH)

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 4)

WARRANT 2 - Four Hour Vehicular Volume **SATISFIED* YES ☐ NO ☒**

Record hourly vehicular volumes for any four hours of an average day.

APPROACH LANES	One	2 or More	7AM	8AM	4PM	5PM	Hour
Both Approaches - Major Street		X	561	506	689	636	
Higher Approach - Minor Street	X		16	39	50	89	

*All plotted points fall above the curves in Figure 4C-1. (URBAN AREAS)	Yes ☐ No ☐
OR, All plotted points fall above the curves in Figure 4C-2. (RURAL AREAS)	Yes ☐ No ☒

WARRANT 3 - Peak Hour **SATISFIED YES ☐ NO ☒**
(Part A or Part B must be satisfied)

PART A **SATISFIED YES ☐ NO ☒**
(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

1. The total delay experienced for traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; AND	Yes ☐ No ☒
2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND	Yes ☐ No ☒
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.	Yes ☐ No ☒

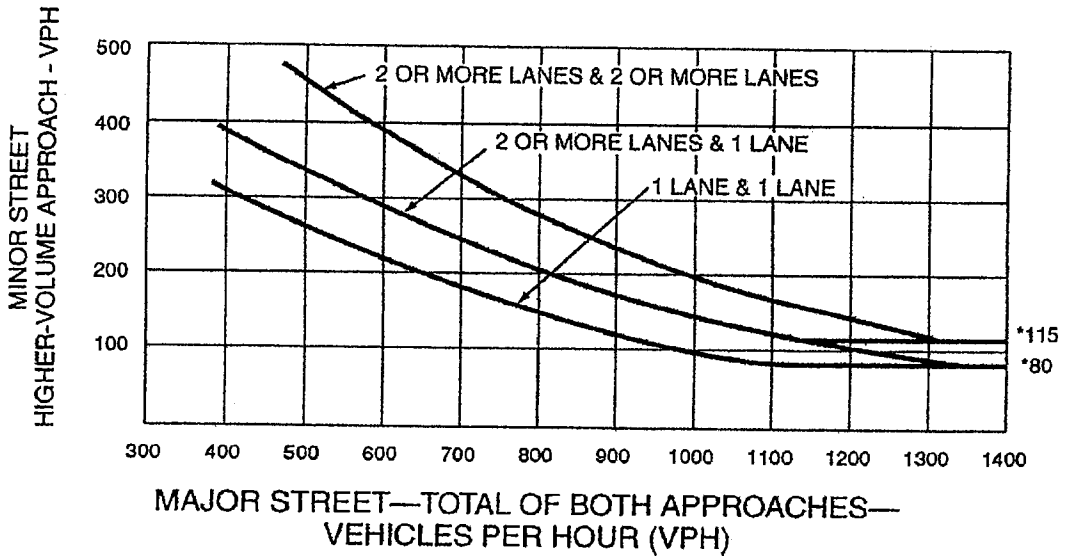
PART B **SATISFIED YES ☐ NO ☒**

APPROACH LANES	One	2 or More	AM	PM	Hour
Both Approaches - Major Street		X	506	702	
Higher Approach - Minor Street	X		39	67	

The plotted point falls above the curve in Figure 4C-3.	Yes ☐ No ☐
OR, The plotted point falls above the curve in Figure 4C-4.	Yes ☐ No ☒

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

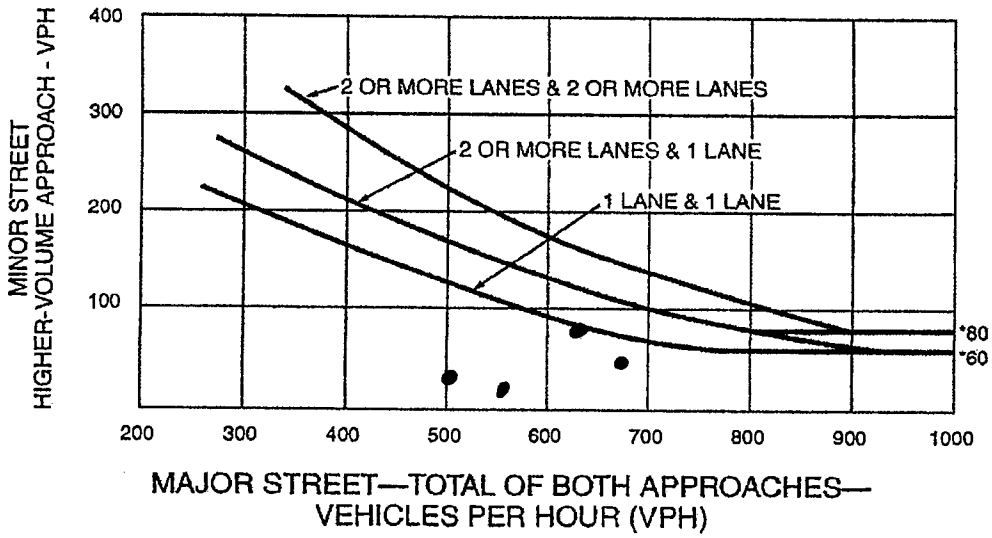
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

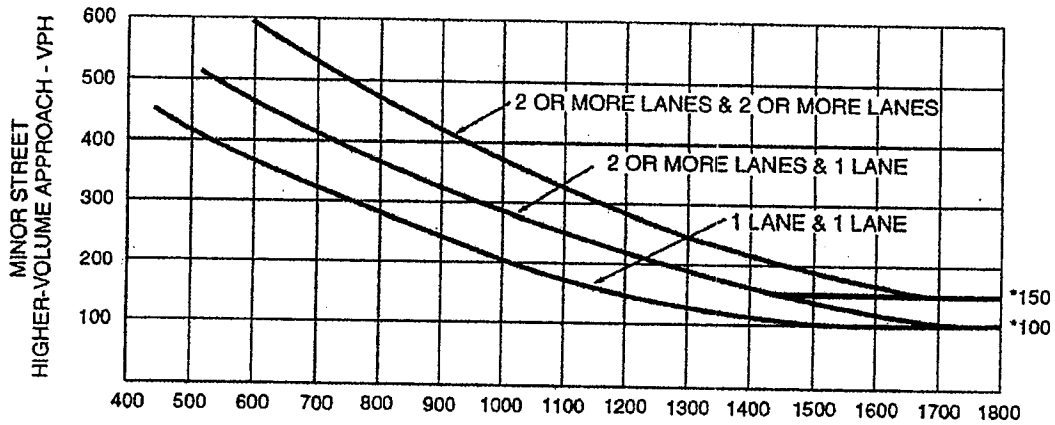
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE ~~70~~ 64 km/h OR ABOVE 40 mph ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

Existing + Phases 1-2 - Siempre Viva Road/Michael Faraday Drive

Figure 4C-3. Warrant 3, Peak Hour

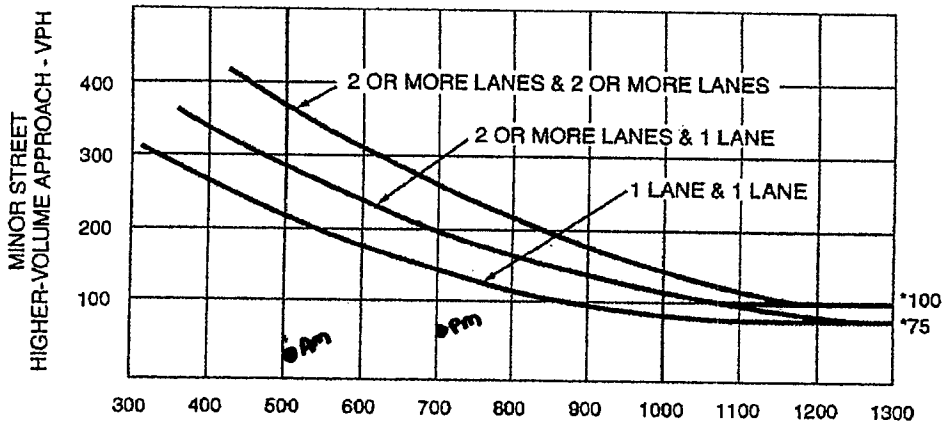


MAJOR STREET—TOTAL OF BOTH APPROACHES—
VEHICLES PER HOUR (VPH)

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

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE ~~70~~ 64 km/h OR ABOVE 40 mph ON MAJOR STREET)



MAJOR STREET—TOTAL OF BOTH APPROACHES—
VEHICLES PER HOUR (VPH)

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 4)

WARRANT 2 - Four Hour Vehicular Volume **SATISFIED* YES ☐ NO ☒**

Record hourly vehicular volumes for any four hours of an average day.

APPROACH LANES	One	2 or More	7AM	8AM	4PM	5PM	Hour
Both Approaches - Major Street		X	1376	1240	1482	1367	
Higher Approach - Minor Street	X		37	90	134	239	

*All plotted points fall above the curves in Figure 4C-1. (URBAN AREAS)	Yes ☐	No ☐
OR, All plotted points fall above the curves in Figure 4C-2. (RURAL AREAS)	Yes ☐	No ☒

WARRANT 3 - Peak Hour **SATISFIED YES ☒ NO ☐**
(Part A or Part B must be satisfied)

PART A **SATISFIED YES ☒ NO ☐**
(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

1. The total delay experienced for traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; AND	Yes ☒	No ☐
2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND	Yes ☒	No ☐
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.	Yes ☒	No ☐

PART B **SATISFIED YES ☒ NO ☐**

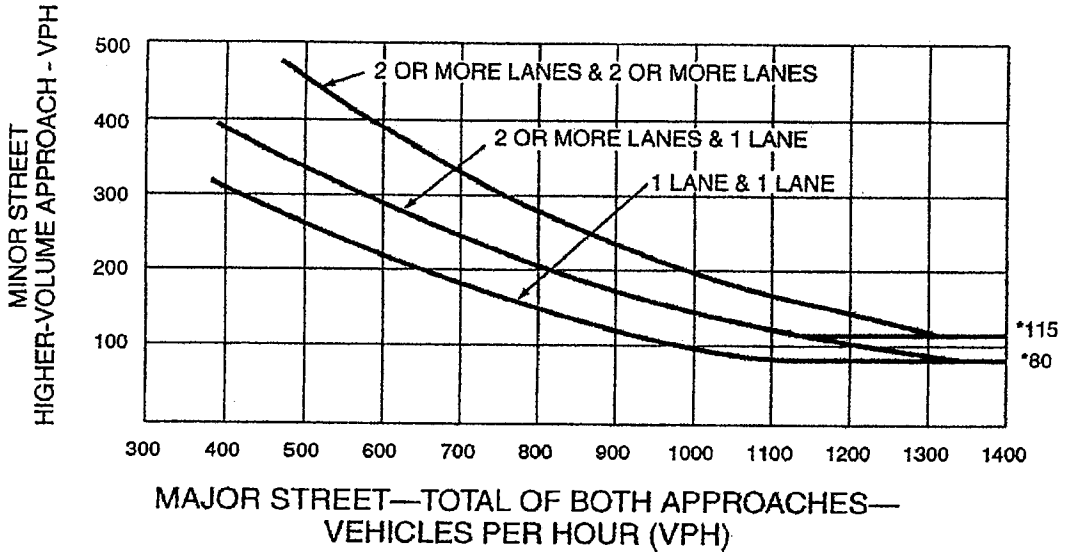
APPROACH LANES	One	2 or More	AM	PM	Hour
Both Approaches - Major Street		X	1240	1510	
Higher Approach - Minor Street	X		90	180	

The plotted point falls above the curve in Figure 4C-3.	Yes ☐	No ☐
OR, The plotted point falls above the curve in Figure 4C-4.	Yes ☒	No ☐

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Cumulative (2020) - Siempre Viva Road/Michael Faraday Drive

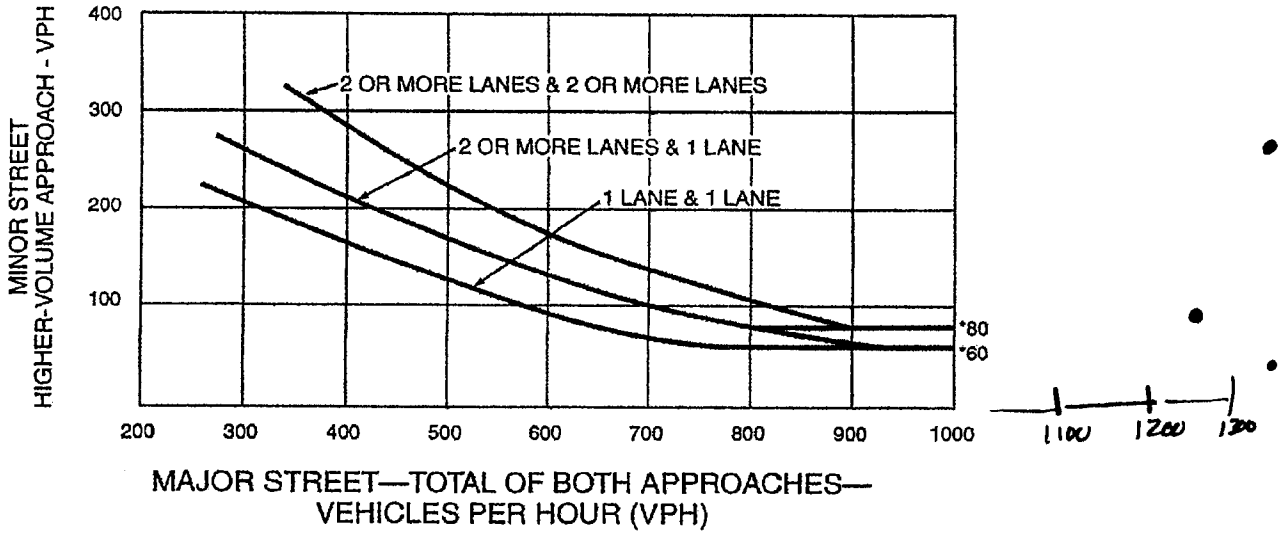
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

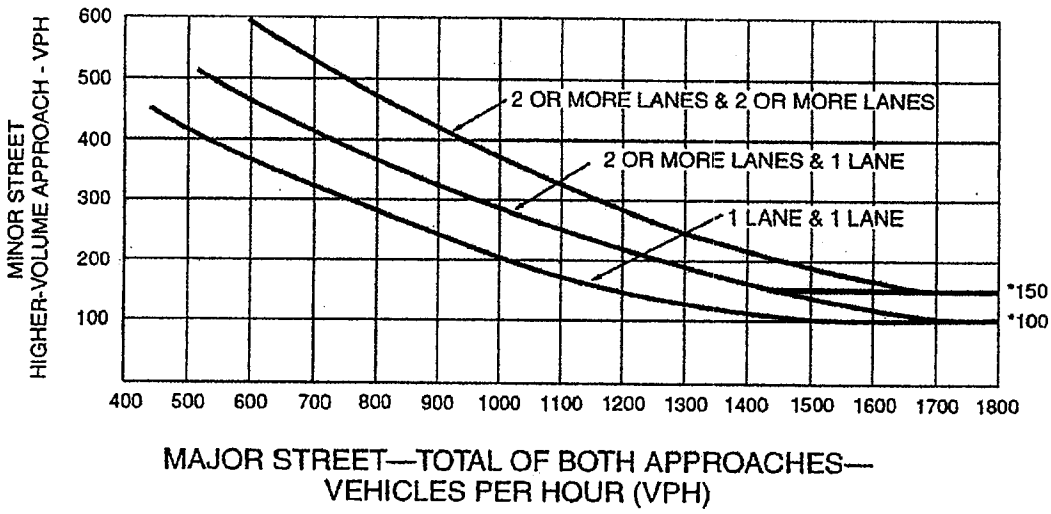
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE ~~70~~ 64 km/h OR ABOVE 40 mph ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

Cumulative (2020) - Siempre Viva Road/Michael Faraday Drive

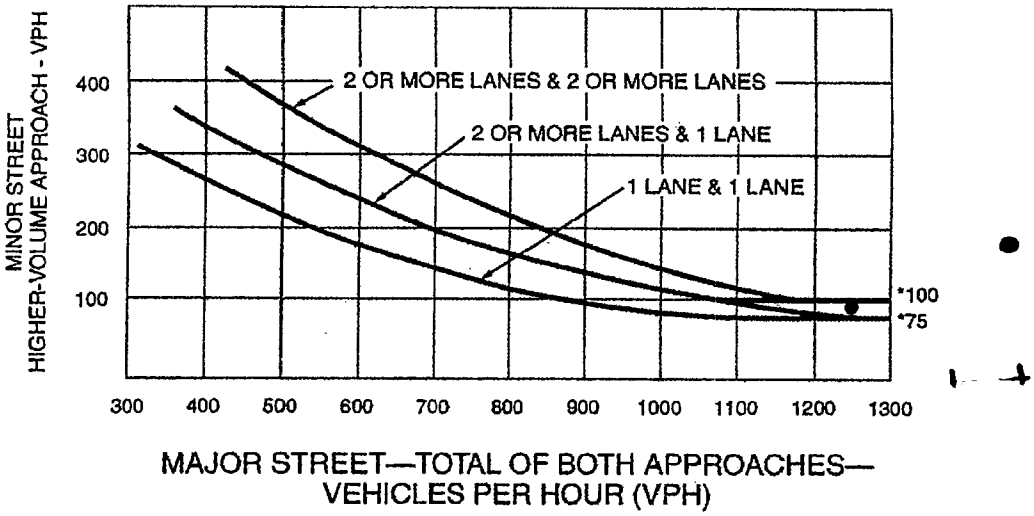
Figure 4C-3. Warrant 3, Peak Hour



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

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE ~~70~~ 64 km/h OR ABOVE 40 mph ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

APPENDIX K

- Mitigation Analysis

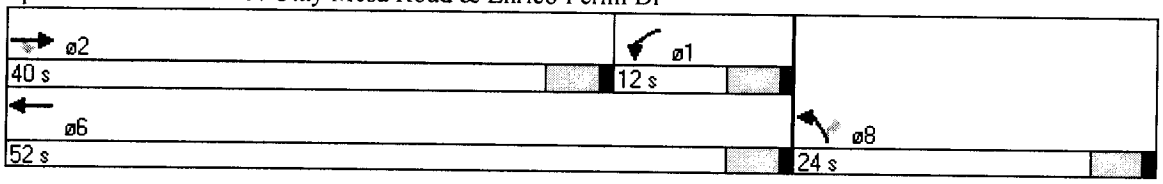
Existing + Phases 1-2 Mitigation

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1863	1583	1770	1863	1770	1583
Satd. Flow (RTOR)		865				47
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	341	890	81	103	295	34
Adj. Flow (vph)	467	1219	111	141	404	47
Lane Group Flow (vph)	467	1219	111	141	404	47
Turn Type		Perm	Prot			Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Total Split (s)	40.0	40.0	12.0	52.0	24.0	24.0
Act Effct Green (s)	39.0	39.0	7.7	48.6	19.4	19.4
Actuated g/C Ratio	0.51	0.51	0.10	0.64	0.26	0.26
v/c Ratio	0.49	0.99	0.62	0.12	0.89	0.11
Control Delay	17.3	29.4	49.0	5.8	49.4	9.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.3	29.4	49.0	5.8	49.4	9.2
LOS	B	C	D	A	D	A
Approach Delay	26.0			24.9	45.2	
Approach LOS	C			C	D	

Intersection Summary

Cycle Length: 76
Actuated Cycle Length: 76
Offset: 38 (50%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.99
Intersection Signal Delay: 29.5 — Intersection LOS: C
Intersection Capacity Utilization 66.3% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 13: Otay Mesa Road & Enrico Fermi Dr

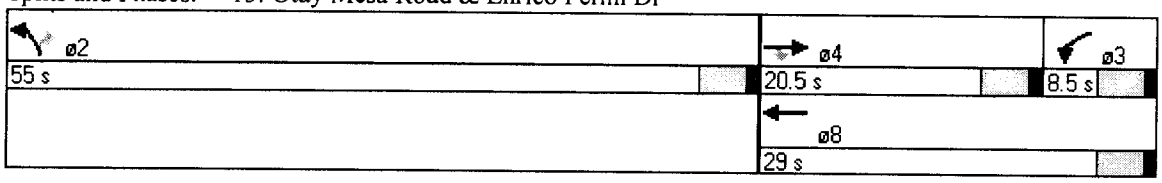


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1863	1583	1770	1863	1770	1583
Satd. Flow (RTOR)		278				97
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	78	242	29	426	930	84
Adj. Flow (vph)	90	278	33	490	1070	97
Lane Group Flow (vph)	90	278	33	490	1070	97
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Total Split (s)	20.5	20.5	8.5	29.0	55.0	55.0
Act Effct Green (s)	16.6	16.6	7.7	24.2	51.8	51.8
Actuated g/C Ratio	0.20	0.20	0.09	0.29	0.62	0.62
v/c Ratio	0.25	0.52	0.20	0.91	0.98	0.10
Control Delay	33.3	14.2	38.9	52.8	35.6	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.3	14.2	38.9	52.8	35.6	1.0
LOS	C	B	D	D	D	A
Approach Delay	18.8			51.9	32.7	
Approach LOS	B			D	C	

Intersection Summary

Cycle Length: 84
Actuated Cycle Length: 84
Offset: 64 (76%), Referenced to phase 2:NBL and 6:, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.98
Intersection Signal Delay: 35.1 — Intersection LOS: D
Intersection Capacity Utilization 68.8% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 13: Otay Mesa Road & Enrico Fermi Dr



Cum 2020 w/SR-905 [1A&1B] -Mitigation

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	60	820	10	30	350	20	10	10	10	10	5	20
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 (vph)	65	891	11	33	380	22	11	11	11	11	5	22
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								Raised			Raised	
Median storage veh)								0			0	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	402			902			1307	1495	451	1049	1489	201
vC1, stage 1 conf vol							1027	1027		457	457	
vC2, stage 2 conf vol							280	467		592	1033	
vCu, unblocked vol	402			902			1307	1495	451	1049	1489	201
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	94			96			92	93	98	95	96	97
cM capacity (veh/h)	1153			749			141	157	556	200	150	806

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	65	594	308	33	254	149	33	38
Volume Left	65	0	0	33	0	0	11	11
Volume Right	0	0	11	0	0	22	11	22
cSH	1153	1700	1700	749	1700	1700	197	324
Volume to Capacity	0.06	0.35	0.18	0.04	0.15	0.09	0.17	0.12
Queue Length 95th (ft)	4	0	0	3	0	0	14	10
Control Delay (s)	8.3	0.0	0.0	10.0	0.0	0.0	26.9	17.6
Lane LOS	A			B			D	C
Approach Delay (s)	0.6			0.8			26.9	17.6
Approach LOS							D	C

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	39.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	20	460	10	10	630	10	10	5	30	20	10	60
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 (vph)	22	500	11	11	685	11	11	5	33	22	11	65
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								Raised			Raised	
Median storage veh)								0			0	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	696			511			984	1266	255	1041	1266	348
vC1, stage 1 conf vol							549	549		712	712	
vC2, stage 2 conf vol							435	717		329	554	
vCu, unblocked vol	696			511			984	1266	255	1041	1266	348
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			99			95	97	96	90	95	90
cM capacity (veh/h)	896			1051			219	207	744	212	210	648

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	22	333	178	11	457	239	49	98
Volume Left	22	0	0	11	0	0	11	22
Volume Right	0	0	11	0	0	11	33	65
cSH	896	1700	1700	1051	1700	1700	409	384
Volume to Capacity	0.02	0.20	0.10	0.01	0.27	0.14	0.12	0.25
Queue Length 95th (ft)	2	0	0	1	0	0	10	25
Control Delay (s)	9.1	0.0	0.0	8.5	0.0	0.0	15.0	17.5
Lane LOS	A			A			C	C
Approach Delay (s)	0.4			0.1			15.0	17.5
Approach LOS							C	C

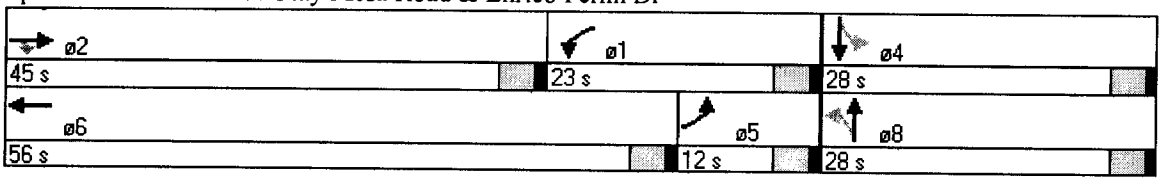
Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	31.5%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.989			0.889			0.925	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1842	0	1770	1656	0	1770	1723	0
Flt Permitted	0.950			0.950			0.722			0.167		
Satd. Flow (perm)	1770	1863	1583	1770	1842	0	1345	1656	0	311	1723	0
Satd. Flow (RTOR)			146		6			145			27	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	70	640	130	240	260	20	120	90	260	20	20	20
Adj. Flow (vph)	96	877	178	329	356	27	164	123	356	27	27	27
Lane Group Flow (vph)	96	877	178	329	383	0	164	479	0	27	54	0
Turn Type	Prot		Perm	Prot			Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2				8			4		
Total Split (s)	12.0	45.0	45.0	23.0	56.0	0.0	28.0	28.0	0.0	28.0	28.0	0.0
Act Effct Green (s)	7.8	42.0	42.0	19.0	55.4		23.0	23.0		23.0	23.0	
Actuated g/C Ratio	0.08	0.44	0.44	0.20	0.58		0.24	0.24		0.24	0.24	
v/c Ratio	0.67	1.08	0.23	0.94	0.36		0.51	0.94		0.36	0.12	
Control Delay	53.4	63.8	0.7	69.9	8.8		35.6	51.6		45.3	17.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	53.4	63.8	0.7	69.9	8.8		35.6	51.6		45.3	17.6	
LOS	D	E	A	E	A		D	D		D	B	
Approach Delay		53.1			37.0			47.5			26.8	
Approach LOS		D			D			D			C	

Intersection Summary

Cycle Length: 96
Actuated Cycle Length: 96
Offset: 47 (49%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.08
Intersection Signal Delay: 46.5 — Intersection LOS: D
Intersection Capacity Utilization 77.7% — ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 13: Otay Mesa Road & Enrico Fermi Dr



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.993			0.867			0.934	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1850	0	1770	1615	0	1770	1740	0
Flt Permitted	0.950			0.950			0.557			0.365		
Satd. Flow (perm)	1770	1863	1583	1770	1850	0	1038	1615	0	680	1740	0
Satd. Flow (RTOR)			83		4			286			44	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	20	420	70	200	420	20	160	30	240	20	90	70
Adj. Flow (vph)	24	500	83	238	500	24	190	36	286	24	107	83
Lane Group Flow (vph)	24	500	83	238	524	0	190	322	0	24	190	0
Turn Type	Prot		Perm	Prot			Perm			Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4				2			6		
Total Split (s)	9.5	37.0	37.0	23.0	50.5	0.0	32.0	32.0	0.0	32.0	32.0	0.0
Act Effct Green (s)	5.5	28.4	28.4	16.4	45.0		35.2	35.2		35.2	35.2	
Actuated g/C Ratio	0.06	0.31	0.31	0.18	0.49		0.38	0.38		0.38	0.38	
v/c Ratio	0.23	0.87	0.15	0.75	0.58		0.48	0.41		0.09	0.27	
Control Delay	46.6	46.2	5.5	45.2	16.9		18.3	2.8		23.6	18.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	46.6	46.2	5.5	45.2	16.9		18.3	2.8		23.6	18.4	
LOS	D	D	A	D	B		B	A		C	B	
Approach Delay		40.6			25.8			8.6			19.0	
Approach LOS		D			C			A			B	

Intersection Summary

Cycle Length: 92
Actuated Cycle Length: 92
Offset: 64 (70%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 25.2 — Intersection LOS: C
Intersection Capacity Utilization 66.2% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 13: Otay Mesa Road & Enrico Fermi Dr

ø2	ø4	ø3
32 s	37 s	23 s

ø6	ø7	ø8
32 s	9.5 s	50.5 s

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Frt		0.941			0.946			0.977			0.945	0.850
Flt Protected	0.950	0.984			0.992			0.981			0.984	
Satd. Flow (prot)	1681	1639	0	0	1748	0	0	1785	0	0	1646	1504
Flt Permitted	0.950	0.984			0.992			0.981			0.984	
Satd. Flow (perm)	1681	1639	0	0	1748	0	0	1785	0	0	1646	1504
Satd. Flow (RTOR)		36			30			9			26	253
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	640	140	190	30	90	80	70	80	30	50	50	290
Adj. Flow (vph)	696	152	207	33	98	87	76	87	33	54	54	315
Lane Group Flow (vph)	526	529	0	0	218	0	0	196	0	0	170	253
Turn Type	Split			Split			Split			Split		Perm
Protected Phases	2	2		6	6		8	8		4	4	
Permitted Phases												4
Total Split (s)	36.0	36.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	20.0
Act Effct Green (s)	39.2	39.2			14.1			13.8			12.9	12.9
Actuated g/C Ratio	0.41	0.41			0.15			0.14			0.13	0.13
v/c Ratio	0.77	0.77			0.77			0.74			0.70	0.60
Control Delay	31.1	29.2			52.4			54.2			48.3	11.3
Queue Delay	0.0	0.0			0.0			0.0			0.0	0.0
Total Delay	31.1	29.2			52.4			54.2			48.3	11.3
LOS	C	C			D			D			D	B
Approach Delay		30.2			52.4			54.2			26.2	
Approach LOS		C			D			D			C	

Intersection Summary

Cycle Length: 96
Actuated Cycle Length: 96
Offset: 69 (72%), Referenced to phase 2:EBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.77
Intersection Signal Delay: 34.3 — Intersection LOS: C
Intersection Capacity Utilization 73.0% — ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 14: Otay Mesa Road & Alta Rd.

