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
La Jolla, CA 92122

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, P.E.
Principal Transportation Engineer
RCE 63754

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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
091201_Hawano_RPT3 (Dec 5 2011).doc/12-11

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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.

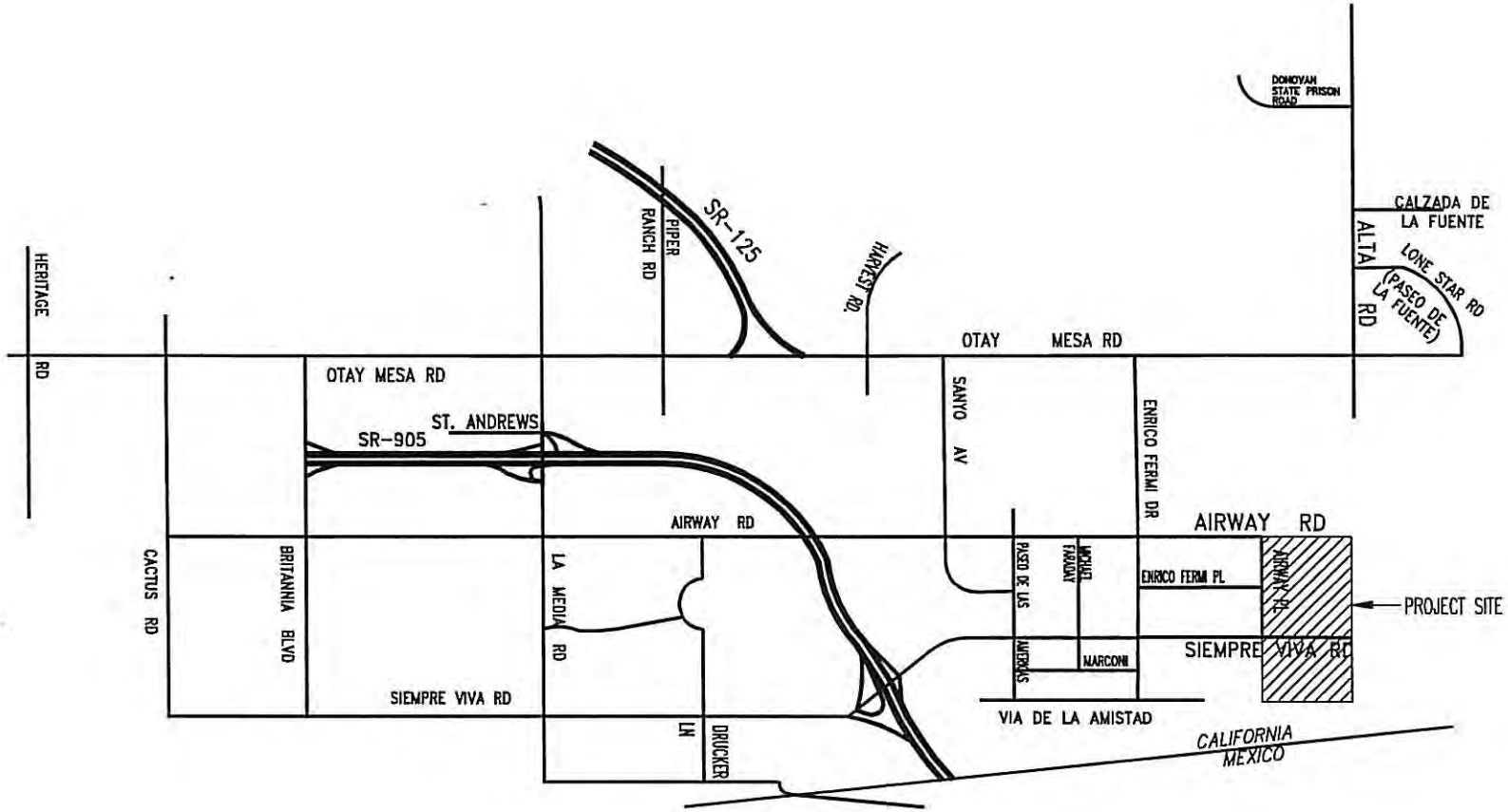

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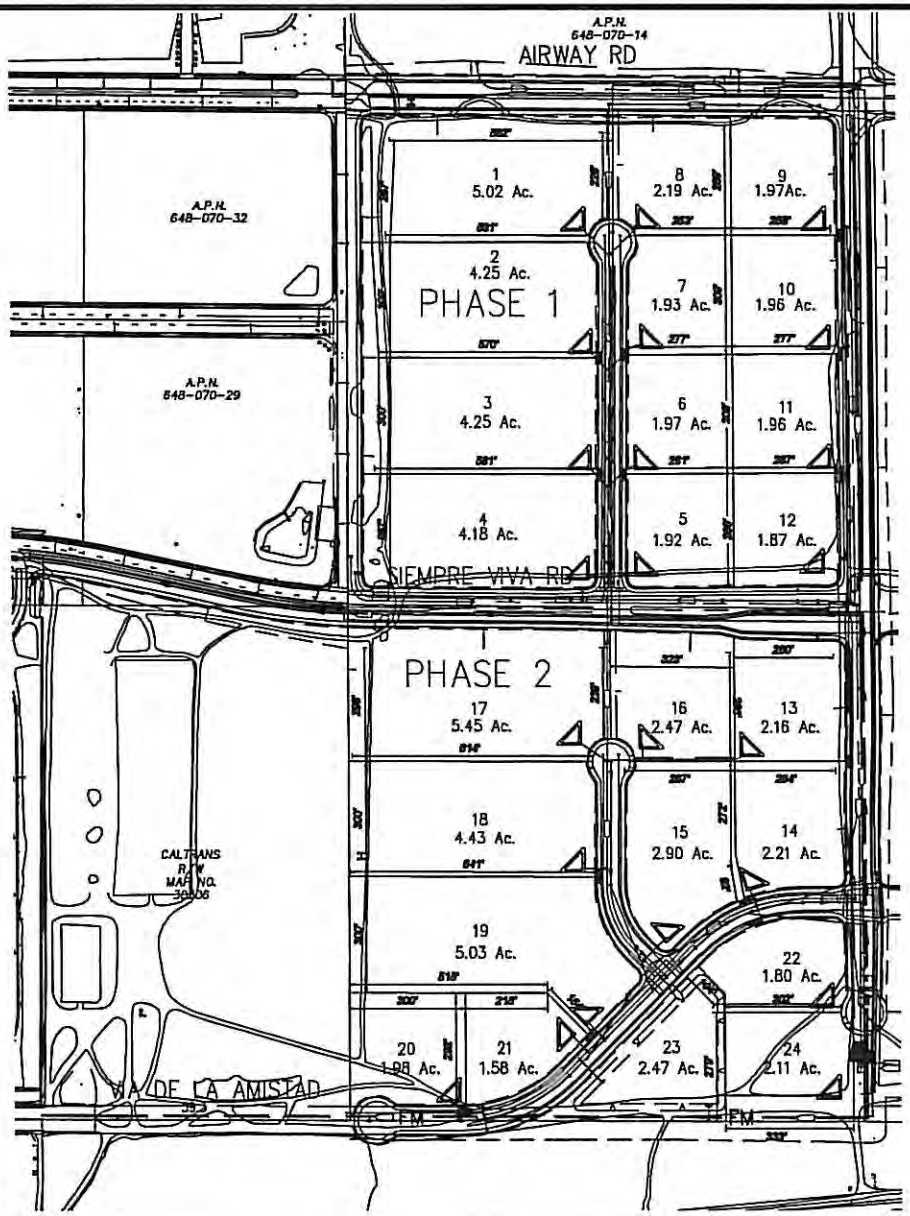
FIGURE 1
VICINITY MAP