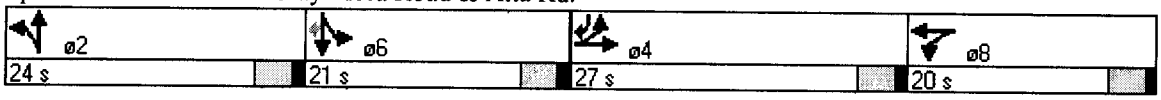
ø2	ø6	ø4	ø8
36 s	20 s	20 s	20 s

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Frt		0.950			0.961			0.984			0.991	0.850
Flt Protected	0.950	0.977			0.991			0.967			0.982	
Satd. Flow (prot)	1681	1642	0	0	1774	0	0	1772	0	0	1722	1504
Flt Permitted	0.950	0.977			0.991			0.967			0.982	
Satd. Flow (perm)	1681	1642	0	0	1774	0	0	1772	0	0	1722	1504
Satd. Flow (RTOR)		26			20			7			3	424
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	400	50	90	30	90	50	180	50	30	50	80	410
Adj. Flow (vph)	435	54	98	33	98	54	196	54	33	54	87	446
Lane Group Flow (vph)	294	293	0	0	185	0	0	283	0	0	150	437
Turn Type	Split			Split			Split			Split		pm+ov
Protected Phases	4	4		8	8		2	2		6	6	4
Permitted Phases												6
Total Split (s)	27.0	27.0	0.0	20.0	20.0	0.0	24.0	24.0	0.0	21.0	21.0	27.0
Act Effct Green (s)	22.0	22.0			13.0			17.8			23.3	49.3
Actuated g/C Ratio	0.24	0.24			0.14			0.19			0.25	0.54
v/c Ratio	0.73	0.71			0.69			0.81			0.34	0.44
Control Delay	27.6	23.4			46.9			53.3			32.7	1.8
Queue Delay	0.0	0.0			0.0			0.0			0.0	0.0
Total Delay	27.6	23.4			46.9			53.3			32.7	1.8
LOS	C	C			D			D			C	A
Approach Delay		25.5			46.9			53.3			9.7	
Approach LOS		C			D			D			A	

Intersection Summary

Cycle Length: 92
Actuated Cycle Length: 92
Offset: 29 (32%), Referenced to phase 6:SBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 27.1 — Intersection LOS: C
Intersection Capacity Utilization 67.7% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 14: Otay Mesa Road & Alta Rd.

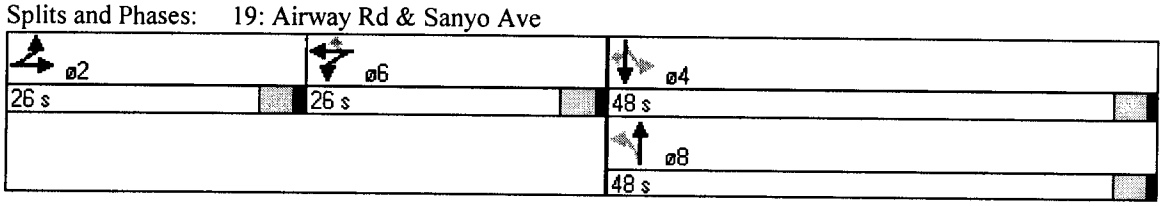


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.978				0.850		0.981				0.850
Flt Protected		0.996		0.950			0.950				0.982	
Satd. Flow (prot)	0	1814	0	1770	1863	1583	1770	1827	0	0	1829	1583
Flt Permitted		0.996		0.950			0.175				0.842	
Satd. Flow (perm)	0	1814	0	1770	1863	1583	326	1827	0	0	1568	1583
Satd. Flow (RTOR)		9				385		9				154
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	20	180	40	20	400	350	40	70	10	210	360	140
Adj. Flow (vph)	22	198	44	22	440	385	44	77	11	231	396	154
Lane Group Flow (vph)	0	264	0	22	440	385	44	88	0	0	627	154
Turn Type	Split			Split		Perm	Perm			Perm		Perm
Protected Phases	2	2		6	6			8			4	
Permitted Phases						6	8			4		4
Total Split (s)	26.0	26.0	0.0	26.0	26.0	26.0	48.0	48.0	0.0	48.0	48.0	48.0
Act Effct Green (s)		18.2		28.0	28.0	28.0	41.8	41.8			41.8	41.8
Actuated g/C Ratio		0.18		0.28	0.28	0.28	0.42	0.42			0.42	0.42
v/c Ratio		0.78		0.04	0.84	0.53	0.32	0.11			0.96	0.20
Control Delay		53.8		20.4	40.2	5.5	26.4	15.4			54.7	3.5
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay		53.8		20.4	40.2	5.5	26.4	15.4			54.7	3.5
LOS		D		C	D	A	C	B			D	A
Approach Delay		53.8			23.9			19.1			44.6	
Approach LOS		D			C			B			D	

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 78 (78%), Referenced to phase 6:WBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.96
Intersection Signal Delay: 35.5 — Intersection LOS: D
Intersection Capacity Utilization 72.8% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 19: Airway Rd & Sanyo Ave

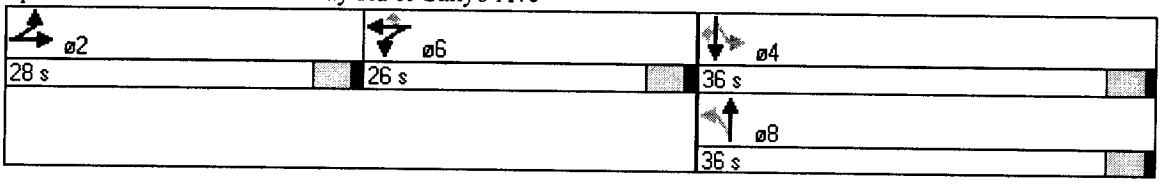


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.992				0.850		0.994				0.850
Flt Protected		0.986			0.997		0.950				0.983	
Satd. Flow (prot)	0	1822	0	0	1857	1583	1770	1852	0	0	1831	1583
Flt Permitted		0.986			0.997		0.403				0.689	
Satd. Flow (perm)	0	1822	0	0	1857	1583	751	1852	0	0	1283	1583
Satd. Flow (RTOR)		3				512		3				91
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	100	230	20	20	370	470	50	230	10	100	190	80
Adj. Flow (vph)	114	261	23	23	420	534	57	261	11	114	216	91
Lane Group Flow (vph)	0	398	0	0	443	534	57	272	0	0	330	91
Turn Type	Split			Split		Perm	Perm			Perm		Perm
Protected Phases	2	2		6	6			8			4	
Permitted Phases						6	8			4		4
Total Split (s)	28.0	28.0	0.0	26.0	26.0	26.0	36.0	36.0	0.0	36.0	36.0	36.0
Act Effct Green (s)		22.5			29.0	29.0	26.5	26.5			26.5	26.5
Actuated g/C Ratio		0.25			0.32	0.32	0.29	0.29			0.29	0.29
v/c Ratio		0.87			0.74	0.62	0.26	0.50			0.87	0.17
Control Delay		52.5			24.9	5.8	25.2	28.2			53.1	5.4
Queue Delay		0.0			0.0	0.0	0.0	0.0			0.0	0.0
Total Delay		52.5			24.9	5.8	25.2	28.2			53.1	5.4
LOS		D			C	A	C	C			D	A
Approach Delay		52.5			14.5			27.7			42.8	
Approach LOS		D			B			C			D	

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 10 (11%), Referenced to phase 6:WBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 29.2 — Intersection LOS: C
Intersection Capacity Utilization 81.0% — ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 19: Airway Rd & Sanyo Ave

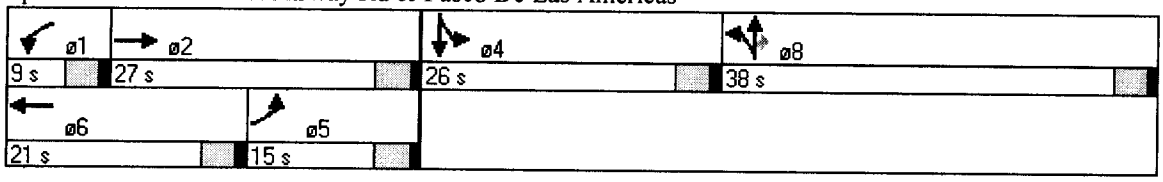


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.960			0.994				0.850		0.905	
Flt Protected	0.950			0.950				0.961			0.998	
Satd. Flow (prot)	1770	3398	0	1770	3518	0	0	1790	1583	0	1682	0
Flt Permitted	0.950			0.950				0.961			0.998	
Satd. Flow (perm)	1770	3398	0	1770	3518	0	0	1790	1583	0	1682	0
Satd. Flow (RTOR)		48			3				33		109	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	90	220	80	20	260	10	320	70	30	10	70	190
Adj. Flow (vph)	100	244	89	22	289	11	356	78	33	11	78	211
Lane Group Flow (vph)	100	333	0	22	300	0	0	434	33	0	300	0
Turn Type	Prot			Prot			Split		Perm	Split		
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases									8			
Total Split (s)	15.0	27.0	0.0	9.0	21.0	0.0	38.0	38.0	38.0	26.0	26.0	0.0
Act Effct Green (s)	10.1	39.9		6.0	32.0			27.7	27.7		16.3	
Actuated g/C Ratio	0.10	0.40		0.06	0.32			0.28	0.28		0.16	
v/c Ratio	0.56	0.24		0.21	0.27			0.88	0.07		0.82	
Control Delay	44.9	19.1		49.6	30.3			53.2	8.3		43.2	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Delay	44.9	19.1		49.6	30.3			53.2	8.3		43.2	
LOS	D	B		D	C			D	A		D	
Approach Delay		25.0			31.6			50.0			43.2	
Approach LOS		C			C			D			D	

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 68 (68%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 37.7 — Intersection LOS: D
Intersection Capacity Utilization 63.1% — ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 20: Airway Rd & Paseo De Las Americas

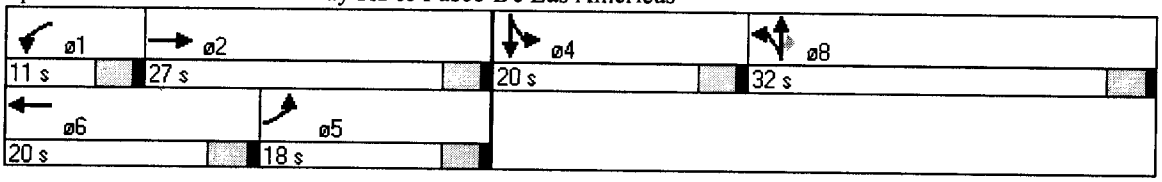


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.955			0.992				0.850		0.932	
Flt Protected	0.950			0.950				0.960			0.997	
Satd. Flow (prot)	1770	3380	0	1770	3511	0	0	1788	1583	0	1731	0
Flt Permitted	0.950			0.950				0.960			0.997	
Satd. Flow (perm)	1770	3380	0	1770	3511	0	0	1788	1583	0	1731	0
Satd. Flow (RTOR)		73			6				34		49	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	110	160	70	60	340	20	430	80	30	10	70	80
Adj. Flow (vph)	126	184	80	69	391	23	494	92	34	11	80	92
Lane Group Flow (vph)	126	264	0	69	414	0	0	586	34	0	183	0
Turn Type	Prot			Prot			Split		Perm	Split		
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases									8			
Total Split (s)	18.0	27.0	0.0	11.0	20.0	0.0	32.0	32.0	32.0	20.0	20.0	0.0
Act Effct Green (s)	12.6	25.2		6.7	19.6			32.2	32.2		11.8	
Actuated g/C Ratio	0.14	0.28		0.07	0.22			0.36	0.36		0.13	
v/c Ratio	0.51	0.26		0.52	0.54			0.92	0.06		0.68	
Control Delay	35.6	18.3		54.6	35.4			50.8	8.0		39.3	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Delay	35.6	18.3		54.6	35.4			50.8	8.0		39.3	
LOS	D	B		D	D			D	A		D	
Approach Delay		23.9			38.1			48.5			39.3	
Approach LOS		C			D			D			D	

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 38.8 — Intersection LOS: D
Intersection Capacity Utilization 66.6% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 20: Airway Rd & Paseo De Las Americas

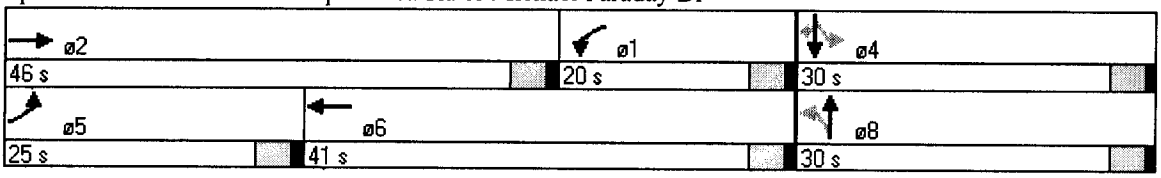


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996			0.990			0.985				0.850
Flt Protected	0.950			0.950				0.968			0.964	
Satd. Flow (prot)	1770	3525	0	1770	3504	0	0	1776	0	0	1796	1583
Flt Permitted	0.950			0.950				0.793			0.786	
Satd. Flow (perm)	1770	3525	0	1770	3504	0	0	1455	0	0	1464	1583
Satd. Flow (RTOR)		4			9			7				63
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	60	690	20	30	410	30	60	20	10	30	10	50
Adj. Flow (vph)	76	873	25	38	519	38	76	25	13	38	13	63
Lane Group Flow (vph)	76	898	0	38	557	0	0	114	0	0	51	63
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		4
Total Split (s)	25.0	46.0	0.0	20.0	41.0	0.0	30.0	30.0	0.0	30.0	30.0	30.0
Act Effct Green (s)	8.8	64.7		12.0	65.9			11.3			11.3	11.3
Actuated g/C Ratio	0.09	0.67		0.12	0.69			0.12			0.12	0.12
v/c Ratio	0.47	0.38		0.17	0.23			0.64			0.29	0.26
Control Delay	40.4	7.5		23.8	2.3			54.0			42.4	14.0
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Delay	40.4	7.5		23.8	2.3			54.0			42.4	14.0
LOS	D	A		C	A			D			D	B
Approach Delay		10.1			3.6			54.0			26.7	
Approach LOS		B			A			D			C	

Intersection Summary

Cycle Length: 96
Actuated Cycle Length: 96
Offset: 78 (81%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.64
Intersection Signal Delay: 11.8 — Intersection LOS: B
Intersection Capacity Utilization 44.7% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 33: Siempre Viva Rd & Michael Faraday Dr

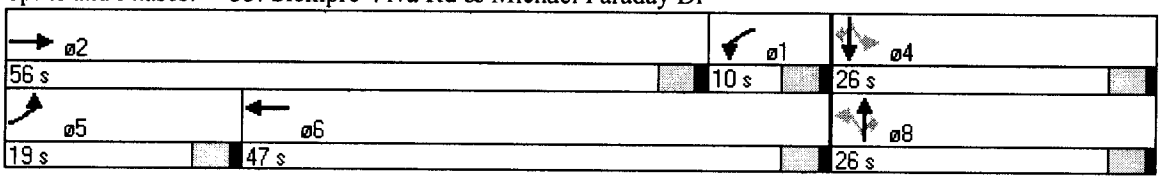


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.973			0.997			0.993	0.850			0.850
Flt Protected	0.950			0.950				0.961			0.971	
Satd. Flow (prot)	1770	3444	0	1770	3529	0	0	1689	1504	0	1809	1583
Flt Permitted	0.950			0.950				0.727			0.796	
Satd. Flow (perm)	1770	3444	0	1770	3529	0	0	1277	1504	0	1483	1583
Satd. Flow (RTOR)		46			3			2	307			151
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	120	280	60	20	1010	20	110	20	270	30	20	130
Adj. Flow (vph)	140	326	70	23	1174	23	128	23	314	35	23	151
Lane Group Flow (vph)	140	396	0	23	1197	0	0	158	307	0	58	151
Turn Type	Prot			Prot			Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		4
Total Split (s)	19.0	56.0	0.0	10.0	47.0	0.0	26.0	26.0	26.0	26.0	26.0	26.0
Act Effct Green (s)	11.9	64.5		5.9	52.6			15.5	15.5		15.5	15.5
Actuated g/C Ratio	0.13	0.70		0.06	0.57			0.17	0.17		0.17	0.17
v/c Ratio	0.61	0.16		0.20	0.59			0.73	0.60		0.23	0.39
Control Delay	41.9	2.5		43.7	16.0			54.2	9.3		30.5	7.0
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay	41.9	2.5		43.7	16.0			54.2	9.3		30.5	7.0
LOS	D	A		D	B			D	A		C	A
Approach Delay		12.8			16.6			24.5			13.5	
Approach LOS		B			B			C			B	

Intersection Summary

Cycle Length: 92
Actuated Cycle Length: 92
Offset: 19 (21%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.73
Intersection Signal Delay: 17.0 — Intersection LOS: B
Intersection Capacity Utilization 64.5% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 33: Siempre Viva Rd & Michael Faraday Dr



APPENDIX L

- Caltrans Striping Concepts for Otay Mesa Rd btwn Piper Ranch and Harvest
- Proposed Improvements for Otay Mesa Road btwn Sanyo and Enrico Fermi
- Caltrans Striping Concept for La Media Road btwn Otay Mesa and Airway
- Caltrans Striping Concepts for Airway Road btwn Harvest and Sanyo
- Caltrans Striping Concept for Britannia Blvd btwn Otay Mesa and Airway

Caltrans Striping Concepts for Otay Mesa Rd btwn Piper Ranch and Harvest

NOTES:

1. ALL STRIPING AND PAVEMENT MARKINGS SHALL BE THERMOPLASTIC, UNLESS OTHERWISE NOTED.
2. ALL CROSSWALKS SHALL BE 3 METERS WIDE, INSIDE WIDTH.
3. ALL CHEVRON AND DIAGONAL MARKINGS SHALL BE CONSTRUCTED AT A 45 DEGREE ANGLE FROM THE ETW.
4. EXACT LOCATION OF MARKINGS TO BE DETERMINED BY THE ENGINEER IN THE FIELD.
5. FOR DETAIL 25 Mod, 25A Mod AND DETAIL 27B Mod, SEE SHEET PDD-1.
6. ALL CONCRETE BARRIERS SHALL BE INSTALLED WITH BARRIER MARKERS (SEE SHEET PDD-1).
7. ALL GUARD RAILING SYSTEMS SHALL BE INSTALLED WITH A MINIMUM OF THREE FLEXIBLE GUARD RAILING DELINEATORS (TYPE F) (SEE CONSTRUCTION DETAIL SHEET C-57).

LEGEND:

- • OBJECT MARKER, TYPE Q
- ⊥F TYPE F DELINEATOR, CLASS 1
- ⊥F* MODIFIED DELINEATOR TO BE MOUNTED ON CONCRETE BARRIER OR WALL. (F* DENOTES REFLECTIVE COLOR OF MODIFIED DELINEATOR ONLY). SEE STANDARD PLANS.
- CHANGE OF PAVEMENT DELINEATION DETAILS
- (X) DETAIL NUMBER PER CALTRANS STANDARD PLANS
- (P) PAINT TRAFFIC STRIPE
- BL→ BIKE LANE PAVEMENT MARKING

Caltrans Metric

REGISTERED CIVIL ENGINEER 08SEP06 DATE

Ronald R. Fromknecht No. 45704 Exp. 12-31-06 CIVIL STATE OF CALIFORNIA REGISTERED PROFESSIONAL ENGINEER

PLANS APPROVAL DATE

California Transportation Ventures, Inc.
880 Kuhn Drive
Chula Vista, CA 91914

FPL and Associates, Inc.
10 Corporate Park, Suite 310
Irvine, CA 92606

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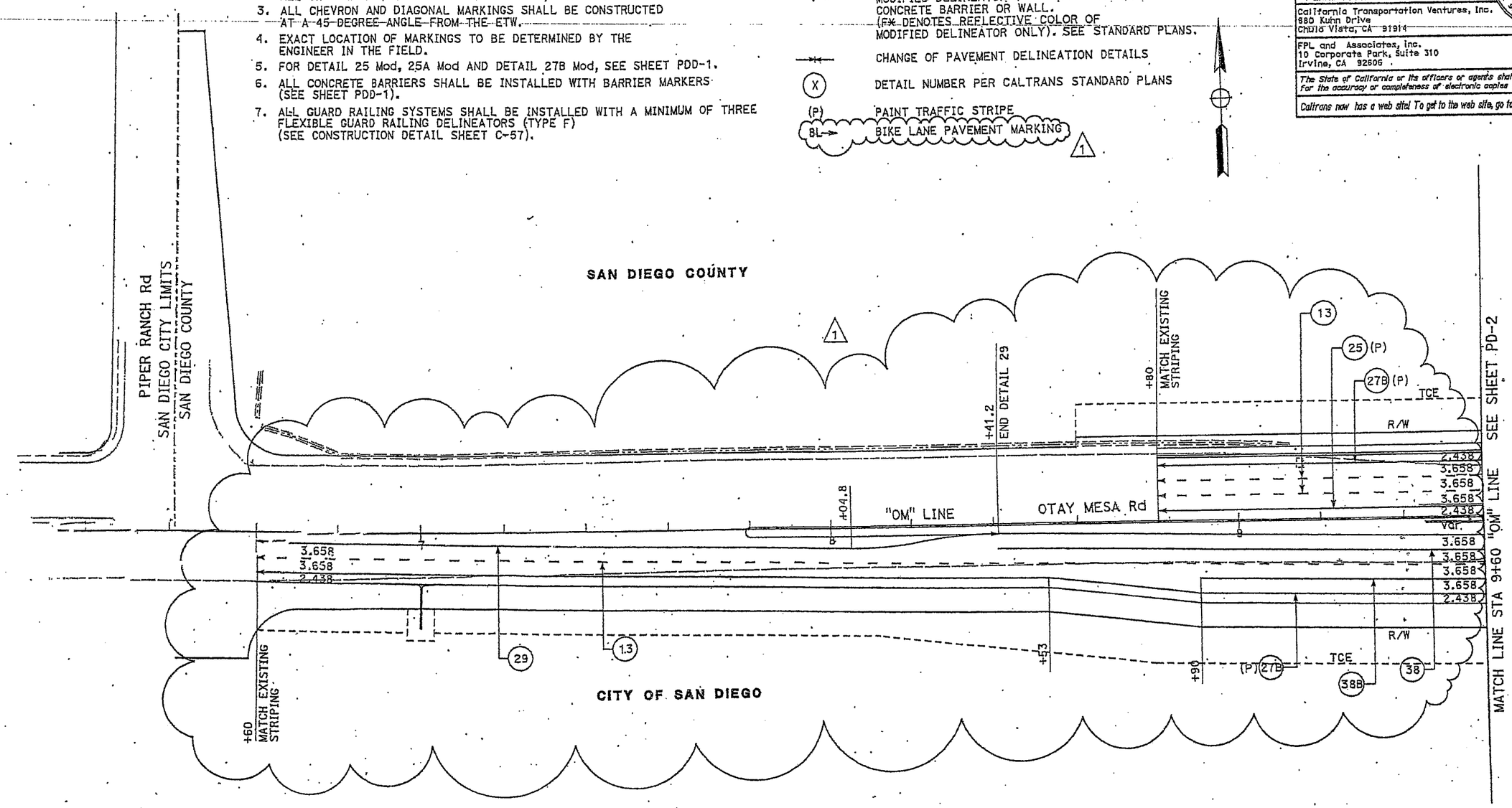

PAVEMENT DELINEATION PLAN

SCALE 1:500

L-2 PD-1

THIS PLAN ACCURATE FOR PAVEMENT DELINEATION WORK ONLY

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

FOR REDUCED PLANS ORIGINAL 0 20 40 60 80.

ISSUE RECORD		
No.	PURPOSE	DATE
0	RELEASED FOR CONSTRUCTION	09SEP05
1	RFR C-044	XXXXXX06

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

DESIGN OVERSIGHT: RAMON MARTINEZ

CALCULATED/DESIGNED BY | CHECKED BY | DATE | REVISED BY | DATE REVISED

LAST REVISION 09-08-06 | DATE PLOTTED => 9/12/2006 | TIME PLOTTED => 10:42:48 AM

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USERNAME => Eddie Tang

SEGMENT 1A

11	SD	125	2.7/8.2	

Ronald R Fromknecht 08SEP06
REGISTERED CIVIL ENGINEER DATE

REGISTERED PROFESSIONAL ENGINEER Ronald R. Fromknecht No. 45704 Exp. 12-31-06 CIVIL STATE OF CALIFORNIA

PLANS APPROVAL DATE

California Transportation Ventures, Inc.
880 Kuhn Drive
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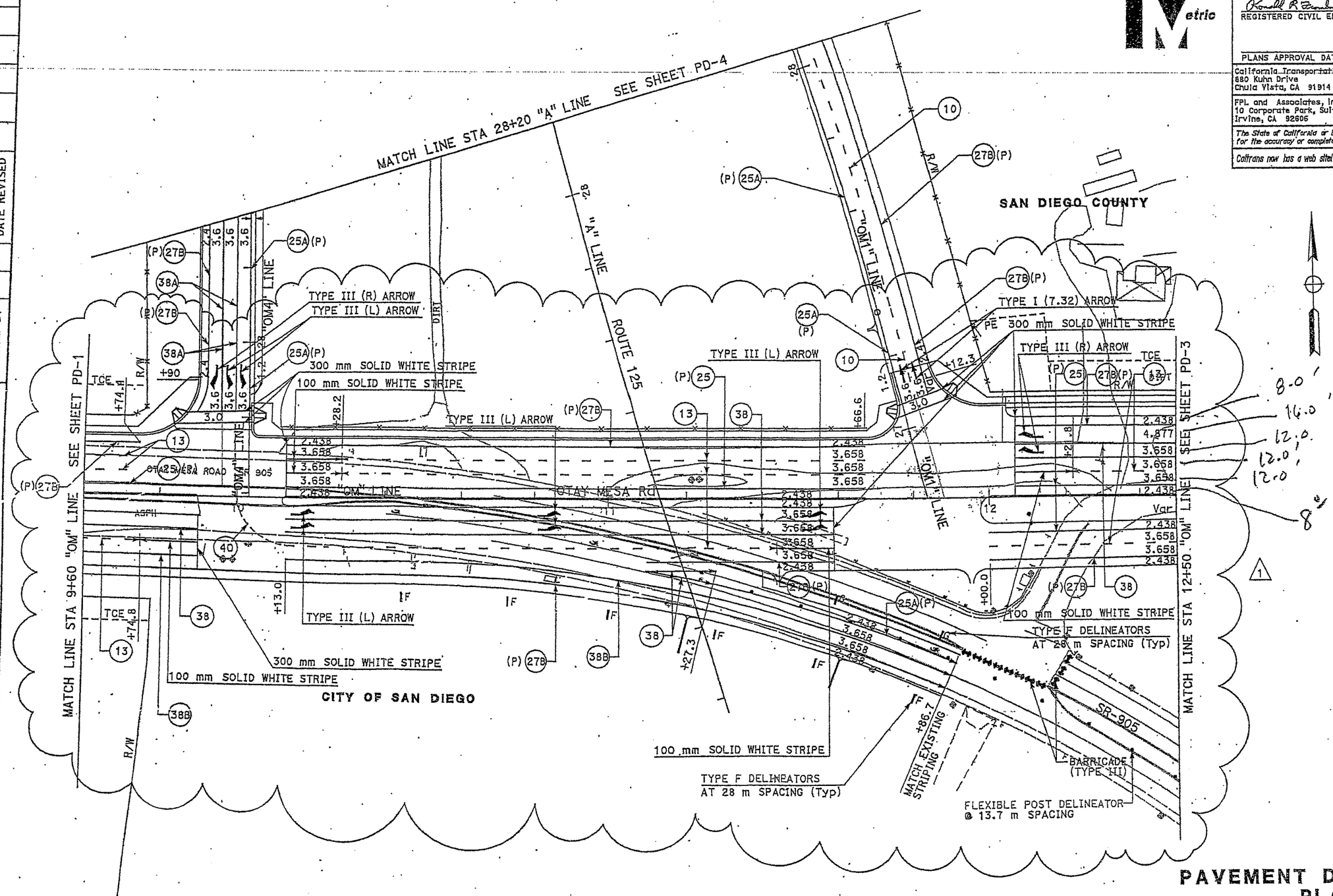
Caltrans Metric



PAVEMENT DELINEATION PLAN

SCALE 1:500

L-3
PD-2

ISSUE RECORD		
No.	PURPOSE	DATE
0	RELEASED FOR CONSTRUCTION	09SEP05
1	RFR C-044	XXXXXX06

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

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LAST REVISION 09-08-06 | DATE PLOTTED => 9/12/2006 | TIME PLOTTED => 10:56:26 AM

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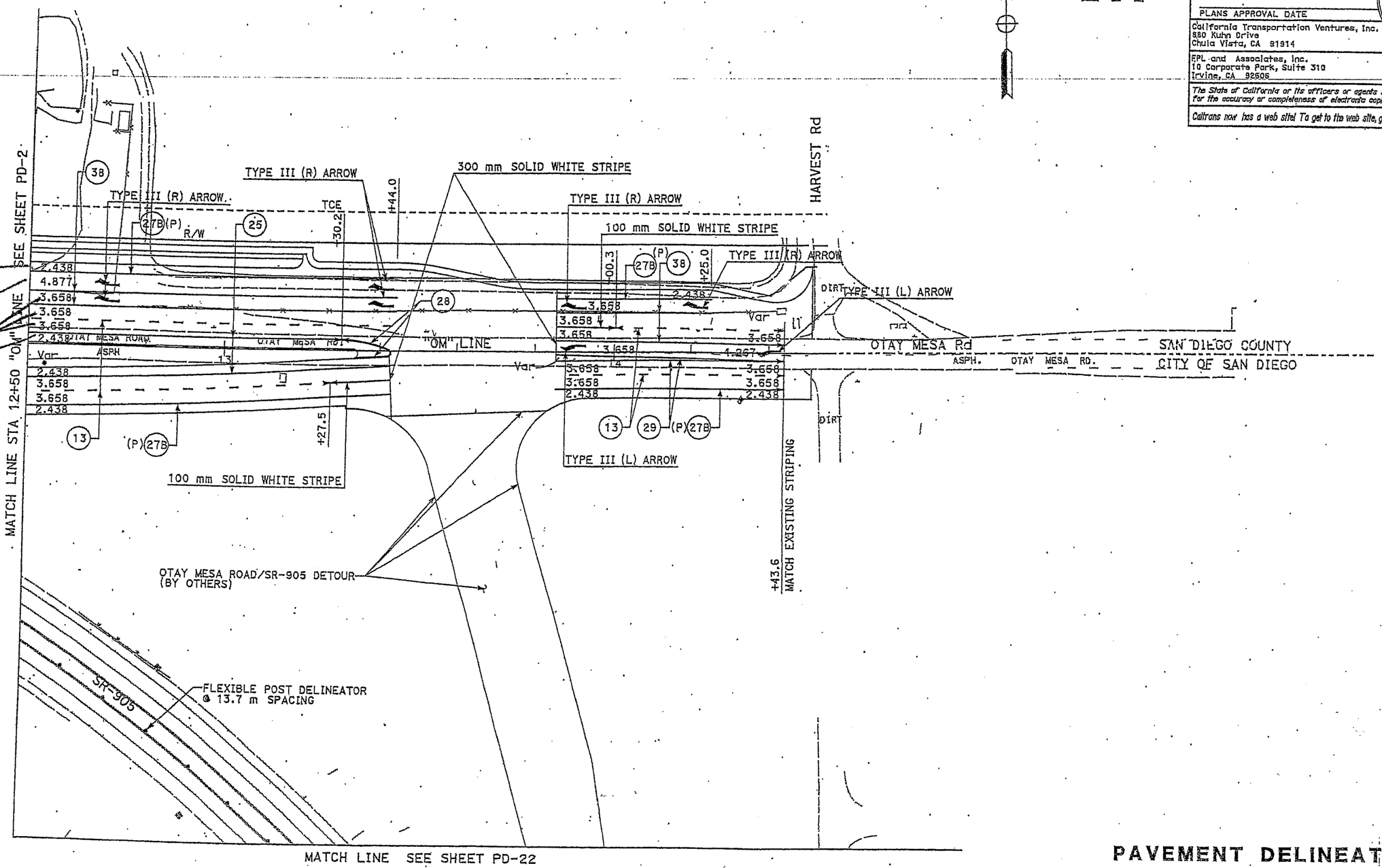

PLANS APPROVAL DATE

Ronald R. Fromknecht
No. 45704
Exp. 12-31-06
CIVIL
STATE OF CALIFORNIA

California Transportation Ventures, Inc.
880 Kuhn Drive
Chula Vista, CA 91914

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Irvine, CA 92606

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DESIGN OVERSIGHT

RAMON MARTINEZ

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

ISSUE RECORD		
No.	PURPOSE	DATE
0	RELEASED FOR CONST. (RFR C-044)	XXXXXX06

PAVEMENT DELINEATION PLAN

SCALE 1:500

L-4

PD-3

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USERNAME => Eddie Tang
DGN FILE => ...\tanq03.dgn

CU 11274

EA 232301

SEGMENT 1A

LAST REVISION 09-08-06

DATE PLOTTED => 9/12/2006
TIME PLOTTED => 10:14:12 AM

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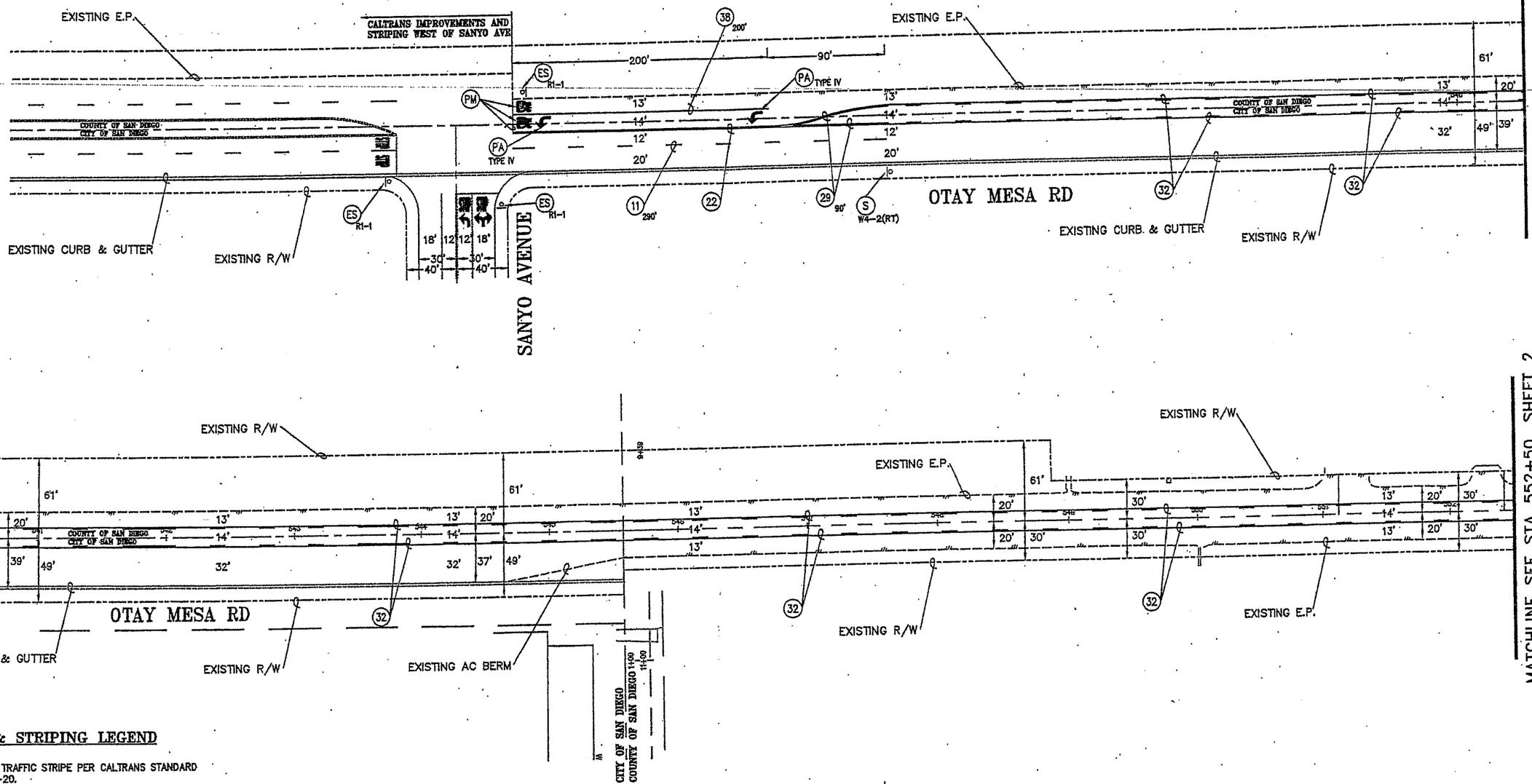
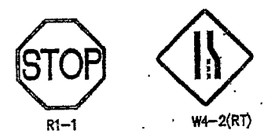
Proposed Improvements for Otay Mesa Road btwn Sanyo and Enrico Fermi



SIGNING & STRIPING LEGEND

- (N) = INSTALL TRAFFIC STRIPE PER CALTRANS STANDARD PLAN A-20.
  - N — REPRESENTS DETAIL NUMBER. (PER CALTRANS STD. PLAN A-20)
- (ES) = EXISTING SIGN SEE CALIFORNIA MUTCD
  - XX — REPRESENTS SIGN. (PER CALTRANS MUTCD)
- (S) = INSTALL SIGN PER CALIFORNIA MUTCD
  - XX — REPRESENTS SIGN. (PER CALTRANS MUTCD)
- (PA) = INSTALL TYPE IV (LT OR RT) ARROW PER CALTRANS STANDARD PLAN A24A.
- (PM) = PAINT STOP LEGEND AND 12" WHITE LIMIT LINE.
- (11) = INSTALL 4" WHITE SKIP LINE, PER DETAIL 11 OF CALTRANS STANDARD PLAN.
- (22) = INSTALL DOUBLE YELLOW CENTERLINE WITH PAVEMENT MARKERS PER DETAIL 22 OF CALTRANS STANDARD PLAN.
- (29) = INSTALL DOUBLE YELLOW MEDIAN WITH PAVEMENT MARKERS PER DETAIL 29 OF CALTRANS STANDARD PLAN.
- (32) = INSTALL TWO WAY LEFT TURN LANE PER DETAIL 32 OF CALTRANS STANDARD PLAN.
- (38) = INSTALL CHANNELIZING LANE WITH PAVEMENT MARKERS PER DETAIL 38 CALTRANS STANDARD PLAN.

SIGNS LEGEND



SCALE: 1" = 40'

0 40 80

PLANS PREPARED UNDER THE SUPERVISION OF:

BILL E. DARNELL R.C.E. No. 22338 DATE
DESIGN ENGINEER LICENSE EXPIRES 9-30-09

Darnell & ASSOCIATES, INC.
1446 FRONT STREET, THIRD FLOOR
SAN DIEGO, CA 92101
(619) 233-9373

DWG:051202CP-1A.dwg DATE: 02-06-09 BY: SN/AM/SN

COUNTY APPROVED CHANGES			
No.	Description	Approved by	Date

BENCH MARK
DESCRIPTION: X
LOCATION: X
X
RECORD FROM: X
ELEVATION: X DATUM: X

PRIVATE CONTRACT

SHEET 1	COUNTY OF SAN DIEGO DEPARTMENT OF PUBLIC WORKS	2 SHEETS

CHANNELIZATION CONCEPT

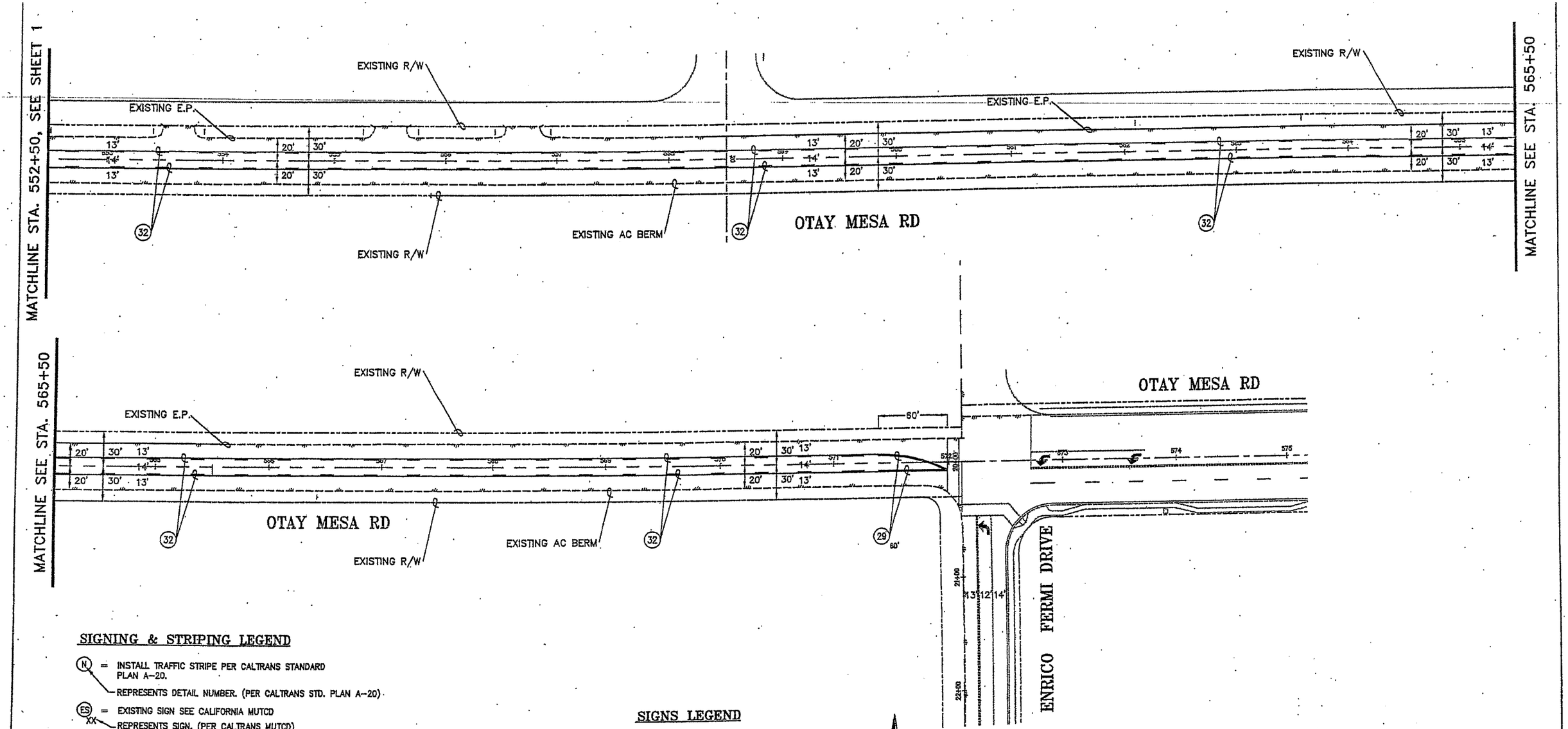
SANYO AVE TO ENRICO FERMI DRIVE

CALIFORNIA COORDIANTE INDEX 206-1791

Recommended for approval: | Approved: FOR DIRECTOR OF PUBLIC WORKS

Engineer of work: By: Date: R.C.E. | Checked by: Approved date:

L-6



SIGNING & STRIPING LEGEND

- (N) = INSTALL TRAFFIC STRIPE PER CALTRANS STANDARD PLAN A-20.
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- (PM) = PAINT STOP LEGEND AND 12" WHITE LIMIT LINE.
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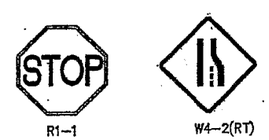
- (38) = INSTALL CHANNELIZING LANE WITH PAVEMENT MARKERS PER DETAIL 38 CALTRANS STANDARD PLAN.

SIGNS LEGEND



SCALE: 1" = 40'

0 40 80

PLANS PREPARED UNDER THE SUPERVISION OF:

BILL E. DARNELL R.C.E. No. 22338 DATE
DESIGN ENGINEER LICENSE EXPIRES 9-30-09

Darnell & ASSOCIATES, INC.
1446 FRONT STREET, THIRD FLOOR
SAN DIEGO, CA 92101
(619) 233-9373

DWG:051202CP-1A.dwg | DATE 02-06-09 BY:SN/JM/SN

COUNTY APPROVED CHANGES			
No.	Description	Approved by	Date

BENCH MARK

DESCRIPTION: X
LOCATION: X
RECORD FROM: X
ELEVATION: X DATUM: X

PRIVATE CONTRACT

SHEET 2	COUNTY OF SAN DIEGO DEPARTMENT OF PUBLIC WORKS	2 SHEETS

CHANNELIZATION CONCEPT

SANYO AVE TO ENRICO FERMI DRIVE

CALIFORNIA COORDIANTE INDEX 206-1791

Recommended for approval: | Approved: FOR DIRECTOR OF PUBLIC WORKS

Engineer of work By Date R.C.E. | Checked by: | Approval date:

L-7

Caltrans Striping Concept for La Media Road btwn Otay Mesa and Airway

ST. ANDREWS Ave
"LM02" LINE
"LM03" LINE
"LM04" LINE
"E4" LINE
LA MEDIA RD
300 mm WHITE CROSSWALK
300 mm WHITE LIMIT LINE
200 mm WHITE CROSSHATCH
TYPE I ARROW (7.32)
TYPE IV ARROW (L) (4 EA)
TYPE IV ARROW (R) (3 EA)
"BIKE LANE" PACKAGE (3 EA)
TYPE IV ARROW (R) (2 EA)
TYPE IV ARROW (L) (2 EA)
TYPE VII ARROW (R) (2 EA)
"DIAMOND"
"DIAMOND" (3 EA)
TYPE I (7.32) ARROW (2 EA)

L-9

REGISTERED CIVIL ENGINEER DATE

PHASE 2 PLAN

9-17-07

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER J.P. SIMS No. 49715 Exp. 9-30-08 CIVIL STATE OF CALIFORNIA

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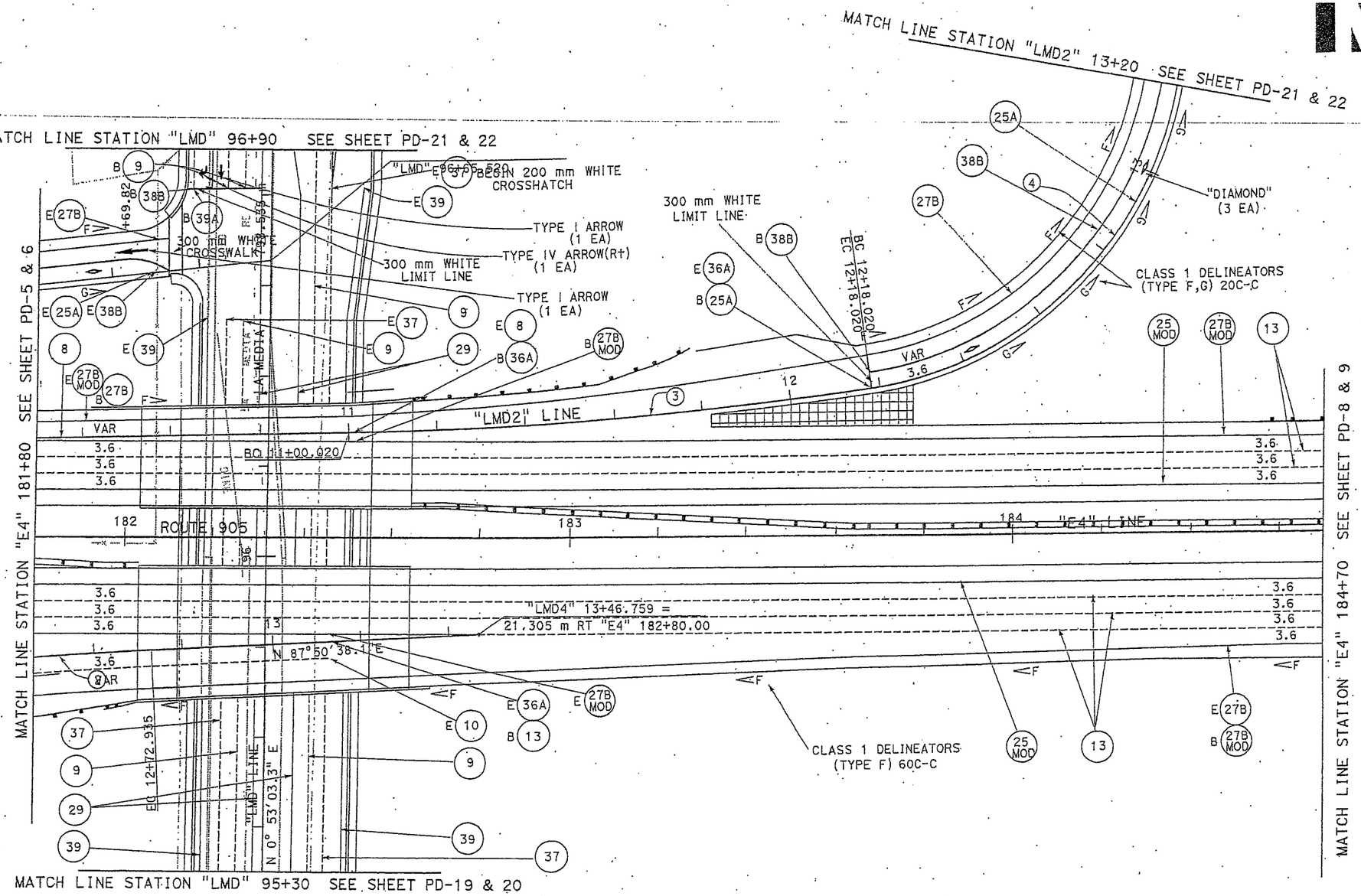

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ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN.