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

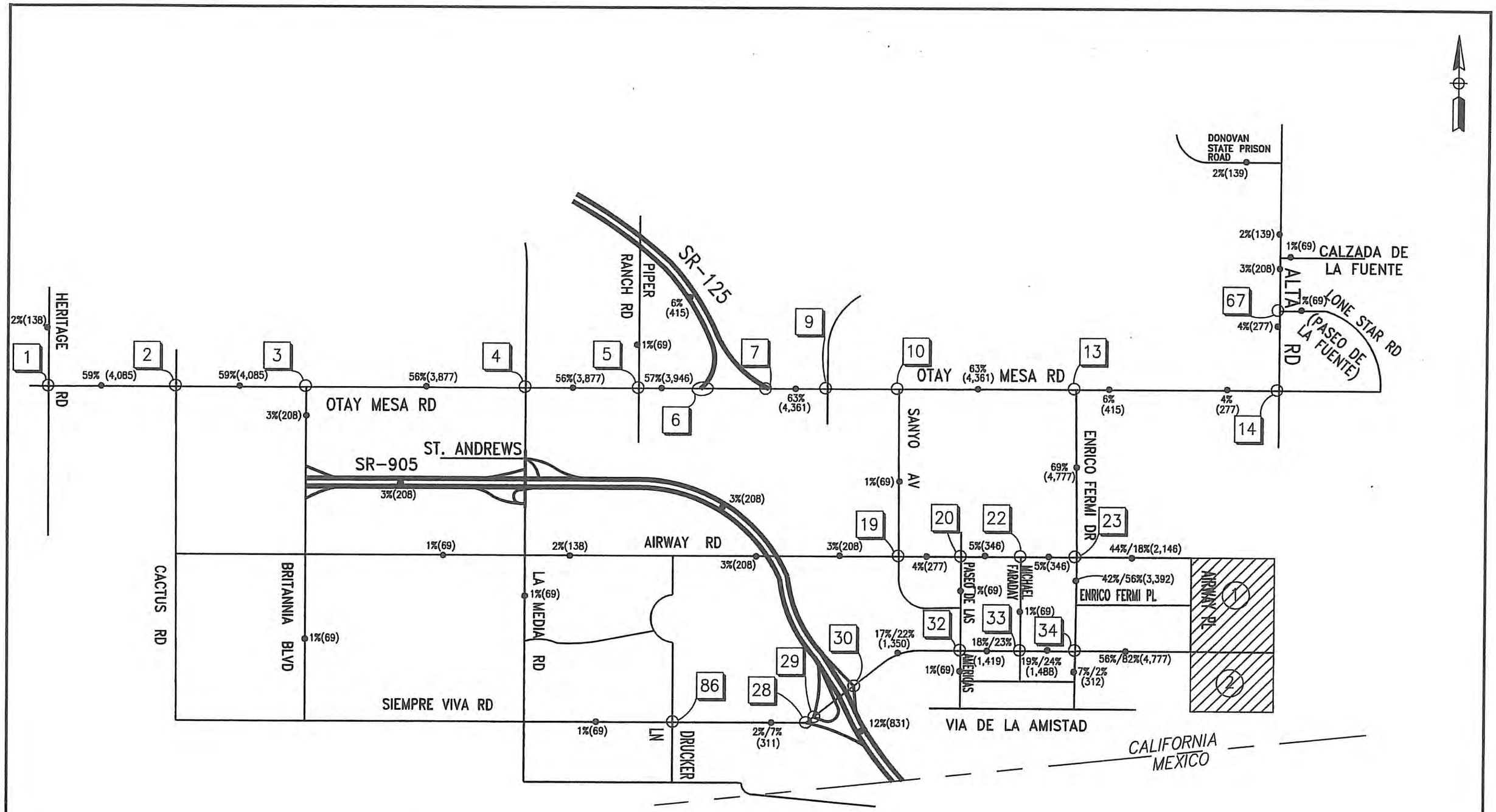
Land Use	Total No Of Units (KSF)	Daily	AM Peak Hour			PM Peak Hour		
			Total	In	Out	Total	In	Out
Phase 1	432.682[(a)]	6,923	831	665	166	831	166	665
Phase 2	419.744[(a)]	6,716	806	645	161	806	161	645
Grand Total Phases 1-2:	**852.426 [(a)]**	**13,639**	**1,637**	**1,310**	**327**	**1,637**	**327**	**1,310**