SCALE 1:500

PAVEMENT DELINEATION AND SIGN PLAN

PD- 7

REVISED BY	DATE REVISED

CALCULATED/DESIGNED BY	MBH	DATE
CHECKED BY		

PROJECT ENGINEER J.P. SIMS

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

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LAST REVISION 02-09-06 | OTTED => 17-SEP-2007 | LOTTED => 13:42

CU 11227 | EA 091821

L-10

REGISTERED CIVIL ENGINEER DATE
PHASE 2 PLAN
9-17-07
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER J.P. SIMS No. 49715 Exp. 9-30-08 CIVIL STATE OF CALIFORNIA

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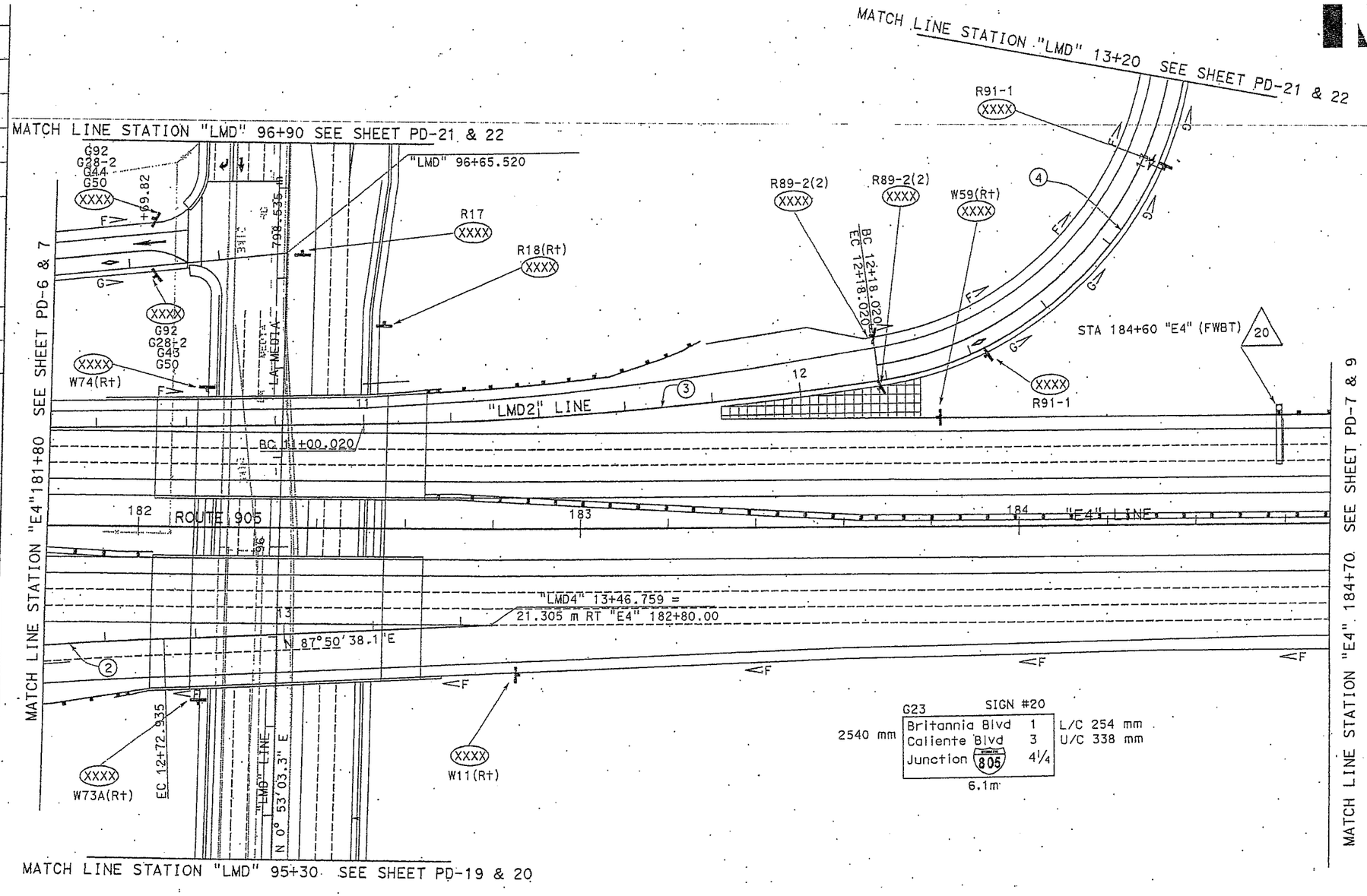

PAVEMENT DELINEATION AND SIGN PLAN

PD- 8

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SCALE 1:500

FOR REDUCED PLANS ORIGINAL SCALE IS IN MILLIMETERS 0 20 40 60 80

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DGN FILE => b09182na008.dgn

CU 11227 | EA 091821

LAST REVISION 02-09-06 | DATE PLOTTED => 17-SEP-2007 | TIME PLOTTED => 13:42

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Caltrans
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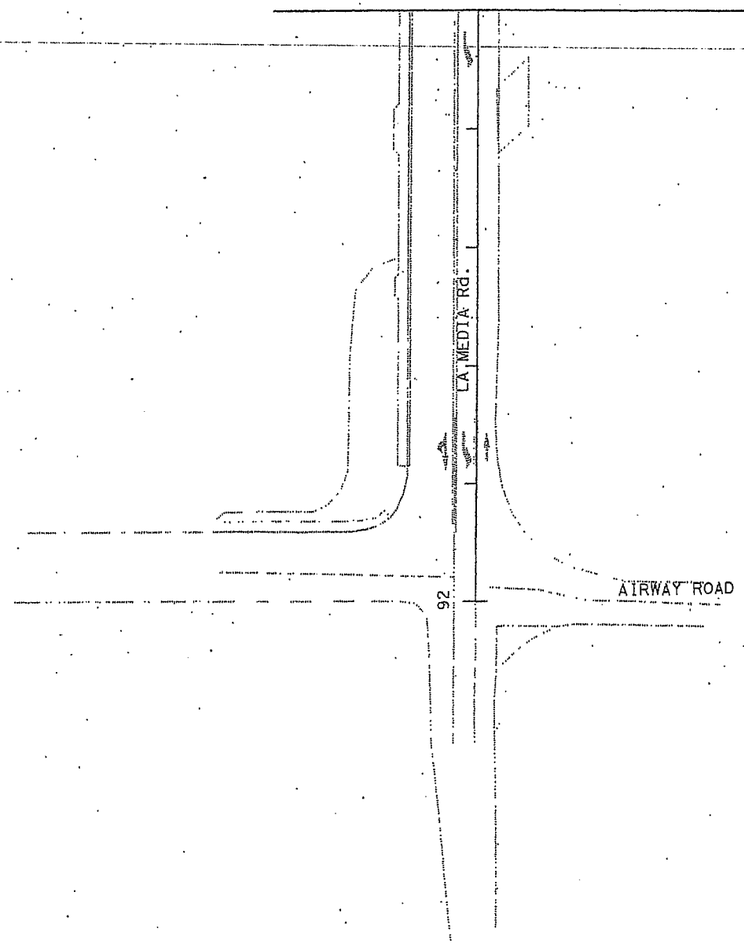
PROJECT ENGINEER J.P. SIMS

CALCULATED/DESIGNED BY | MBH | DATE | REVISED BY
CHECKED BY | | | DATE REVISED

L-11

MATCH LINE STATION "LMD" 93+00 SEE SHEET PD-19 & 20



REGISTERED CIVIL ENGINEER DATE
PHASE 2 PLAN
9-17-07
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
J.P. SIMS
No. 49715
Exp. 9-30-08
CIVIL
STATE OF CALIFORNIA

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CALCULATED/ DESIGNED BY	MBH
CHECKED BY	
DATE REVISED BY	
DATE REVISED	

PROJECT ENGINEER
J.P. SIMS

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
TRAFFIC

THIS SHEET ACCURATE FOR PAVEMENT DELINEATION AND SIGNS ONLY.

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FOR REDUCED PLANS ORIGINAL SCALE IS IN MILLIMETERS 0 20 40 60 80

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DGN FILE => b09182na018.dgn

PAVEMENT DELINEATION AND SIGN PLAN

SCALE 1:500

PD-18

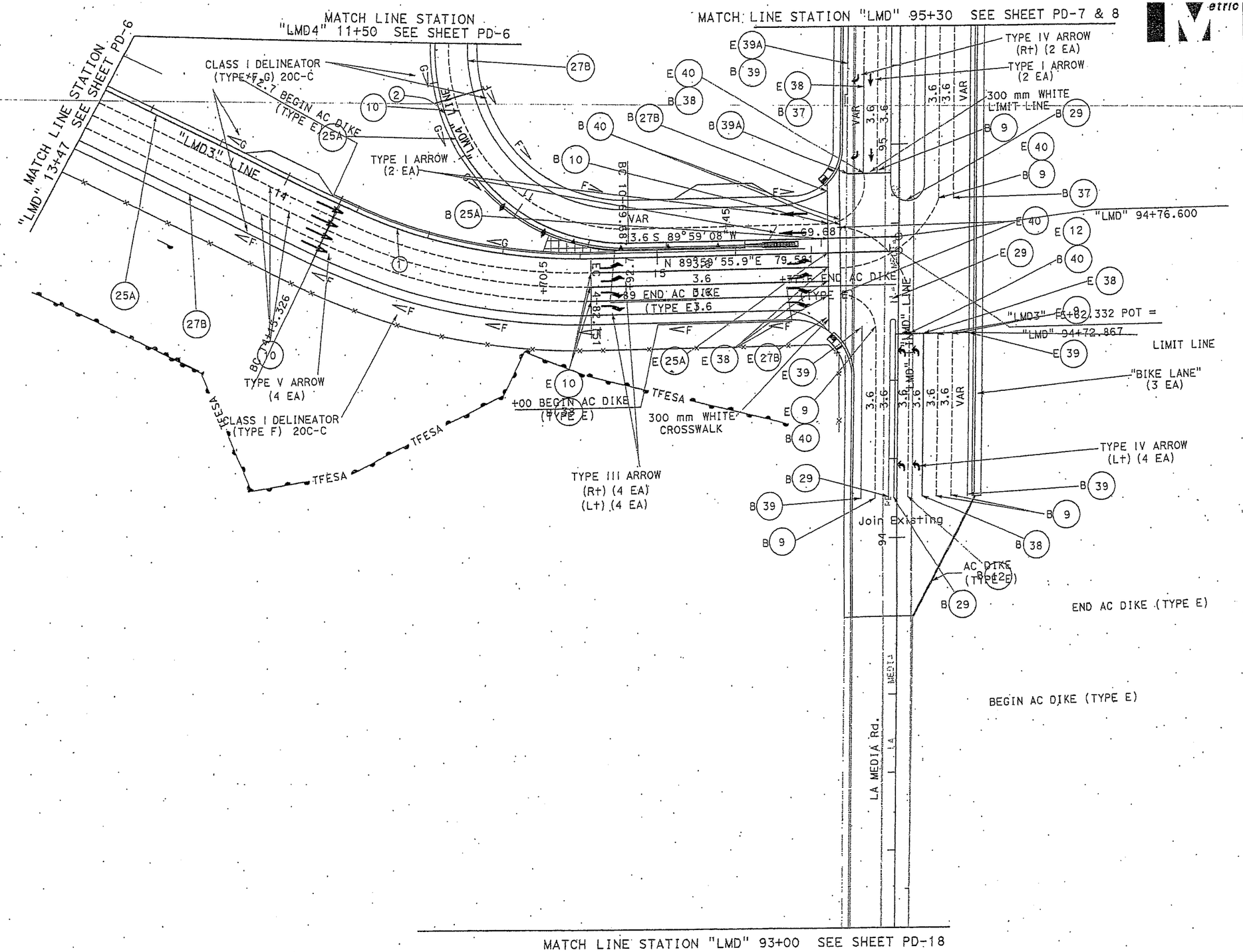
CU 11227

EA 091821

LAST REVISION 02-09-06

DATE PLOTTED => 17-SEP-2007
TIME PLOTTED => 13:44

L-12



REGISTERED CIVIL ENGINEER DATE

PHASE 2 PLAN

9-17-07
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER J.P. SIMS No. 49715 Exp. 9-30-08 CIVIL STATE OF CALIFORNIA

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DATE	REVISED BY	DATE REVISED
MBH		

CALCULATED/DESIGNED BY
CHECKED BY

PROJECT ENGINEER **J.P. SIMS**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans **TRAFFIC**

PAVEMENT DELINEATION AND SIGN PLAN

PD-19

SCALE 1:500

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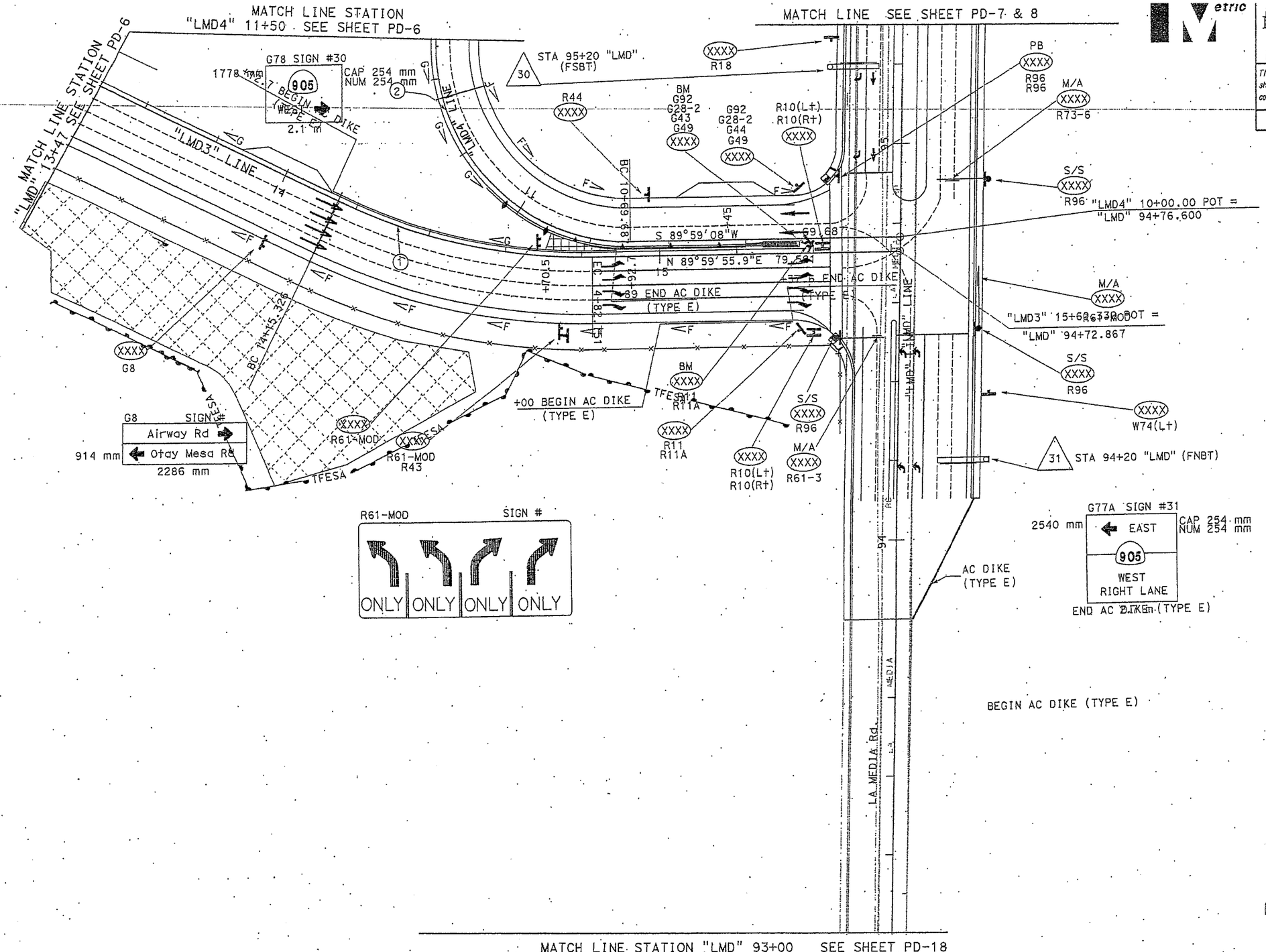
USERNAME => hrpierce
DGN FILE => b09182na019.dgn

CU 11227 | EA 091821

LAST REVISION 02-09-06
PLOTTED => 17-SEP-2007
PLOTTED => 13:34

L-13



REGISTERED CIVIL ENGINEER DATE

PHASE 2 PLAN

9-17-07
PLANS APPROVAL DATE

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PAVEMENT DELINEATION AND SIGN PLAN

PD- 20

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LAST REVISION 02-09-06 | DATE PLOTTED => 17-SEP-2007 | TIME PLOTTED => 13:44

L-14

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PHASE 2 PLAN
9-17-07
PLANS APPROVAL DATE

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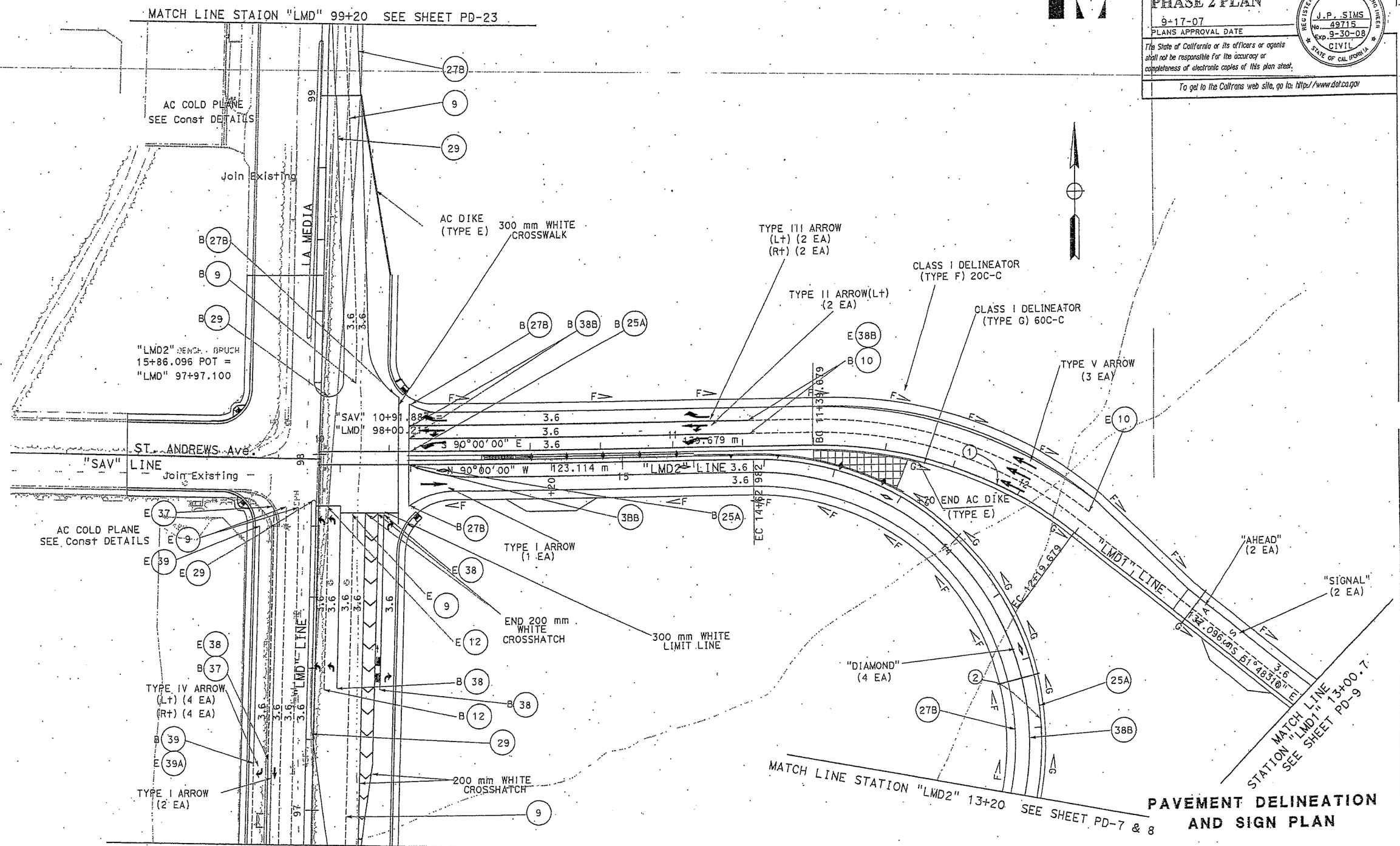

PAVEMENT DELINEATION AND SIGN PLAN

PD- 21

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REGISTERED CIVIL ENGINEER DATE
PHASE 2 PLAN
9-17-07
PLANS APPROVAL DATE

J.P. SIMS No. 49715 Exp. 9-30-08 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

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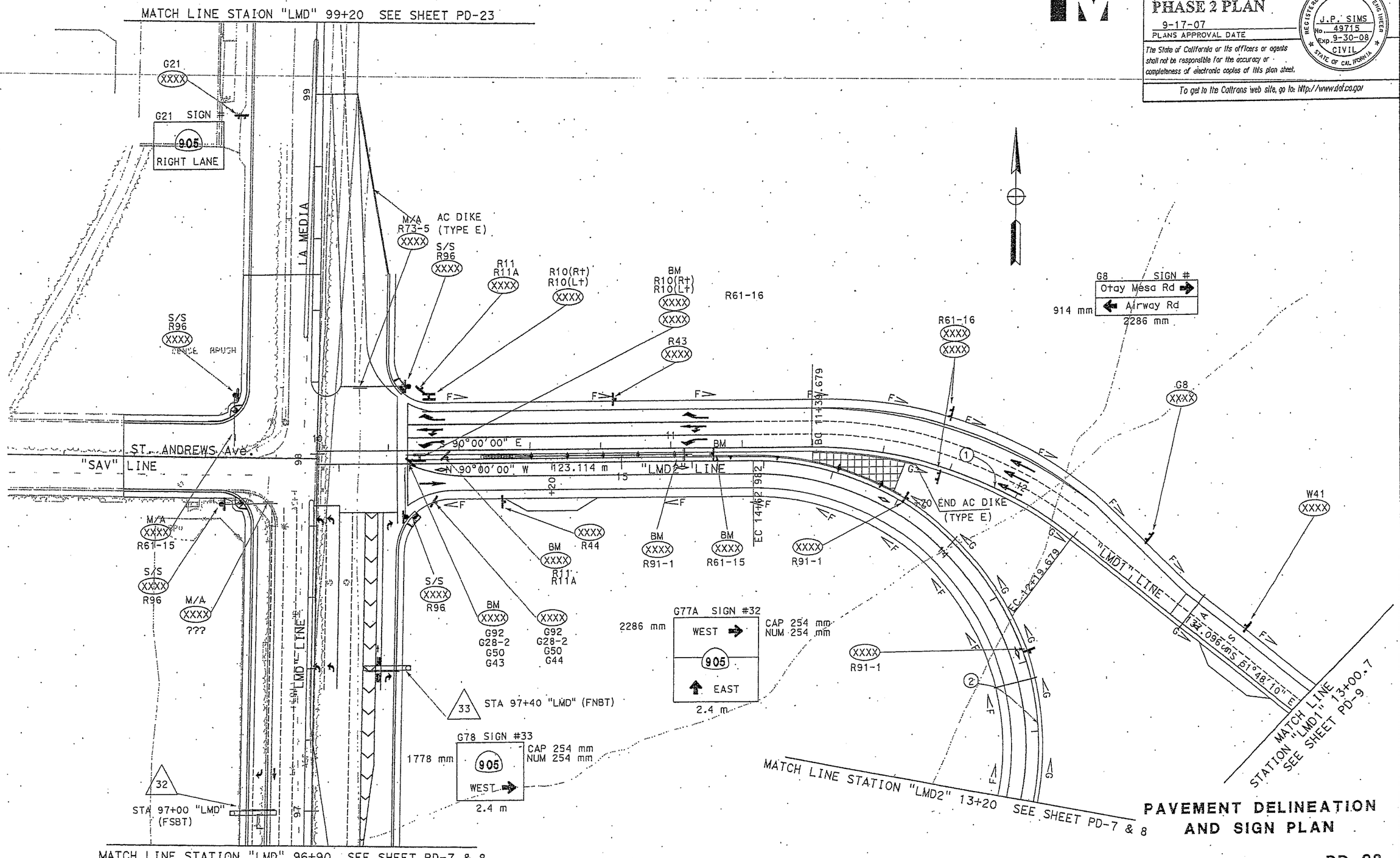

PAVEMENT DELINEATION AND SIGN PLAN

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PD-22

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CU 11227 | EA 091821

L-16

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REGISTERED CIVIL ENGINEER DATE

PHASE 2 PLAN

9-17-07

PLANS APPROVAL DATE

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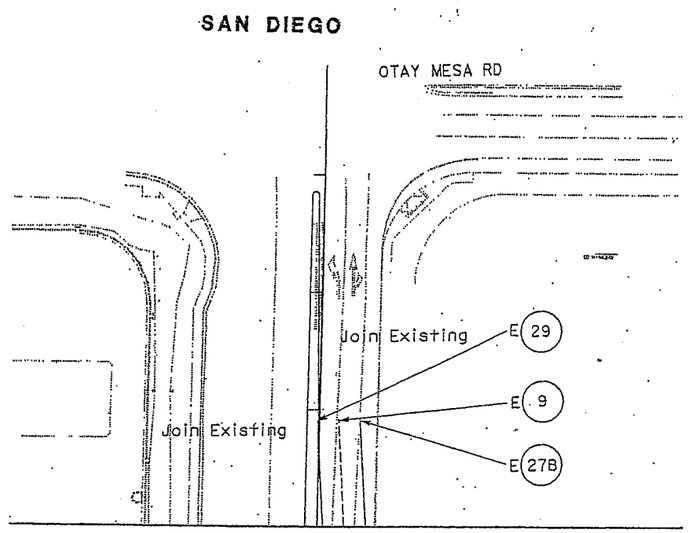

MATCH LINE STATION "LMD" 99+20 SEE SHEET PD-21

PAVEMENT DELINEATION AND SIGN PLAN

SCALE 1:500

L-17

PD-23

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PROJECT ENGINEER J.P. SIMS

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EA 091821

Caltrans Striping Concepts for Airway Road btwn Harvest and Sanyo

REGISTERED CIVIL ENGINEER DATE

PHASE 2 PLAN

9-17-07

PLANS APPROVAL DATE

J.P. SIMS No. 49715 Exp. 9-30-08 CIVIL STATE OF CALIFORNIA REGISTERED PROFESSIONAL ENGINEER

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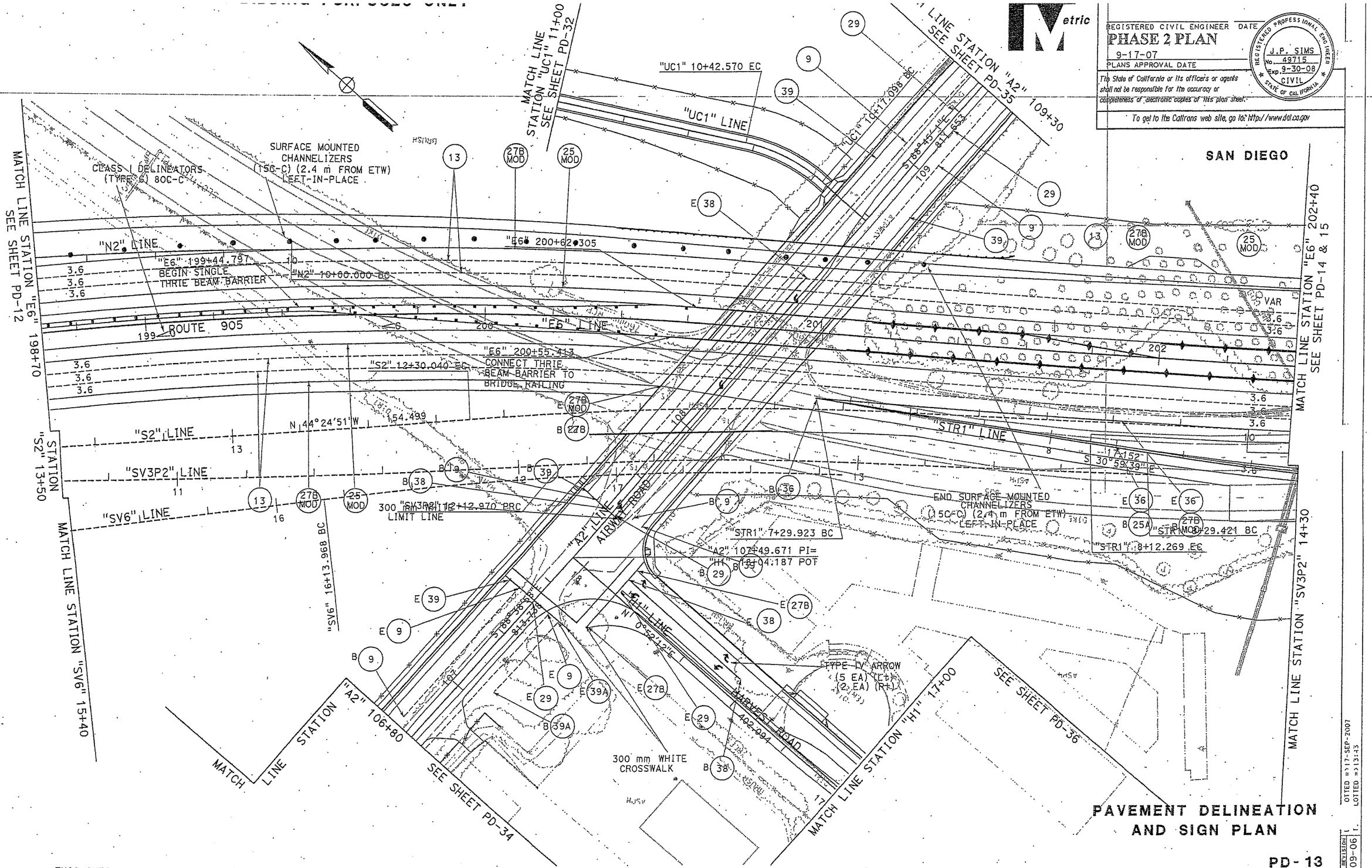

PAVEMENT DELINEATION AND SIGN PLAN

PD-13

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EA 091821

L-19

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PHASE 2 PLAN

9-17-07

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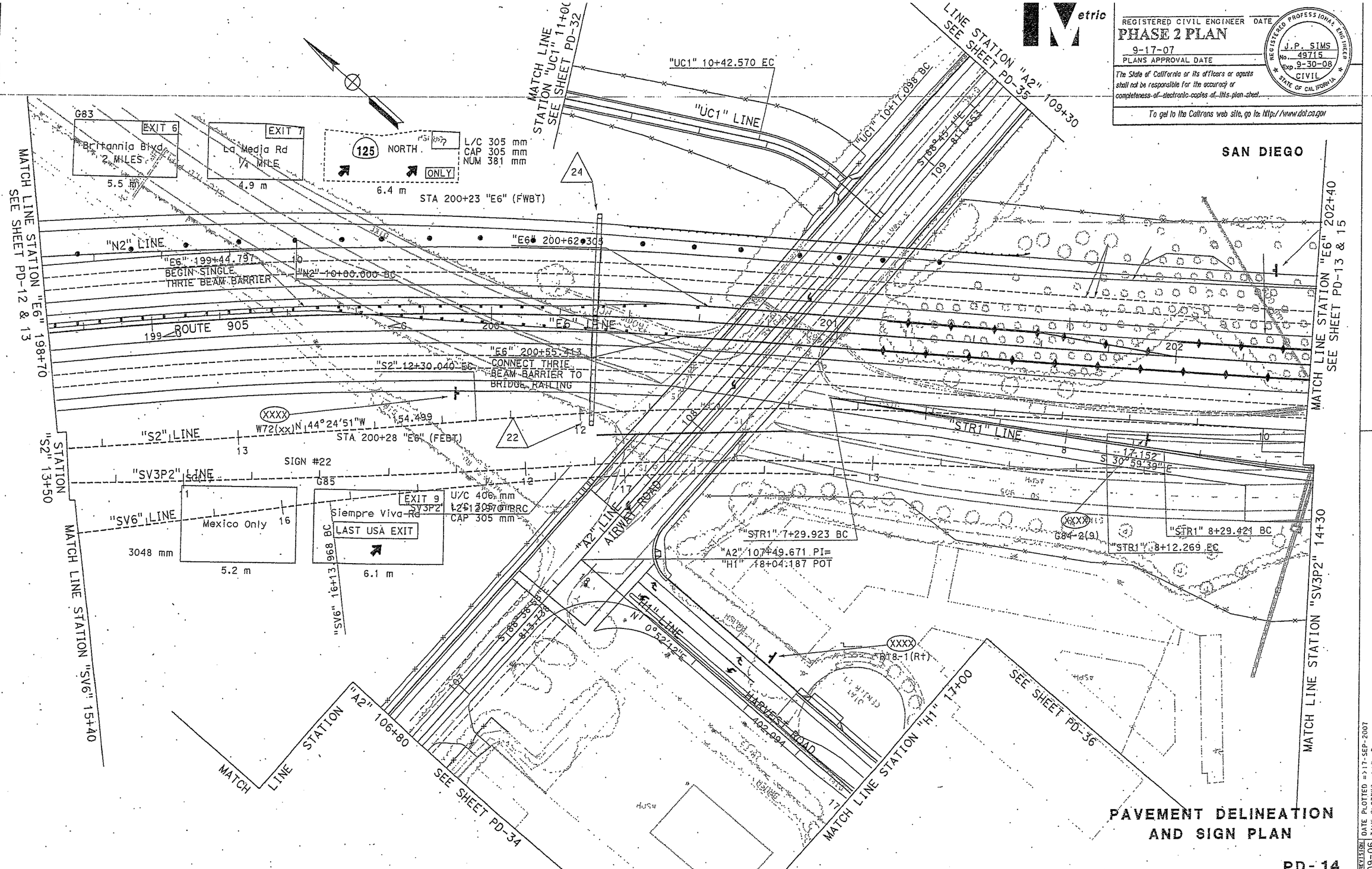

PAVEMENT DELINEATION AND SIGN PLAN

PD-14

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PROJECT ENGINEER **J.P. SIMS**

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CU 11227

EA 091821

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REGISTERED CIVIL ENGINEER DATE

PHASE 2 PLAN

9-17-07
PLANS APPROVAL DATE

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J.P. SIMS
No. 49715
Exp. 9-30-08
CIVIL
STATE OF CALIFORNIA

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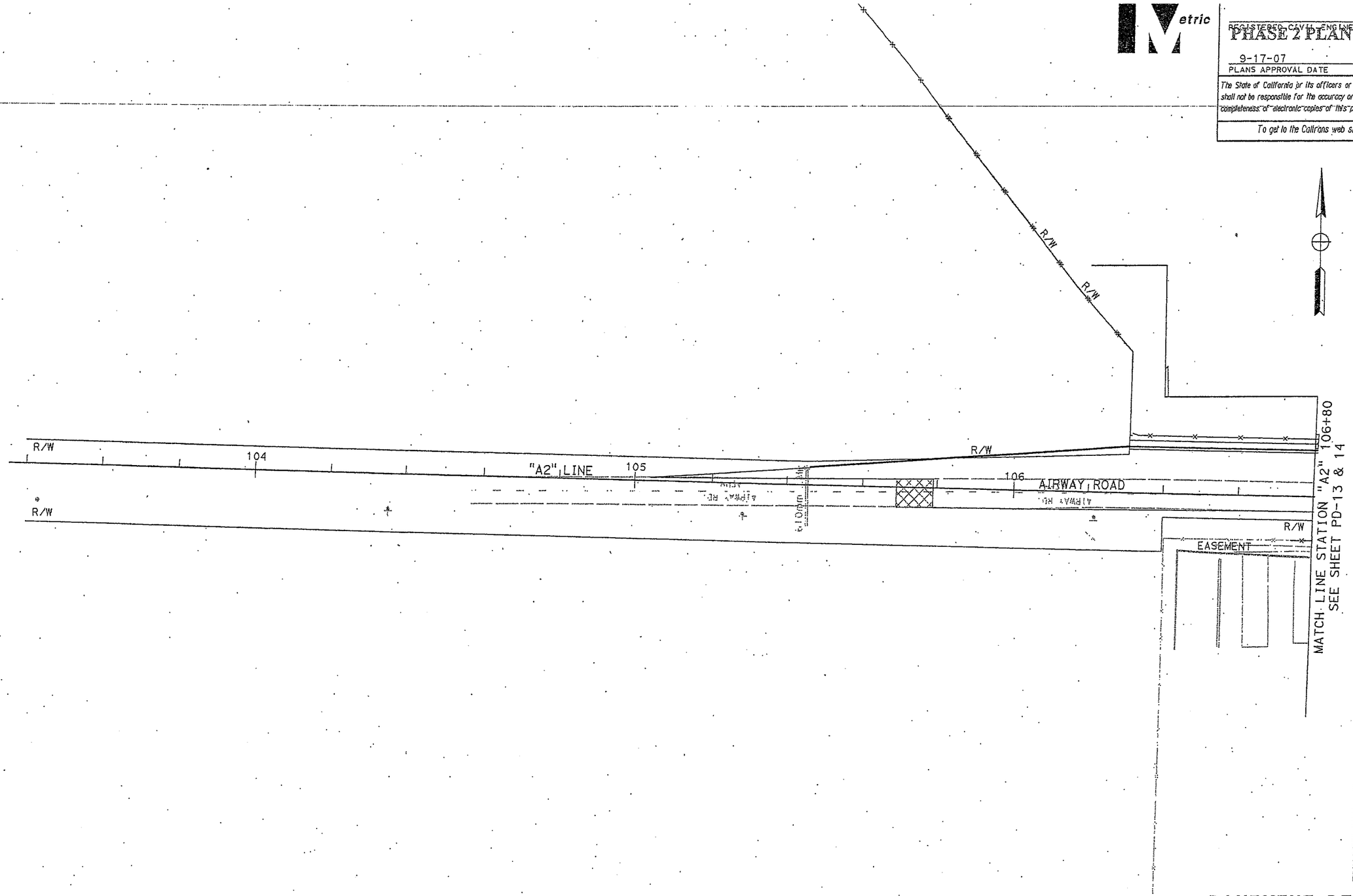

PAVEMENT DELINEATION AND SIGN PLAN

PD-34

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SCALE 1:500

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CALCULATED/DESIGNED BY	MBH
CHECKED BY	DATE

PROJECT ENGINEER
J.P. SIMS

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
TRAFFIC

LAST REVISION 02-09-06
DATE PLOTTED => 17-SEP-2007
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CU 11227

EA 091821

L-21

11	SD	905	R13.9/R18.6	651	895

Caltrans Metric

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PHASE 2 PLAN

9-17-07

PLANS APPROVAL DATE

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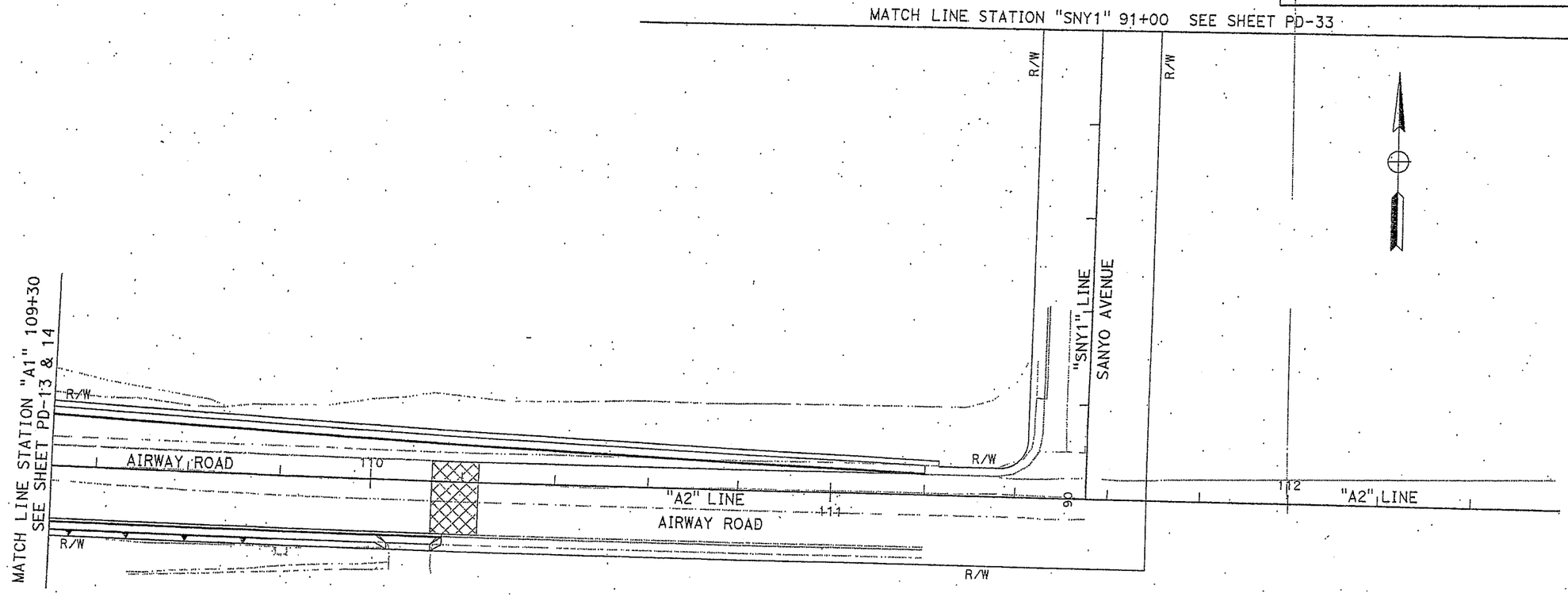

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PAVEMENT DELINEATION AND SIGN PLAN

PD-35

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PROJECT ENGINEER J.P. SIMS

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CU 11227

EA 091821

L-22

Caltrans Striping Concept for Britannia Blvd btwn Otay Mesa Rd and Airway Rd

PRELIMINARY FOR BIDDING PURPOSES ONLY

Caltrans Metric

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
11	SD	905	R13.9/R18.6	633	895

REGISTERED CIVIL ENGINEER DATE

PHASE 2 PLAN

9-17-07

PLANS APPROVAL DATE

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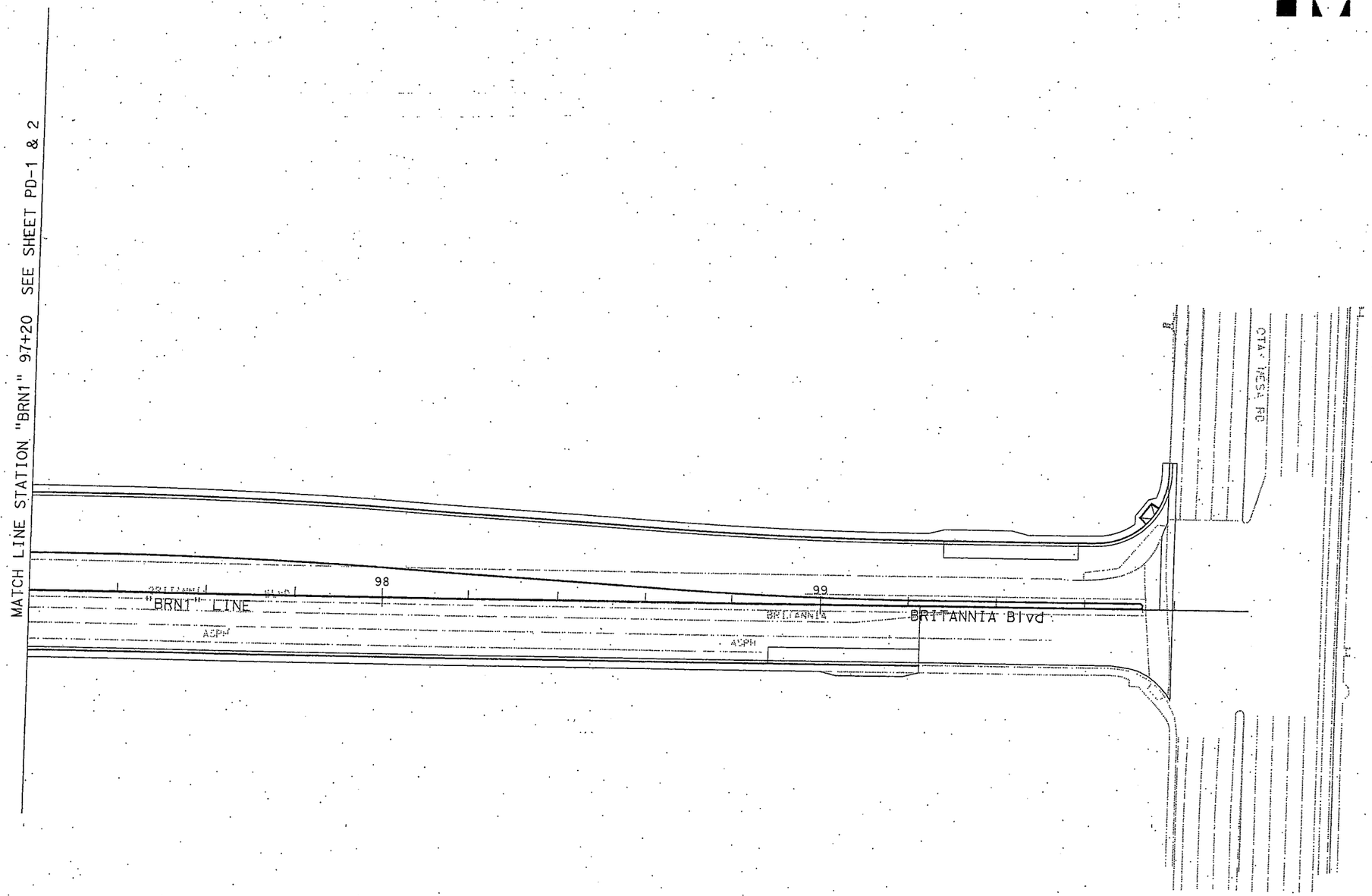

PAVEMENT DELINEATION AND SIGN PLAN

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SCALE 1:500 L-24 PD-17

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CU 11227

EA 091821

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DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	905	R13.9/R18.6	617	895

REGISTERED CIVIL ENGINEER DATE
PHASE 2 PLAN
9-17-07
PLANS APPROVAL DATE

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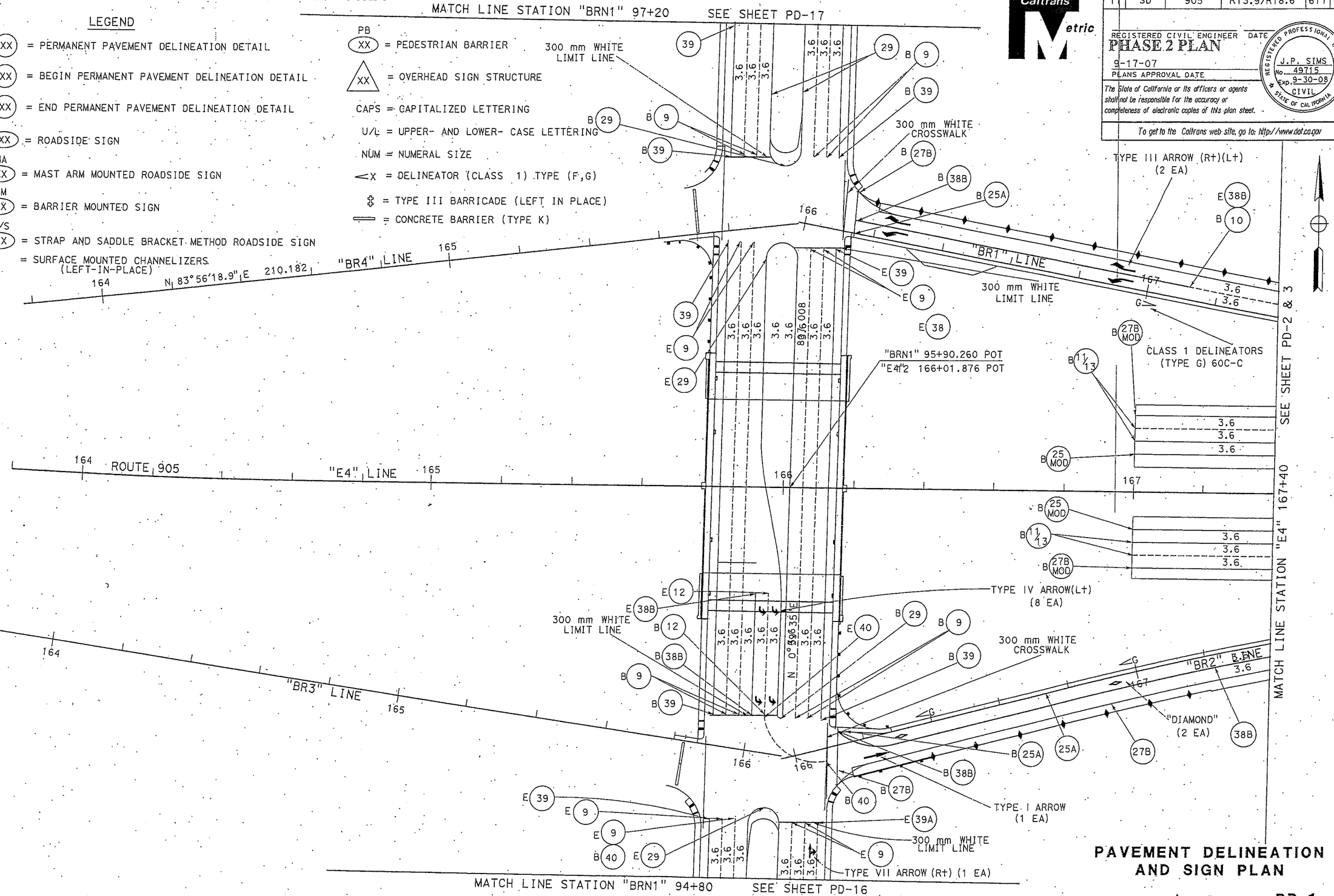
- E (XX) = END PERMANENT PAVEMENT DELINEATION DETAIL
- (XX) = ROADSIDE SIGN
- MA (XX) = MAST ARM MOUNTED ROADSIDE SIGN
- BM (XX) = BARRIER MOUNTED SIGN
- S/S (XX) = STRAP AND SADDLE BRACKET METHOD ROADSIDE SIGN
- • = SURFACE MOUNTED CHANNELIZERS (LEFT-IN-PLACE)
- PB (XX) = PEDESTRIAN BARRIER
- (XX) = OVERHEAD SIGN STRUCTURE
- CAPS = CAPITALIZED LETTERING
- U/L = UPPER- AND LOWER- CASE LETTERING
- NUM = NUMERAL SIZE
- <X = DELINEATOR (CLASS 1) TYPE (F,G)
- = TYPE III BARRICADE (LEFT IN PLACE)
- = CONCRETE BARRIER (TYPE K)



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PAVEMENT DELINEATION AND SIGN PLAN

SCALE 1:500 L-25 PD-1

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PLANS APPROVAL DATE

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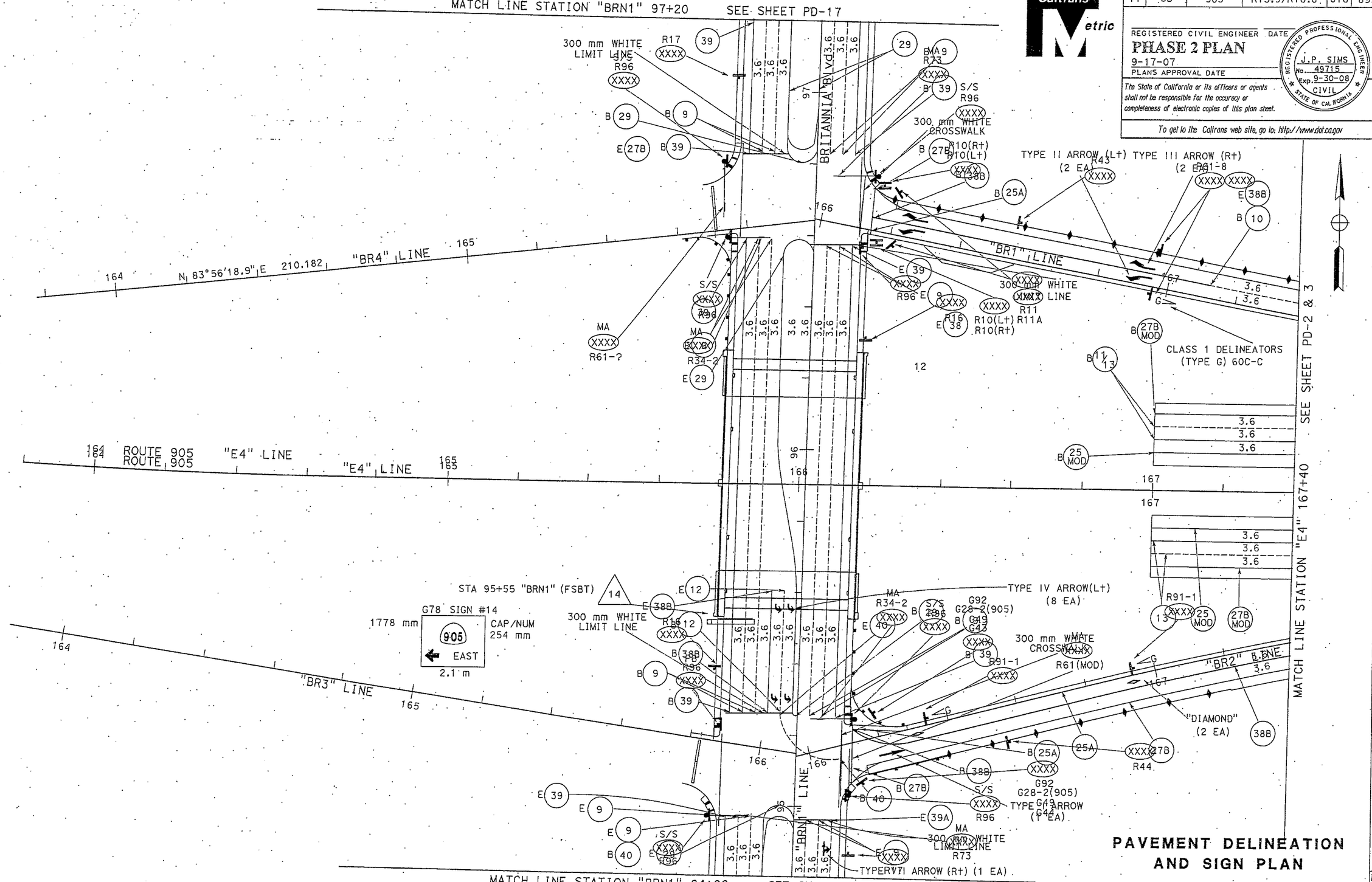

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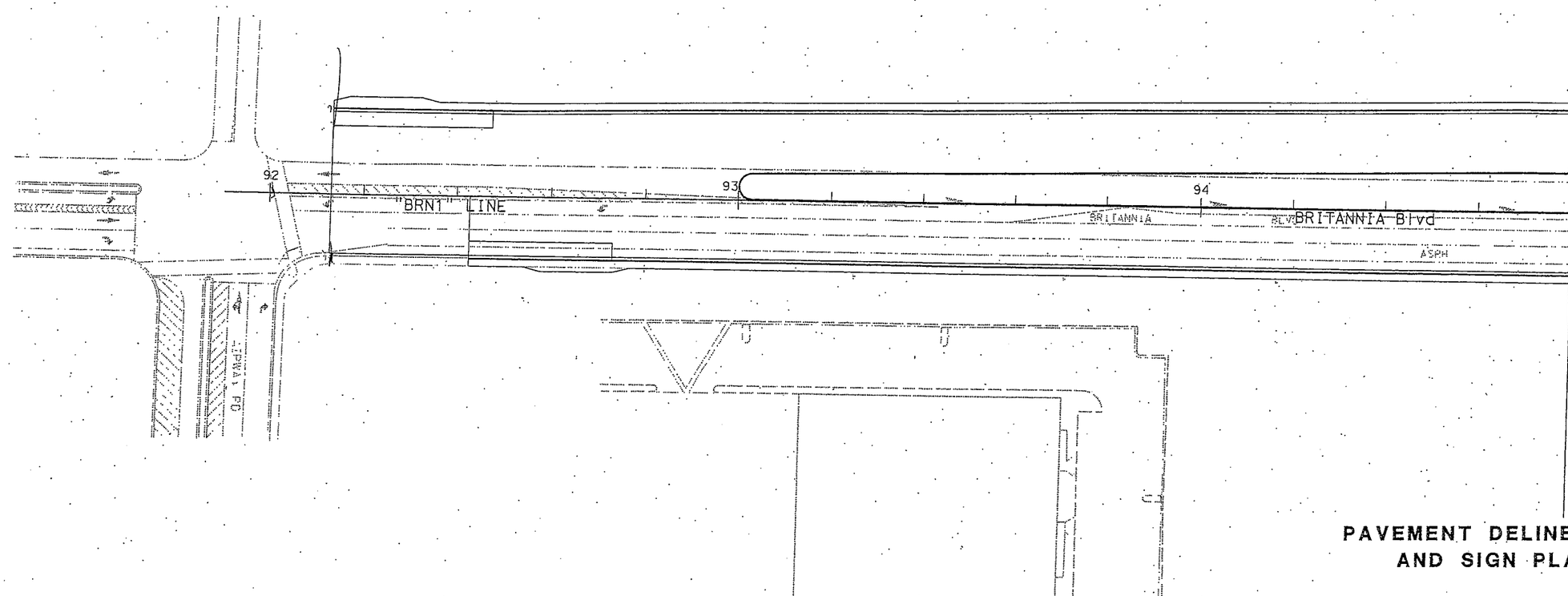

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PROJECT ENGINEER J.P. SIMS

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CU 11227 EA 091821

APPENDIX M

- Approved Design Exception Request
- Hawano Drive North Access Memo

Approved Design Exception Request

County of San Diego

DEPARTMENT OF PUBLIC WORKS

RICHARD E. CROMPTON
DIRECTOR

5201 RUFFIN ROAD, SUITE D
SAN DIEGO, CALIFORNIA 92123-4310

(858) 694-2055 FAX: (858) 694-8928
Web Site: sdcounty.ca.gov/dpw/

October 7, 2011

KIMLEY-HORN AND ASSOCIATES, INC
Attn: Adam Corral, P.E.
401 B Street, Suite 600,
San Diego, CA 92101

REQUEST FOR DESIGN EXCEPTION TO A ROAD STANDARD AND/OR MODIFICATION TO PROJECT CONDITIONS – HAWANO DRIVE NORTH/ SOUTH CUL-DE-SACS ROADS AND DRIVEWAYS CENTERLINE SEPARATION, EAST OTAY MESA, TM 5566 – KIVA 10-0123176

Dear Mr. Corral:

Department of Public Works (DPW) reviewed your application package and Assessment of the Siempre Viva Road/ Hawano Drive North Access, prepared by Darnell & Associates, dated August 19, 2011 for the Exceptions Request to the Public Road Standards.

The requested design exceptions were as follows:

1. Allow modification of Public Road Standards, Sec. 4.5.J. for proposed Hawano Drive North and Hawano Drive South, Industrial/ Commercial Cul-De-Sac Roads to exceed the average daily vehicular trips (ADT) of 1,000 ADTs. The projected traffic for Hawano Drive North and Hawano Drive South is 5,319 ADT and 3,410 ADTs, respectively.

2. Allow modification of Public Road Standards, Section 6.1.C.3 to allow centerline separations of less than 600 feet into Alta Road, a circulation element road, between Siempre Viva Road, a circulation element road, and the proposed shared driveways on Lots 11-12; and between Airway Road, a circulation element road, and the proposed shared driveways on Lots 9-10.

DPW is able to support your request for design exceptions to the above project conditions. The project shall provide the following roads mitigation conditions:

1. The proposed Hawano Drive North cul-de-sac shall provide a 310-foot long left-turn pocket along the eastbound direction of Siempre Viva Road and place a 50-foot long no-parking/ red curb restriction at the northwest corner of the Siempre Viva Road/ Hawano Drive North intersection in order to accommodate the truck turning movements.
2. The Siempre Viva Road/ Hawano Drive North intersection shall be signalized.
3. The project's driveways along Alta Road shall be designed to have a maximum possible separation of 300 feet or more between other driveways or intersections. Adequate sight distance, in both directions shall be provided at each driveway pursuant to the prevailing speeds along, Alta Road. Hawano Drive North and Hawano Drive South to the satisfaction of the Director of Public Works.
4. Based on previous supported design exception requests for East Otay Mesa development, DPW will allow centerlines separation of a minimum 100-foot between driveways accessing Industrial/Commercial Cul-De-Sac Roads. Adequate sight distance in both directions shall be provided at each driveway pursuant to the prevailing speeds along Hawano Drive North and Hawano Drive South including driveways entering the cul-de-sacs to the satisfaction of the Director of Public Works.

It has been determined your request for design exceptions will not adversely affect the safety and flow of traffic in this area.

If you have any questions or need additional information related to this request, please contact Edwin M. Sinsay, Team Leader at (858) 694-2486 or via e-mail at edwin.sinsay@sdcounty.ca.gov.

Sincerely,

TROY BANKSTON, Deputy Director
Department of Public Works

CC: Gail Wright, Project Manager, Department of Planning and Land Use, M.S. 0650
Rosemary Rowan, Planning Manager, DPLU, M.S. 0650
Bob Goralka, County Traffic Engineer, DPW, M.S. 0338
Ricardo Jinich, Paragon, 4370 La Jolla Village Dr., Suite 640, San Diego, CA 92122
Bill Darnell, 2870 Fourth Avenue, Suite A, San Diego, CA 92103

Hawano Drive North Access Memo

Darnell & ASSOCIATES, INC.

TRANSPORTATION PLANNING & TRAFFIC ENGINEERING

MEMORANDUM

DATE: August 19, 2011

TO: Dan Berkus, Paragon Management Company

FROM: Bill E. Darnell, P.E.
Vicki S. Haskell, P.E.

D&A Ref. No: 091201

RE: Hawano (TM 5566; ER 93-19-006OO) – Revised Assessment of the Siempre Viva Road/Hawano Drive North Access

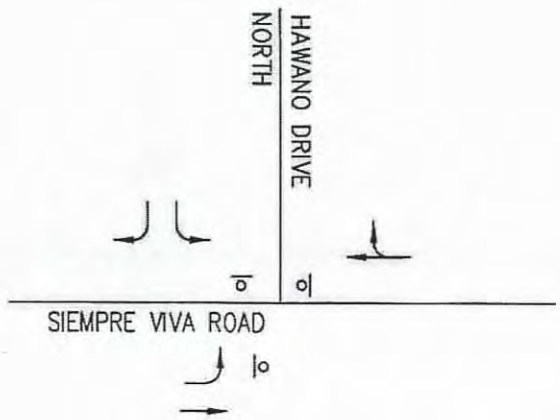
In response to the County of San Diego's August 10, 2010 comment letter, Darnell & Associates, Inc. (D&A) has provided some additional analysis related to the Siempre Viva Road/Hawano Drive North Access. This revised memo provides the requested all-way stop-control warrant analysis, the buildout traffic volumes, and the updated queuing analysis which incorporates the projected truck demand.

As was addressed previously, D&A has carefully reviewed the traffic distribution and circulation for the proposed Hawano project to determine the access requirements for the Siempre Viva Road/Hawano Drive North intersection assuming that there would be a median break allowed on Siempre Viva Road. Minor revisions to the traffic distribution from what was previously illustrated in our March 30, 2011 traffic study report were made to allow for more project traffic utilization of the segment of Airway Road between Siempre Viva Road and Alta Road. Figure A provides an illustration of the updated existing plus project Phases 1-2 traffic volumes.

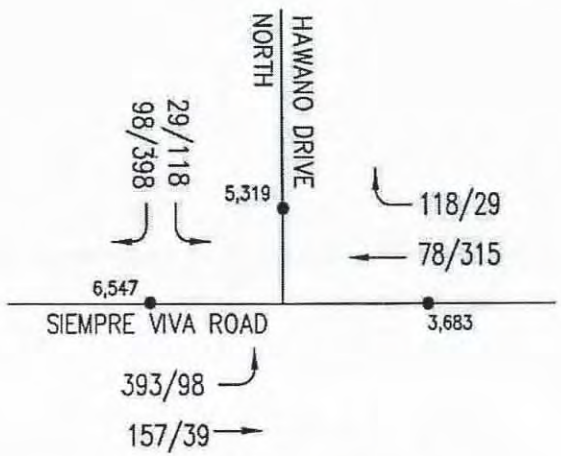
In their August 10, 2010 comment letter, the County asked for an illustration of the buildout peak hour traffic volumes that would exist at the Siempre Viva Road/Hawano Drive North Access. To estimate the peak hour buildout traffic volumes, D&A referenced the 2035 peak hour traffic volumes (with the two interchange alternative) from the November 2010 *Traffic Technical Report for State Route 11 and the Otay Mesa East Port of Entry* which was prepared by VRPA Technologies. Specifically, the peak hour volumes at the Siempre Viva Road/Alta Road intersection were utilized to determine the through traffic at the Siempre Viva Road/Hawano Drive North Access. Figure B provides an illustration of the buildout plus project Phases 1-2 traffic volumes.

The Siempre Viva Road/Hawano Drive North intersection was reanalyzed under existing plus project Phases 1-2 conditions and buildout plus project Phases 1-2 conditions utilizing the Synchro version 6 software.

2870 Fourth Avenue • Suite A • San Diego, CA 92103
Phone: 619-233-9373 • Fax: 619-233-4034
E-mail: office@darnell-assoc.com



TRAVEL LANES



TRAFFIC VOLUMES

LEGEND

- TRAVEL LANE/DIRECTION OF TRAVEL
- STOP SIGN
- XX/YY - AM/PM PEAK HOUR TURN VOLUME
- ● Z,ZZZ - AVERAGE DAILY TRAFFIC

Darnell & ASSOCIATES, INC.

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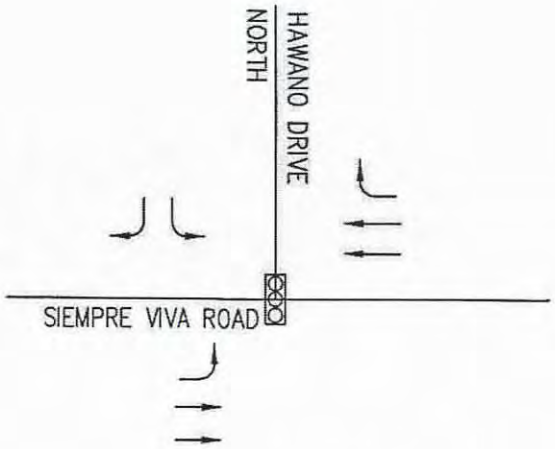
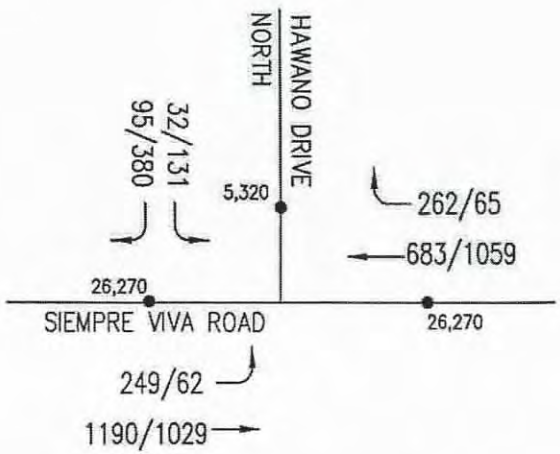
FIGURE A

EXISTING PLUS PROJECT PHASES 1-2 CONDITIONS AT SIEMPRE VIVA ROAD/ HAWANO DRIVE NORTH



TRAVEL LANES



TRAFFIC VOLUMES

LEGEND

- TRAVEL LANE/DIRECTION OF TRAVEL
- TRAFFIC SIGNAL
- XX/YY – AM/PM PEAK HOUR TURN VOLUME
- ● Z,ZZZ – AVERAGE DAILY TRAFFIC

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FIGURE B

BUILDOUT PLUS PROJECT PHASES 1-2 CONDITIONS AT SIEMPRE VIVA ROAD/ HAWANO DRIVE NORTH

The analysis found that under existing plus project Phases 1-2 conditions, all critical movements at the Siempre Viva Road/Hawano Drive North intersection can operate at an acceptable level of service (LOS) C or better during both the AM and PM peak hours with all-way stop-control with the lane configurations depicted in Figure A. Daily signal warrant analysis found that the installation of a traffic signal at the Siempre Viva Road/Hawano Drive North intersection under existing plus Phases 1-2 project conditions, and is therefore, not recommended. Further, the all-way stop-control analysis found that all-way stop-control is warranted at the Siempre Viva Road/Hawano Drive North intersection under existing plus project Phases 1-2 conditions. A copy of the synchro, signal warrant, and all-way stop-control warrant worksheets have been attached to the back of this memo.

Under buildout conditions, the signal warrant analysis found that a traffic signal would be warranted at the Siempre Viva Road/Hawano Drive North intersection. Further, due to the unbalanced traffic volumes that would occur on the approaches (there would be significantly higher traffic volumes on Siempre Viva Road than Hawano Drive North) under buildout conditions, all-way stop-control would not be recommended under buildout conditions. Analysis found that under buildout conditions the southbound left turn movement would operate at an unacceptable LOS E during the AM peak hour and LOS F during the PM peak hour if the intersection was only stop-controlled on the Hawano Drive North (southbound) approach. Therefore, it is recommended that under buildout conditions the Siempre Viva Road/Hawano Drive North intersection be signalized. The analysis found that if signalized, the Siempre Viva Road/Hawano Drive North intersection will operate at an acceptable LOS A during the AM peak hour and LOS B during the PM peak hour under buildout plus project Phases 1-2 conditions with the lane configurations depicted in Figure B. A copy of the synchro, signal warrant, and all-way stop-control warrant worksheets have been attached to the back of this memo.

To determine how long the eastbound left turn lane would need to be, D&A conducted a queuing analysis at the Siempre Viva Road/Hawano Drive North intersection. The queuing analysis was conducted utilizing SimTraffic; a simulation software which uses the input values from the Synchro program. The queuing analysis was conducted for the AM and PM peak hours for the existing plus project Phases 1-2 and buildout plus project Phases 1-2 conditions. Ten (10) simulation runs were conducted for each scenario. To respond to the County's comments, the revised queuing analysis included the following vehicle mix: 78% passenger cars, 8% 2-axle trucks; 4% 3-axle trucks; and 10% 4+-axle trucks. The 2-axle and 3-axle trucks were assumed to have a vehicle length of 35 feet while the 4+-axle trucks were assumed to have a vehicle length of 53 feet. Table 1 provides a summary of the queuing analysis.

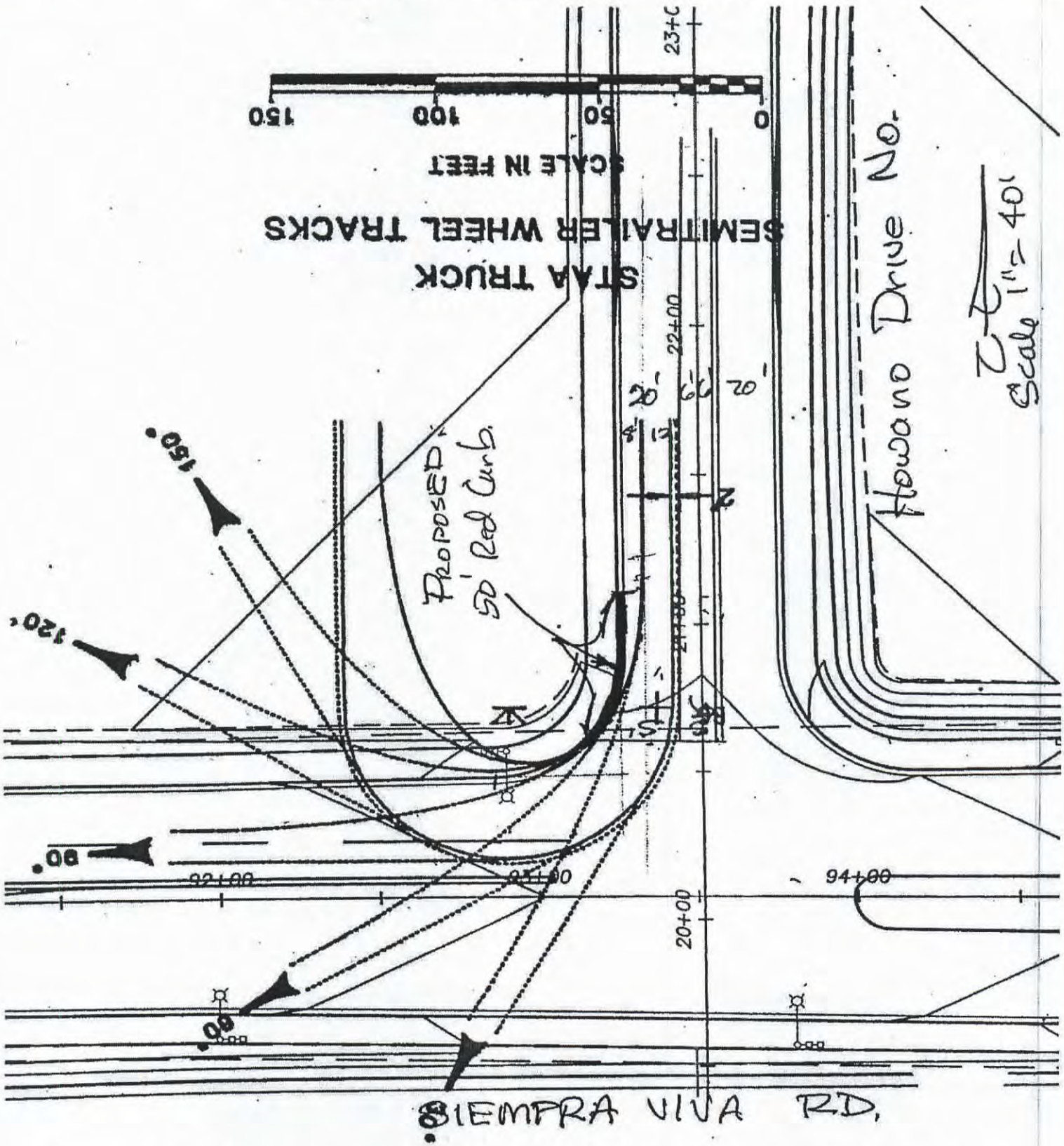
Table 1 - Summary of Queuing Analysis													
Peak Hour	Movement	95th Percentile Queue (Feet)											
		Run											
		1	2	3	4	5	6	7	8	9	10	Average	Max
Existing Plus Project Phases 1-2													
AM	EBL	107	107	107	97	116	135	90	92	89	76	*102*	135
PM	EBL	56	41	63	47	54	57	57	53	45	57	*53*	63
Buildout Plus Project Phases 1-2													
AM	EBL	296	280	215	214	238	222	310	247	294	256	*257*	310
PM	EBL	85	94	82	60	80	75	61	71	78	96	*78*	96

EBL = Eastbound Left
95% Percentile Queue = Is the Maximum Back of Queue with the 95-percentile Traffic Volumes
Average = Average of the 95% Percentile Queue Observed; Max = Maximum 95% Percentile Queue Observed

As shown in Table 1, the maximum 95th-percentile queue observed for the eastbound left turn movement was 310 feet. Therefore, it is recommended that the eastbound left turn lane at the Siempre Viva Road/Hawano Drive North Drive intersection be at least 310 feet long.

D&A also looked at the truck turning movements exiting Hawano Drive North onto Siempre Viva Road to determine whether no parking/red curb restrictions would be required on the northwest corner of the intersection. As illustrated in Figure C, a review of the truck turning movements found that approximately 50 feet of no parking/red curb restrictions would be required at the northwest corner of the Siempre Viva Road/Hawano Drive North intersection in order to adequately accommodate the truck turning movements.

Please feel free to contact the office if you have any questions.



BED 8/5/2011

Figure C - Truck Turning Movements at ~~Siempre Viva Rd~~/ Hawano Dr North

ATTACHMENT

- **Existing Plus Project Phases 1-2 Analysis**
- **Buildout Plus Project Phases 1-2 Analysis**

Existing Plus Project Phases 1-2 Analysis

-All Way Stop Control Warrants

-

TRAFFIC WARRANT FOR MULTI-WAY STOP CONTROLLED INTERSECTION – ADOPTED FROM MUTCD 2009 EDITION (SECTION 2B.07)

Intersection: **Siempre Viva Road/Hawano Drive North**
Condition/Year: **Existing Plus Project Phases 1-2**

I) SUPPORT

Support Criteria			
1. Is the volume of traffic on the intersecting roads approximately equal?	Peak Hour Volume on Major Street (Siempre Viva Rd)	Peak Hour Volume on Minor Street (Hawano Drive North)	YES
	EB Approach: AM 550, PM 137 WB Approach AM 196, PM 344	SB Approach: AM 127, PM 516	
2. Is there is a safety concern associated with pedestrians, bicyclists, and all other users?	No	Comments: This intersection currently does not exist, however, there is not anticipated to be a high volume of pedestrians or bicycle activity in this area	
3. Can all-way stop control be useful as a safety measure at the intersection?	No	Comments:	

II) GUIDANCE

A. Traffic Signal Warrant

See Attached Signal Warrants. As shown in the attached signal warrants, a traffic signal will not be warranted at this intersection based on average daily volumes.

B. Crash Warrants

Crash History				
Intersection	No. of Crashes	No. of Years	No. of crashes[1] correctable by All-Way Stop	No. of crashes[1] correctable by All-Way Stop >= 5 in 12 month period
Siempre Viva Road @ Hawano Drive North	**N/A**			
[1] Such crashes include right-and left turn collisions and right-angle collisions				

C. Minimum Volumes

1. Eight Hour Vehicular Volume on Major Street											
Street	Approach	Hourly Volume								Avg.	>= 300 vph
		7-8 AM	8-9 AM	9-10 AM	2-3 PM	3-4 PM	4-5 PM	5-6 PM	7-8 PM		
Siempre Viva Rd	Major Street (Total of both approaches)	746	723	602	302	386	481	405	336	**498**	**YES**
vph = vehicles per hour Note: Since this intersection does not currently exist, the volumes were estimated based on the existing traffic splits on Siempre Viva Road at Paseo De Las Americas											

2. Eight Hour Vehicular, Pedestrian and Bicycle Volume on Minor Street													
Street	Approach	Travel Mode	Hourly Volume								Avg.	>= 200 uph	Avg. Delay to Veh. Tr.[1]
			7-8 AM	8-9 AM	9-10 AM	2-3 PM	3-4 PM	4-5 PM	5-6 PM	7-8 PM			
Hawano Dr. North	Minor Street (Total of both approaches)	Veh.	127	123	103	323	414	516	435	360	**300**	**YES**	AM Peak SBL Delay = 36.5 sec/veh
		Ped.	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.		
		Cyc.	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.		
		Total	127	123	103	323	414	516	435	360	**300**		
uph = units per hour; Veh. Tr. = Vehicular Traffic; Nom. = Nominal Avg. Delay to Veh. Tr.[1] = Average delay to minor-street vehicular traffic should be at least 30 seconds per vehicle during the highest hour.													

3. 85th Percentile Approach Speed of Major Street					
Street	Approach	85th Percentile Approach Speed of Major Street	> 40 mph or 65 km/h	If YES is any of the minimum vehicular warrant satisfied	
				70 % of 300 vph	70 % of 200 uph
Siempre Viva Rd	Major Street (Total of both approaches)	55 mph (a)	**YES**	**YES**	**YES**

vph = vehicles per hour; uph = units per hour; mph = miles per hour; km/h = kilometers per hour
(a) Since the roadway is not constructed yet the 85th percentile speed was assumed to be the design speed of the roadway

A. No. of Criteria Satisfied to 80 percent

No. of Criteria Satisfied to 80 percent			
Intersection	B	C1	C2
Siempre Viva Road @ Hawano Drive North	**YES**	**YES**	**YES**

Criterion C.3 is excluded from this condition.

III) OPTION

Option Criteria			
	Criterion	Criterion Satisfied	Comments
A.	Need to control left-turn conflicts	YES	There are 393 EBL and 118 SBL projected under existing plus project conditions
B.	Need to control vehicle/ pedestrian conflicts near locations that generate high pedestrian volumes	NO	
C.	Locations where a road user, after stopping, cannot see conflicting traffic and is not able to reasonably safely negotiate the intersection unless conflicting cross traffic is also required to stop; and	NO	
D.	An intersection of two residential neighborhood collector (through) streets of similar design and operating characteristics where all-way stop control would improve traffic operational characteristics of the intersection.	NO	

Criterion C.3 is excluded from this condition.

All-Way Stop Control 100 % Warrant Satisfied:	**YES**
All-Way Stop Control 70 % Warrant Satisfied:	**YES**

-Signal Warrants

-

Siempre Viva Road / Hawano Dr North

Existing + Project Phases 1-2

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 1 of 4)

COUNT DATE _____
CALC XH DATE 8-18-11
CHK _____ DATE _____

DIST ____ CO ____ RTE ____ PM ____

Major St: Siempre Viva Rd
Minor St: Hawano Dr Nort

Critical Approach Speed _____ mph
Critical Approach Speed 55 mph

Speed limit or critical speed on major street traffic > 64 km/h (40 mph)..... ☒ or ☐ } RURAL (R)
In built up area of isolated community of < 10,000 population..... ☐
☐ URBAN (U)

WARRANT 1 - Eight Hour Vehicular Volume SATISFIED YES ☐ NO ☒
(Condition A or Condition B or combination of A and B must be satisfied)

Condition A - Minimum Vehicle Volume 100% SATISFIED YES ☐ NO ☒
80% SATISFIED YES ☐ NO ☒

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)												
	U	R	U	R									
APPROACH LANES	1		2 or More		7-8	8-9	9-10	2-3	3-4	4-5	5-6	6-7	Hour
Both Approaches Major Street	500 (400)	350 (280)	600 (480)	420 (336)	746	723	602	302	386	481	415	336	
Highest Approach Minor Street	150 (120)	105 (84)	200 (160)	140 (112)	127	123	103	323	414	516	435	360	

Condition B - Interruption of Continuous Traffic 100% SATISFIED YES ☐ NO ☒
80% SATISFIED YES ☐ NO ☒

Same as above

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)												
	U	R	U	R									
APPROACH LANES	1		2 or More										Hour
Both Approaches Major Street	750 (600)	525 (420)	900 (720)	630 (504)									
Highest Approach Minor Street	75 (60)	53 (42)	100 (80)	70 (56)									

Combination of Conditions A & B SATISFIED YES ☐ NO ☒

REQUIREMENT	CONDITION	✓	FULFILLED
TWO CONDITIONS SATISFIED 80%	A. MINIMUM VEHICULAR VOLUME		Yes ☐ No ☐
	AND, B. INTERRUPTION OF CONTINUOUS TRAFFIC	No	
AND, AN ADEQUATE TRIAL OF OTHER ALTERNATIVES THAT COULD CAUSE LESS DELAY AND INCONVENIENCE TO TRAFFIC HAS FAILED TO SOLVE THE TRAFFIC PROBLEMS			Yes ☐ No ☐

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 4)

Siempre Viva Road / Hawaro Dr North
Existing + Project Phases 1-2

WARRANT 2 - Four Hour Vehicular Volume **SATISFIED* YES ☐ NO ☒**

Record hourly vehicular volumes for any four hours of an average day.

APPROACH LANES	One	2 or More	7-8	8-9	4-5	5-6	Hour
Both Approaches - Major Street		X	746	723	481	465	
Higher Approach - Minor Street		X	127	123	516	435	

*All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)	Yes ☐	No ☐
OR, All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)	Yes ☐	No ☒

WARRANT 3 - Peak Hour
(Part A or Part B must be satisfied) **SATISFIED YES ☒ NO ☐**

PART A **SATISFIED YES ☐ NO ☒**

(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

1. The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; AND	Yes ☐	No ☒
2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND	Yes ☒	No ☐
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.	Yes ☒	No ☐

PART B **SATISFIED YES ☒ - pm NO ☐**

APPROACH LANES	One	2 or More	AM	pm Hour
Both Approaches - Major Street			746	481
Higher Approach - Minor Street			127	516

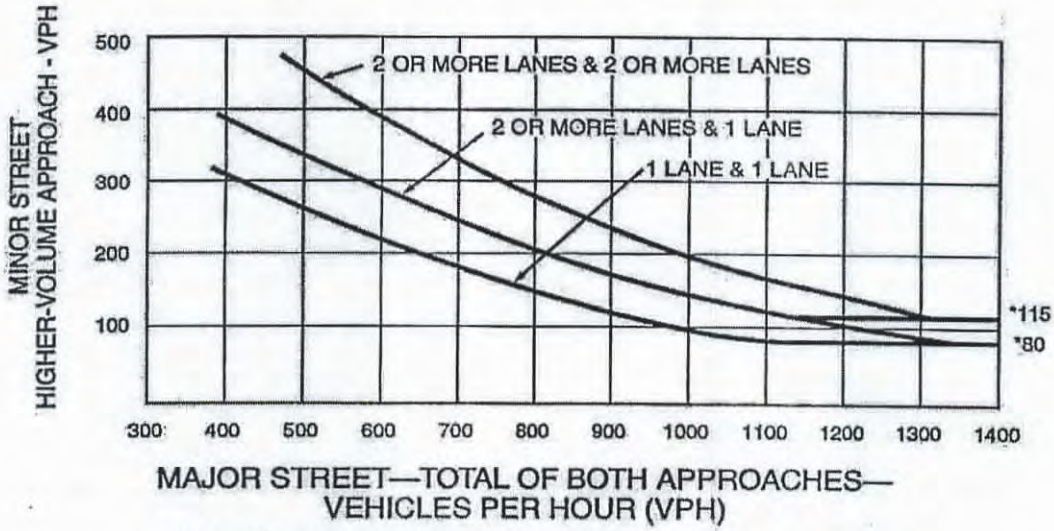
The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	Yes ☐	No ☐
OR, The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)	Yes ☒	No ☐

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Existing + Project Phases 1-2

Siempre Viva / Hawaro Dr N

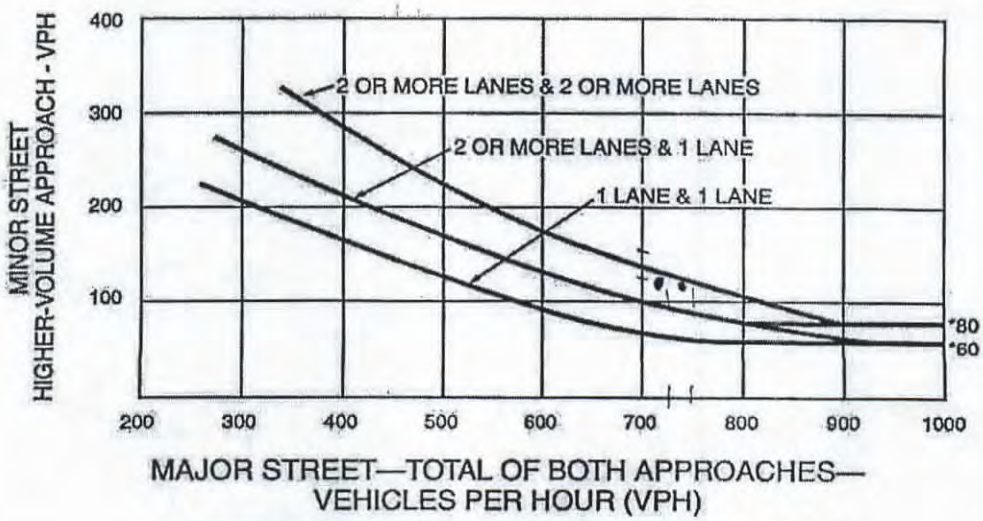
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

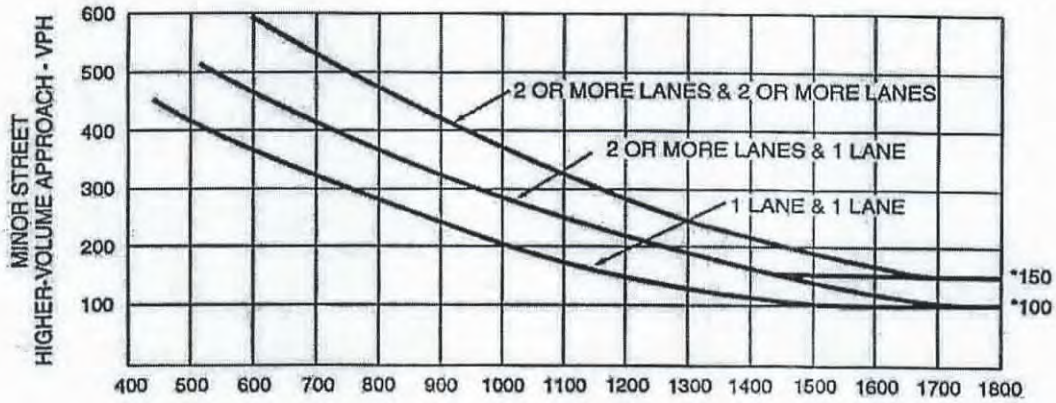
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE ~~70~~ 64 km/h OR ABOVE 40 mph ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

Existing + Project
Phases 1-2
Siempre Viva/
Hawano Dr N

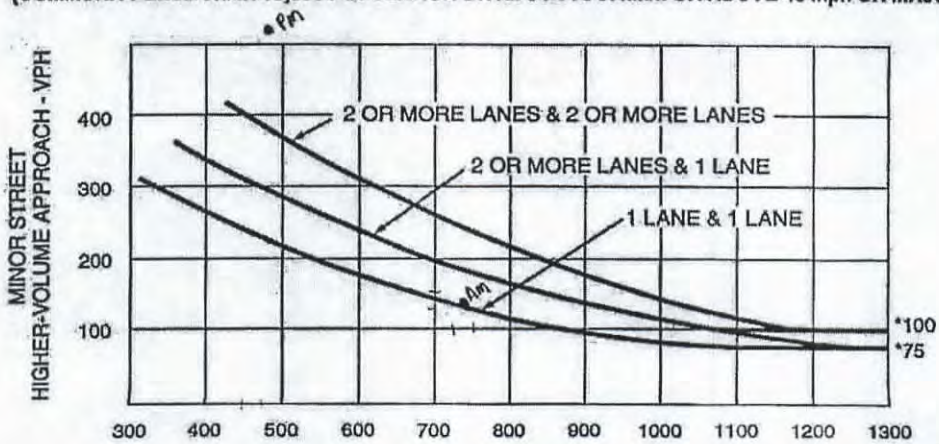
Figure 4C-3. Warrant 3, Peak Hour



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

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE ~~70~~ 64 km/h OR ABOVE 40 mph ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)

COUNT DATE _____
CALC VH DATE 8-18-11
CHK _____ DATE _____

DIST ____ CO ____ RTE ____ PM ____

Major St: Siempre Vira Rd
Minor St: Hawano Dr Nort

Critical Approach Speed 55 mph
Critical Approach Speed _____ mph

Speed limit or critical speed on major street traffic > 64 km/h (40 mph)..... ☒
or
In built up area of isolated community of < 10,000 population..... ☐
} RURAL (R)

☐ URBAN (U)

(Based on Estimated Average Daily Traffic - See Note)

URBAN..... RURAL.....X.....	Minimum Requirements EADT			
CONDITION A - Minimum Vehicular Volume Satisfied _____ Not Satisfied X	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Number of lanes for moving traffic on each approach Major Street / Minor Street	Urban	Rural	Urban	Rural
1 / 1	8,000	5,600	2,400	1,680
2 or More / 1	9,600	6,720	2,400	1,680
2 or More / 2 or More	9,600	6,720	3,200	2,240
1 / 2 or More	8,000	5,600	3,200	2,240
	5,115		2,660	
CONDITION B - Interruption of Continuous Traffic Satisfied _____ Not Satisfied X	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Number of lanes for moving traffic on each approach Major Street / Minor Street	Urban	Rural	Urban	Rural
1 / 1	12,000	8,400	1,200	850
2 or More / 1	14,400	10,080	1,200	850
2 or More / 2 or More	14,400	10,080	1,600	1,120
1 / 2 or More	12,000	8,400	1,600	1,120
	5,115		2,660	
Combination of CONDITIONS A + B Satisfied _____ Not Satisfied X No one condition satisfied, but following conditions fulfilled 80% or more..... No (A) No (B)	2 CONDITIONS 80%		2 CONDITIONS 80%	

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

-Synchro Analysis

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	393	157	78	118	29	98
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	427	171	85	128	32	107
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	213				1174	149
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	213				1174	149
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	69				78	88
cM capacity (veh/h)	1357				145	898

Direction, Lane #	EB 1	EB 2	WB 1	SB 1	SB 2
Volume Total	427	171	213	32	107
Volume Left	427	0	0	32	0
Volume Right	0	0	128	0	107
cSH	1357	1700	1700	145	898
Volume to Capacity	0.31	0.10	0.13	0.22	0.12
Queue Length 95th (ft)	34	0	0	20	10
Control Delay (s)	8.9	0.0	0.0	36.5	9.5
Lane LOS	A			E	A
Approach Delay (s)	6.3		0.0	15.7	
Approach LOS				C	

Intersection Summary			
Average Delay	6.3		
Intersection Capacity Utilization	46.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	98	39	315	29	118	393
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	107	42	342	32	128	427
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	374				614	358
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	374				614	358
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	91				69	38
cM capacity (veh/h)	1185				415	686

Direction, Lane #	EB 1	EB 2	WB 1	SB 1	SB 2
Volume Total	107	42	374	128	427
Volume Left	107	0	0	128	0
Volume Right	0	0	32	0	427
cSH	1185	1700	1700	415	686
Volume to Capacity	0.09	0.02	0.22	0.31	0.62
Queue Length 95th (ft)	7	0	0	32	109
Control Delay (s)	8.3	0.0	0.0	17.5	18.5
Lane LOS	A			C	C
Approach Delay (s)	6.0		0.0	18.3	
Approach LOS				C	

Intersection Summary			
Average Delay	10.2		
Intersection Capacity Utilization	49.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	393	157	78	118	29	98
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	427	171	85	128	32	107

Direction, Lane #	EB 1	EB 2	WB 1	SB 1	SB 2
Volume Total (vph)	427	171	213	32	107
Volume Left (vph)	427	0	0	32	0
Volume Right (vph)	0	0	128	0	107
Hadj (s)	0.53	0.03	-0.33	0.53	-0.67
Departure Headway (s)	5.7	5.2	5.1	7.0	5.8
Degree Utilization, x	0.67	0.24	0.30	0.06	0.17
Capacity (veh/h)	620	681	685	476	569
Control Delay (s)	18.3	8.6	10.2	9.2	8.7
Approach Delay (s)	15.5		10.2	8.8	
Approach LOS	C		B	A	

Intersection Summary			
Delay	13.4		
HCM Level of Service	B		
Intersection Capacity Utilization	46.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	98	39	315	29	118	393
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	107	42	342	32	128	427

Direction, Lane #	EB 1	EB 2	WB 1	SB 1	SB 2
Volume Total (vph)	107	42	374	128	427
Volume Left (vph)	107	0	0	128	0
Volume Right (vph)	0	0	32	0	427
Hadj (s)	0.53	0.03	-0.02	0.53	-0.67
Departure Headway (s)	7.2	6.7	6.0	6.6	5.4
Degree Utilization, x	0.21	0.08	0.62	0.24	0.64
Capacity (veh/h)	467	499	581	526	637
Control Delay (s)	10.9	9.0	18.4	10.4	16.4
Approach Delay (s)	10.4		18.4	15.0	
Approach LOS	B		C	C	

Intersection Summary			
Delay	15.5		
HCM Level of Service	C		
Intersection Capacity Utilization	49.3%	ICU Level of Service	A
Analysis Period (min)	15		

Buildout Plus Project Phases 1-2 Analysis

-All Way Stop Control Warrants

TRAFFIC WARRANT FOR MULTI-WAY STOP CONTROLLED INTERSECTION – ADOPTED FROM MUTCD 2009 EDITION (SECTION 2B.07)

Intersection: **Siempre Viva Road/Hawano Drive North**
Condition/Year: **Buildout Plus Project Phases 1-2**

I) SUPPORT

Support Criteria			
1. Is the volume of traffic on the intersecting roads approximately equal?	Peak Hour Volume on Major Street (Siempre Viva Rd)	Peak Hour Volume on Minor Street (Hawano Drive North)	NO
	EB Approach: AM 1,439; PM 945 WB Approach AM 1,091; PM 1,124	SB Approach: AM 127, PM 511	
2. Is there is a safety concern associated with pedestrians, bicyclists, and all other users?	No	Comments: This intersection currently does not exist, however, there is not anticipated to be a high volume of pedestrians or bicycle activity in this area	
3. Can all-way stop control be useful as a safety measure at the intersection?	No	Comments:	

II) GUIDANCE

A. Traffic Signal Warrant

See Attached Signal Warrants. As shown in the attached signal warrants, a traffic signal will be warranted under buildout plus project conditions based on average daily conditions, the estimated four-hour volumes, and the estimated peak hour volume conditions.

B. Crash Warrants

Crash History				
Intersection	No. of Crashes	No. of Years	No. of crashes[1] correctable by All-Way Stop	No. of crashes[1] correctable by All-Way Stop >= 5 in 12 month period
Siempre Viva Road @ Hawano Drive North	N/A			
[1] Such crashes include right-and left turn collisions and right-angle collisions				

C. Minimum Volumes

1. Eight Hour Vehicular Volume on Major Street											
Street	Approach	Hourly Volume								Avg.	>= 300 vph
		7-8 AM	8-9 AM	9-10 AM	2-3 PM	3-4 PM	4-5 PM	5-6 PM	7-8 PM		
Siempre Viva Rd	Major Street (Total of both approaches)	2,384	2,310	1,925	1,388	1,779	2,215	1,866	1,545	**1,927**	**YES**
vph = vehicles per hour Note: Since this intersection does not currently exist, the volumes were estimated based on the existing traffic splits on Siempre Viva Road at Paseo De Las Americas											

2. Eight Hour Vehicular, Pedestrian and Bicycle Volume on Minor Street													
Street	Approach	Travel Mode	Hourly Volume								Avg.	>= 200 uph	Avg. Delay to Veh. Tr.[1]
			7-8 AM	8-9 AM	9-10 AM	2-3 PM	3-4 PM	4-5 PM	5-6 PM	7-8 PM			
Hawano Dr. North	Minor Street (Total of both approaches)	Veh.	127	123	103	320	410	511	430	356	**298**	**YES**	AM Peak SBL Delay = 36.5 sec/veh
		Ped.	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.		
		Cyc.	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.		
		Total	127	123	103	323	414	516	435	360	**300**		
uph = units per hour; Veh. Tr. = Vehicular Traffic; Nom. = Nominal Avg. Delay to Veh. Tr.[1] = Average delay to minor-street vehicular traffic should be at least 30 seconds per vehicle during the highest hour.													

3. 85th Percentile Approach Speed of Major Street					
Street	Approach	85th Percentile Approach Speed of Major Street	> 40 mph or 65 km/h	If YES is any of the minimum vehicular warrant satisfied	
				70 % of 300 vph	70 % of 200 uph
Siempre Viva Rd	Major Street (Total of both approaches)	55 mph (a)	**YES**	**YES**	**YES**
vph = vehicles per hour; uph = units per hour; mph = miles per hour; km/h = kilometers per hour (a) Since the roadway is not constructed yet the 85th percentile speed was assumed to be the design speed of the roadway					

A. No. of Criteria Satisfied to 80 percent

No. of Criteria Satisfied to 80 percent			
Intersection	B	C1	C2
Siempre Viva Road @ Hawano Drive North	**YES**	**YES**	**YES**
Criterion C.3 is excluded from this condition.			

III) OPTION

Option Criteria			
Criterion		Criterion Satisfied	Comments
A.	Need to control left-turn conflicts	YES	There are 249 EBL and 131 SBL projected under buildout plus project conditions
B.	Need to control vehicle/ pedestrian conflicts near locations that generate high pedestrian volumes	NO	
C.	Locations where a road user, after stopping, cannot see conflicting traffic and is not able to reasonably safely negotiate the intersection unless conflicting cross traffic is also required to stop; and	NO	
D.	An intersection of two residential neighborhood collector (through) streets of similar design and operating characteristics where all-way stop control would improve traffic operational characteristics of the intersection.	NO	
Criterion C.3 is excluded from this condition.			

All-Way Stop Control 100 % Warrant Satisfied: YES, However – since the traffic volumes are not balanced, an all-way stop-control is not recommended under buildout conditions. Rather, since a traffic signal is warranted, a traffic signal is recommended under buildout conditions.

All-Way Stop Control 70 % Warrant Satisfied: YES, However – since the traffic volumes are not balanced, an all-way stop-control is not recommended under buildout conditions. Rather, since a traffic signal is warranted, a traffic signal is recommended under buildout conditions.

-Signal Warrants

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 1 of 4)

Buildout + Project

COUNT DATE _____

CALC KH DATE 8-18-11

CHK _____ DATE _____

DIST ____ CO ____ RTE ____ PM ____

Major St: Siempre Viva Rd

Minor St: Hawano Dr North

Critical Approach Speed _____ mph

Critical Approach Speed 55 mph

Speed limit or critical speed on major street traffic > 64 km/h (40 mph)..... ☒ or ☐ } RURAL (R)

In built up area of isolated community of < 10,000 population..... ☐

☐ URBAN (U)

WARRANT 1 - Eight Hour Vehicular Volume SATISFIED YES ☐ NO ☒

(Condition A or Condition B or combination of A and B must be satisfied)

Condition A - Minimum Vehicle Volume 100% SATISFIED YES ☐ NO ☒

80% SATISFIED YES ☐ NO ☒

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)												
	U	R	U	R									
APPROACH LANES	1		2 or More		7-8	8-9	9-10	2-3	3-4	4-5	5-6	6-7	Hour
Both Approaches Major Street	500 (400)	350 (280)	600 (480)	420 (336)	2381	2316	1925	1388	1979	2215	1866	1545	
Highest Approach Minor Street	150 (120)	105 (84)	200 (160)	140 (112)	127	123	103	320	410	511	436	356	

Condition B - Interruption of Continuous Traffic 100% SATISFIED YES ☐ NO ☒

80% SATISFIED YES ☒ NO ☐

Same as above

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)												
	U	R	U	R									
APPROACH LANES	1		2 or More										Hour
Both Approaches Major Street	750 (600)	525 (420)	900 (720)	630 (504)									
Highest Approach Minor Street	75 (60)	53 (42)	100 (80)	70 (56)									

Combination of Conditions A & B SATISFIED YES ☐ NO ☒

REQUIREMENT	CONDITION	✓	FULFILLED
TWO CONDITIONS SATISFIED 80%	A. MINIMUM VEHICULAR VOLUME	No	Yes ☐ No ☒
	AND, B. INTERRUPTION OF CONTINUOUS TRAFFIC	✓	
AND, AN ADEQUATE TRIAL OF OTHER ALTERNATIVES THAT COULD CAUSE LESS DELAY AND INCONVENIENCE TO TRAFFIC HAS FAILED TO SOLVE THE TRAFFIC PROBLEMS			Yes ☐ No ☐

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 4)

Buildout + Hawano Phases 1-2

WARRANT 2 - Four Hour Vehicular Volume **SATISFIED* YES ☒ NO ☐**

Record hourly vehicular volumes for any four hours of an average day.

APPROACH LANES	One	2 or More	7-8	8-9	4-5	5-6	Hour
Both Approaches - Major Street		X	2384	2310	2215	1866	
Higher Approach - Minor Street		X	127	123	511	430	

*All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)	Yes ☐	No ☐
OR, All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)	Yes ☒	No ☐

WARRANT 3 - Peak Hour
(Part A or Part B must be satisfied) **SATISFIED YES ☒ NO ☐**

PART A **SATISFIED YES ☐ NO ☒**

(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

1. The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; AND pm - 2.6 veh-hrs	Yes ☐	No ☒
2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND	Yes ☒	No ☐
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.	Yes ☒	No ☐

PART B **SATISFIED YES ☒ NO ☐**

APPROACH LANES	One	2 or More	AM	PM Hour
Both Approaches - Major Street		X	2384	2215
Higher Approach - Minor Street		X	127	511

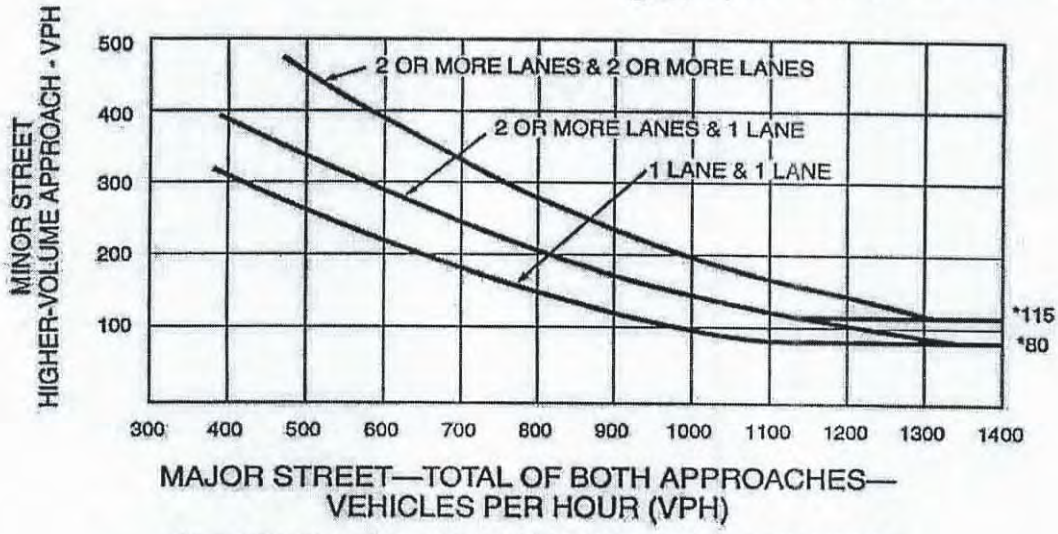
The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	Yes ☐	No ☐
OR, The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)	Yes ☒	No ☐

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Buildout + Project

Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume

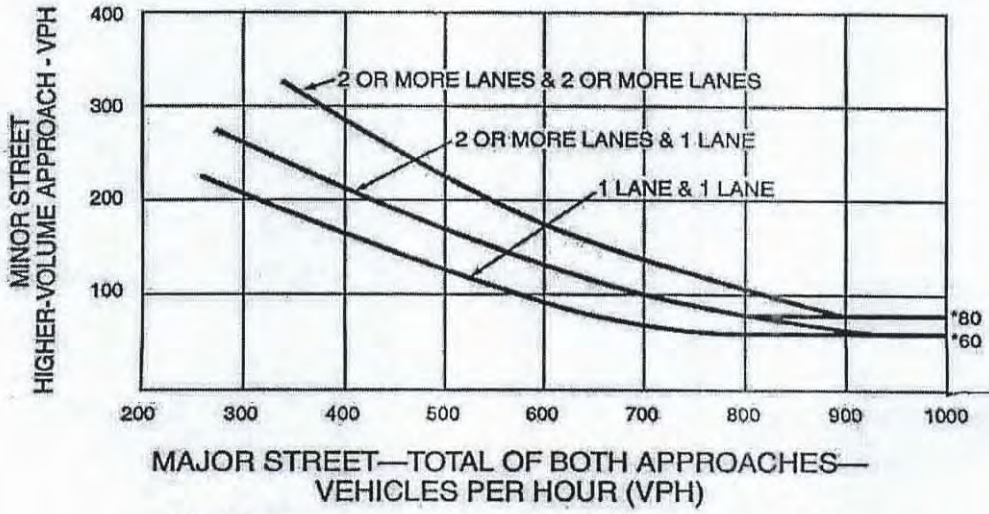
Siempre Viva / Hawano Dr North



*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE ~~70~~ 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

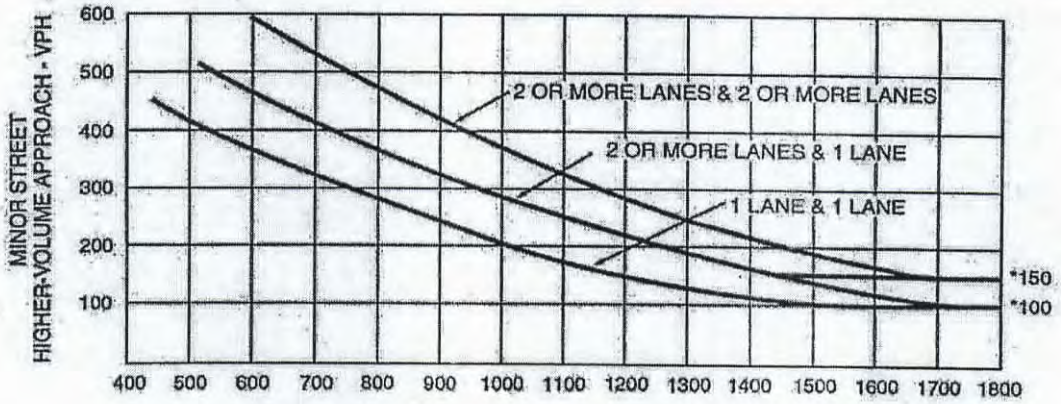


*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

Buildout + Project

Figure 4C-3. Warrant 3, Peak Hour

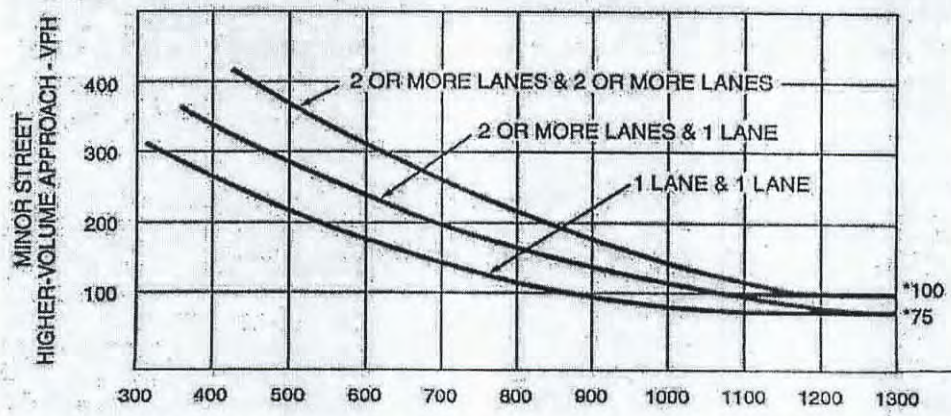
Siempre Viva / Hawaro Drive North



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

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE ~~70~~ 64 km/h OR ABOVE 40 mph ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Buildout + Hawano Phases 1-2

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)

COUNT DATE _____
CALC VH DATE 8-04-11
CHK _____ DATE _____

DIST ____ CO ____ RTE ____ PM ____

Major St: Siempre Viva Rd
Minor St: Hawano Dr North

Critical Approach Speed _____ mph
Critical Approach Speed _____ mph

Speed limit or critical speed on major street traffic > 64 km/h (40 mph)..... ☒ or
In built up area of isolated community of < 10,000 population..... ☐ } RURAL (R)
☐ URBAN (U)

(Based on Estimated Average Daily Traffic - See Note)

	Minimum Requirements EADT			
URBAN..... RURAL....X.....	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
CONDITION A - Minimum Vehicular Volume Satisfied X Not Satisfied _____				
Number of lanes for moving traffic on each approach Major Street / Minor Street	Urban	Rural	Urban	Rural
1..... / 1.....	8,000	5,600	2,400	1,680
2 or More..... / 1.....	9,600	6,720	2,400	1,680
2 or More..... / 2 or More.....	9,600	6,720	3,200	2,240
1..... / 2 or More.....	8,000	5,600	3,200	2,240
		26,270		2660
CONDITION B - Interruption of Continuous Traffic Satisfied X Not Satisfied _____	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Number of lanes for moving traffic on each approach Major Street / Minor Street	Urban	Rural	Urban	Rural
1..... / 1.....	12,000	8,400	1,200	850
2 or More..... / 1.....	14,400	10,080	1,200	850
2 or More..... / 2 or More.....	14,400	10,080	1,600	1,120
1..... / 2 or More.....	12,000	8,400	1,600	1,120
		26,270		2660
Combination of CONDITIONS A + B Satisfied X Not Satisfied _____ No one condition satisfied, but following conditions fulfilled 80% or more..... X (A) X (B)	2 CONDITIONS 80%		2 CONDITIONS 80%	

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

-Synchro Analysis

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	249	1190	683	262	32	95
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	262	1253	719	276	34	100
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					Raised	
Median storage veh)					1	
Upstream signal (ft)			624			
pX, platoon unblocked	0.95				0.95	0.95
vC, conflicting volume	995				1869	359
vC1, stage 1 conf vol					719	
vC2, stage 2 conf vol					1151	
vCu, unblocked vol	942				1863	273
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)	2.2				3.5	3.3
p0 queue free %	62				73	85
cM capacity (veh/h)	688				123	688

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1	SB 2
Volume Total	262	626	626	359	359	276	34	100
Volume Left	262	0	0	0	0	0	34	0
Volume Right	0	0	0	0	0	276	0	100
cSH	688	1700	1700	1700	1700	1700	123	688
Volume to Capacity	0.38	0.37	0.37	0.21	0.21	0.16	0.27	0.15
Queue Length 95th (ft)	45	0	0	0	0	0	26	13
Control Delay (s)	13.4	0.0	0.0	0.0	0.0	0.0	45.1	11.1
Lane LOS	B						E	B
Approach Delay (s)	2.3			0.0			19.7	
Approach LOS							C	

Intersection Summary

Average Delay	2.3		
Intersection Capacity Utilization	46.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	62	1029	1059	65	131	380
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	65	1083	1115	68	138	400
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					Raised	
Median storage veh)					1	
Upstream signal (ft)			624			
pX, platoon unblocked	0.84				0.84	0.84
vC, conflicting volume	1183				1787	557
vC1, stage 1 conf vol					1115	
vC2, stage 2 conf vol					672	
vCu, unblocked vol	1026				1746	280
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)	2.2				3.5	3.3
p0 queue free %	88				23	33
cM capacity (veh/h)	564				179	601

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1	SB 2
Volume Total	65	542	542	557	557	68	138	400
Volume Left	65	0	0	0	0	0	138	0
Volume Right	0	0	0	0	0	68	0	400
cSH	564	1700	1700	1700	1700	1700	179	601
Volume to Capacity	0.12	0.32	0.32	0.33	0.33	0.04	0.77	0.67
Queue Length 95th (ft)	10	0	0	0	0	0	127	124
Control Delay (s)	12.2	0.0	0.0	0.0	0.0	0.0	71.7	22.1
Lane LOS	B						F	C
Approach Delay (s)	0.7			0.0			34.8	
Approach LOS							D	

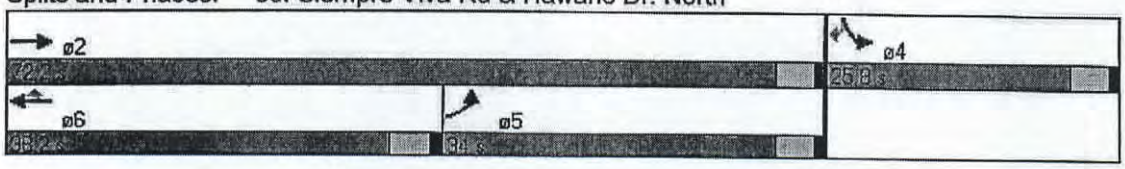
Intersection Summary			
Average Delay	6.8		
Intersection Capacity Utilization	59.5%	ICU Level of Service	B
Analysis Period (min)	15		

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	3539	3539	1583	1770	1583
Satd. Flow (RTOR)				276		100
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	249	1190	683	262	32	95
Adj. Flow (vph)	262	1253	719	276	34	100
Lane Group Flow (vph)	262	1253	719	276	34	100
Turn Type	Prot			Perm		Perm
Protected Phases	5	2	6		4	
Permitted Phases				6		4
Total Split (s)	34.0	72.2	38.2	38.2	25.8	25.8
Act Effct Green (s)	30.0	82.1	48.1	48.1	7.9	7.9
Actuated g/C Ratio	0.31	0.84	0.49	0.49	0.08	0.08
v/c Ratio	0.48	0.42	0.41	0.30	0.24	0.45
Control Delay	31.4	2.6	7.4	1.4	45.5	15.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.4	2.6	7.4	1.4	45.5	15.7
LOS	C	A	A	A	D	B
Approach Delay		7.6	5.7		23.3	
Approach LOS		A	A		C	

Intersection Summary

Cycle Length: 98
Actuated Cycle Length: 98
Offset: 26 (27%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.48
Intersection Signal Delay: 7.7 — Intersection LOS: A
Intersection Capacity Utilization 46.0% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 85: Siempre Viva Rd & Hawano Dr. North

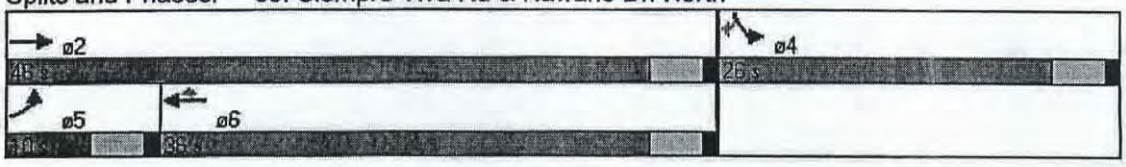


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	3539	3539	1583	931	1583
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	3539	3539	1583	931	1583
Satd. Flow (RTOR)				68		194
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	62	1029	1059	65	131	380
Adj. Flow (vph)	65	1083	1115	68	138	400
Lane Group Flow (vph)	65	1083	1115	68	138	400
Turn Type	Prot			Perm		Perm
Protected Phases	5	2	6		4	
Permitted Phases				6		4
Total Split (s)	10.0	46.0	36.0	36.0	26.0	26.0
Act Effct Green (s)	7.0	48.3	41.4	41.4	15.7	15.7
Actuated g/C Ratio	0.10	0.67	0.58	0.58	0.22	0.22
v/c Ratio	0.38	0.46	0.55	0.07	0.68	0.80
Control Delay	37.3	7.3	4.7	0.4	41.4	25.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.3	7.3	4.7	0.4	41.4	25.6
LOS	D	A	A	A	D	C
Approach Delay		9.0	4.4		29.7	
Approach LOS		A	A		C	

Intersection Summary

Cycle Length: 72
Actuated Cycle Length: 72
Offset: 3 (4%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 11.0 — Intersection LOS: B
Intersection Capacity Utilization 59.5% — ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 85: Siempre Viva Rd & Hawano Dr. North



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	3539	3539	1583	931	1583
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	3539	3539	1583	931	1583
Satd. Flow (RTOR)				68		194
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	62	1029	1059	65	131	380
Adj. Flow (vph)	65	1083	1115	68	138	400
Lane Group Flow (vph)	65	1083	1115	68	138	400
Turn Type	Prot			Perm		Perm
Protected Phases	5	2	6		4	
Permitted Phases				6		4
Total Split (s)	10.0	46.0	36.0	36.0	26.0	26.0
Act Effct Green (s)	7.0	48.3	41.4	41.4	15.7	15.7
Actuated g/C Ratio	0.10	0.67	0.58	0.58	0.22	0.22
v/c Ratio	0.38	0.46	0.55	0.07	0.68	0.80
Control Delay	37.3	7.3	4.7	0.4	41.4	25.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.3	7.3	4.7	0.4	41.4	25.6
LOS	D	A	A	A	D	C
Approach Delay		9.0	4.4		29.7	
Approach LOS		A	A		C	

Intersection Summary

Cycle Length: 72
Actuated Cycle Length: 72
Offset: 3 (4%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 11.0 — Intersection LOS: B
Intersection Capacity Utilization 59.5% — ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 85: Siempre Viva Rd & Hawano Dr. North

APPENDIX N

- Responses to County Comments

Darnell & ASSOCIATES, INC.
TRANSPORTATION PLANNING & TRAFFIC ENGINEERING

M E M O R A N D U M

DATE: December 5, 2011

TO: Dan Berkus, Paragon Management Company
Jeramey Harding, T&B Planning

FROM: Bill E. Darnell, P.E.
Vicki S. Haskell, P.E.

D&A Ref. No: 091201

RE: Hawano (TM 5566; ER 93-19-006OO) – Responses to County Comments Dated June 17, 2011

Darnell & Associates, Inc. (D&A) has reviewed the County of San Diego's June 17, 2011 comments on our March 30, 2011 Traffic Study for Hawano (TM 5566; ER 93-19-006OO). The attached table summarizes the County's comments and D&A's written responses to each of the comments. These responses have been incorporated into our December 2011 iteration of the traffic study.

Please feel free to contact the office if you have any questions.

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HAWANO (TM 5566, ER 93-19-006OO)
RESPONSES TO COUNTY OF SAN DIEGO JUNE 17, 2011 TRAFFIC RELATED COMMENTS

Item No.	Subject Area	Issue, Revision or Information Required	Issue Resolution Summary (Response To Comment)	Location where Revision can be Found in Revised Document
24-15	Traffic Study	The TIS should note that if there is a future change in the proposed phasing of the project's lot development plan that change could require revisions to the traffic analysis to determine if the change alters the project's impact and mitigation findings.	Comment is acknowledged. A note has been added to the trip generation section of the traffic study to indicate that if the phasing of the project's lot development plan changes, a new traffic study may be required to assess the potential changes to the project's impacts and mitigation findings.	Section II, Page 11
24-16	Traffic Study	The TIS should update the information regarding the SR-11 ramp interchanges (Pg.6). Caltrans has identified that the preferred SR-11 Interchange Alternative includes a full interchange at Enrico Fermi Drive and half interchange at Siempre Viva Road. It should be noted that until the SR-11 Final EIR is certified that the proposed SR-11 design is still subject to change.	The discussion on the SR-11 interchange has been accordingly updated, however, since the build out analysis is based on the assumptions included in the East Otay Mesa Specific Plan the buildout analysis still includes the SR-11 with the two full interchanges.	Section I, Page 6
24-17	Traffic Study	The consultant should review the identification of jurisdiction for the roadway segments (Ex. Table 5). Some study area roadway segments appear to be located within both the City and County jurisdictions although not indicated in the TIS table (Ex Otay Mesa Road from Sanyo Avenue to Enrico Fermi Drive)	The jurisdictions of the roadway segments have been updated accordingly.	Tables 5, 13,17,25, and 31
24-18	Traffic Study	Figure 35 (Pg.90) should create a designation for improvements up to the 4 lane Major standard (as identified by note "B" for Siempre Viva Road).	The intent of Figure 35 was to show that the project traffic could be accommodated by something less than the ultimate requirements of the Specific Plan. However, the graphic has been revised to reflect the ultimate requirements consistent with the Specific Plan requirements.	Figure 35
24-19	Traffic Study	Table 26 (Pg.88) classifications for Siempre Viva Road for Phases 1-2 should be identified as 4M (Major road) as indicated in footnote "c".	The intent of Table 26 was to show that the project traffic could be accommodated by something less than the ultimate requirements of the Specific Plan. However, the table has been revised to reflect the ultimate requirements consistent with the Specific Plan requirements.	Table 26
24-20	Traffic Study	The traffic consultant should coordinate with DPW Conditioning staff to confirm the project's required frontage and onsite road improvements are consistent with the Subdivision Ordinance and the East Otay Mesa Specific Plan. Onsite Circulation Element roads such as Siempre Viva Road would require full/ultimate improvements. For example, Table 26 indicates the onsite segment of Siempre Viva Road would be built to 2-lane Light Collector standards and that the applicant would dedicate and provide security for the full width Major Road improvements. Compliance with the Subdivision Ordinance would require that the onsite segment of Siempre Viva Road be improved to a 4-lane Major Road design prior to the Final Map for Phase 2.	The Tables and Figures describing the on-site circulation have been updated to reflect that upon completion of Phase 2 of the project all circulation element roads will be built out to their full circulation element standards.	Figure 35 and Table 26
24-21	Traffic Study	The TIS (Pg.103/104) should note that mitigation in the City of San Diego is required to be in place prior to Final Map for Phase One (not building permits) for the intersection improvements to Airway Road/Sanyo Avenue and Siempre Viva Road/Michael Faraday Drive.	The cumulative impact mitigation measures for Airway Road/Sanyo Avenue and Siempre Viva Road/Michael Faraday Drive have been revised accordingly.	Section VIII

HAWANO (TM 5566, ER 93-19-006OO)
RESPONSES TO COUNTY OF SAN DIEGO JUNE 17, 2011 TRAFFIC RELATED COMMENTS

Item No.	Subject Area	Issue, Revision or Information Required	Issue Resolution Summary (Response To Comment)	Location where Revision can be Found in Revised Document
24-22	Traffic Study/ Internal Access Roads - Phase I	The TIS should assess access alternatives that are consistent with the Specific Plan design standards for minimizing median cuts along Gateway roads. The proposed lot redesign for Phase 1 results in primary access (Hawano Drive North) onto Siempre Viva Road, which is a Circulation Element (CE) road and a Specific Plan Gateway road. The Hawano Drive North connection would require full access and a median cut opening along Siempre Viva Road. For Gateways roads classified as Major Roads, median cuts should be minimized according to the Specific Plan. The TIS indicates (Table 25) that Siempre Viva Road is projected to carry the highest volume of daily traffic when compared to the project's other frontage roads. Primary access onto Siempre Viva Road for the Phase 1 lots could create intersection design challenges due to the higher daily traffic volumes.	On October 7, 2011 The County of San Diego approved a Design Exception request which supported the proposed project design.	Appendix M
24-23	Traffic Study/ Internal Access Roads - Phase I	The TIS should assess access alternatives that reduce the number of proposed direct access points along Alta Road which is a Circulation Element (CE) road. The proposed lot redesign for Phase 1 would create three or more driveways along Alta Road between Airway Road and Siempre Viva Road. Direct access onto CE roads should be minimized to the extent possible. The access alternatives should assess lot design that would require less than four access points along Alta Road.	See Response to Item 24-22	Appendix M
24-24	Traffic Study/ Internal Access Roads - Phase I	The access alternatives should explore project access onto Airway Place, which is non-CE/Gateway road with relatively low projected traffic volumes.	See Response to Item 24-22	Appendix M
24-25	Traffic Study/ Internal Access Roads - Phase I	The TIS should discuss the adequacy of the proposed cul-de-sac design for Hawano Drive North in accommodating projected Phase 1 traffic. The proposed lot redesign for Phase 1 includes Hawano Drive North which has lengthy cul-de-sac design. The TIS indicates (Table 27) that Hawano Drive North will carry up to 5,500 trips per day which exceeds the 4,500 ADT threshold for a non-CE road and far exceeds the capacity assumption for a cul-de-sac as identified in the County's Public Road Standards.	See Response to Item 24-22	Appendix M
24-26	Traffic Study/General Information	Pending evaluation and approval of the project's Preliminary Drainage Study and Stormwater Management Plan, further improvements may be required to the surrounding area as mitigation for drainage impacts caused by this project.	Comment is acknowledged; no response is necessary.	N/A