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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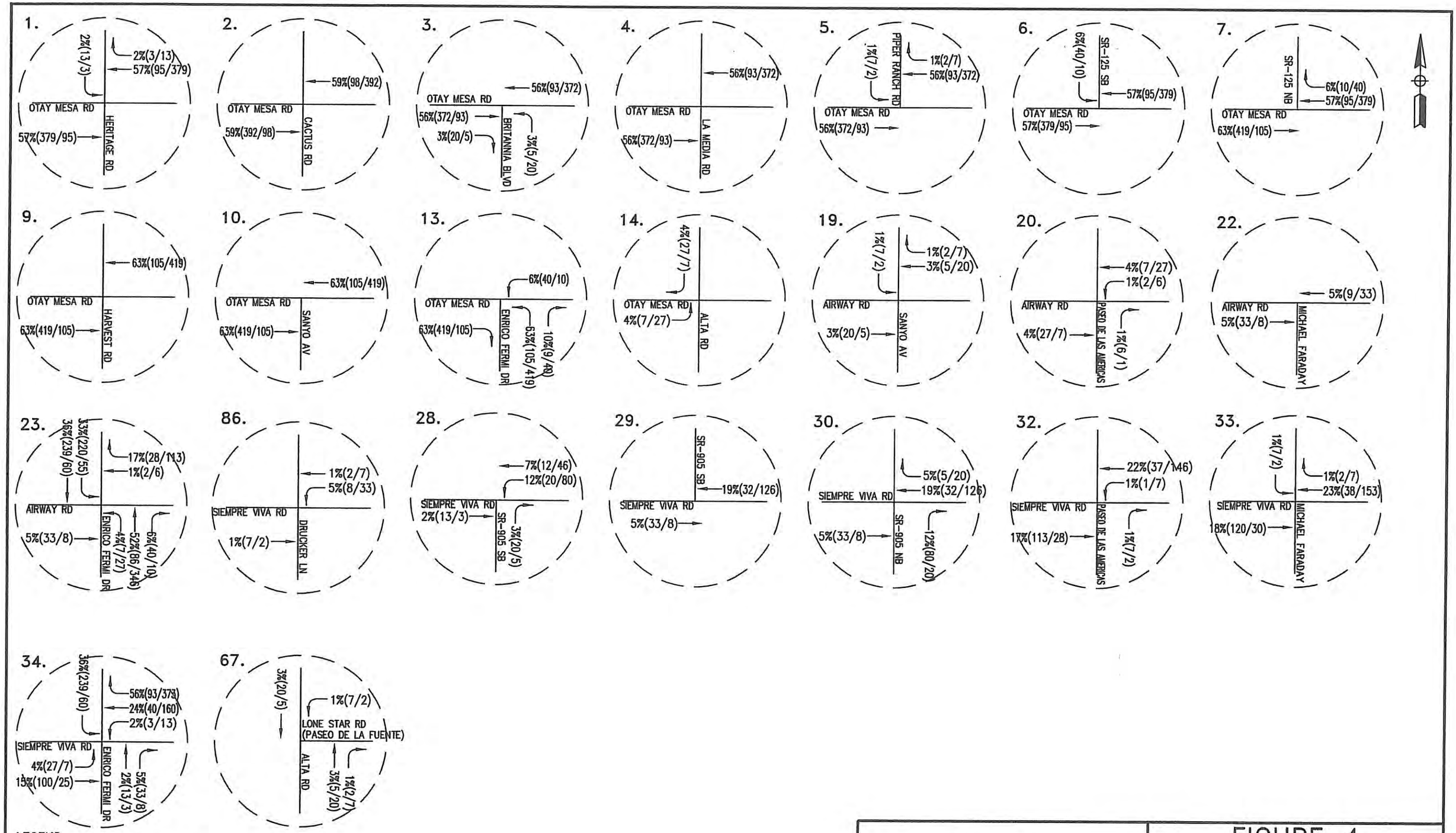
FIGURE 3

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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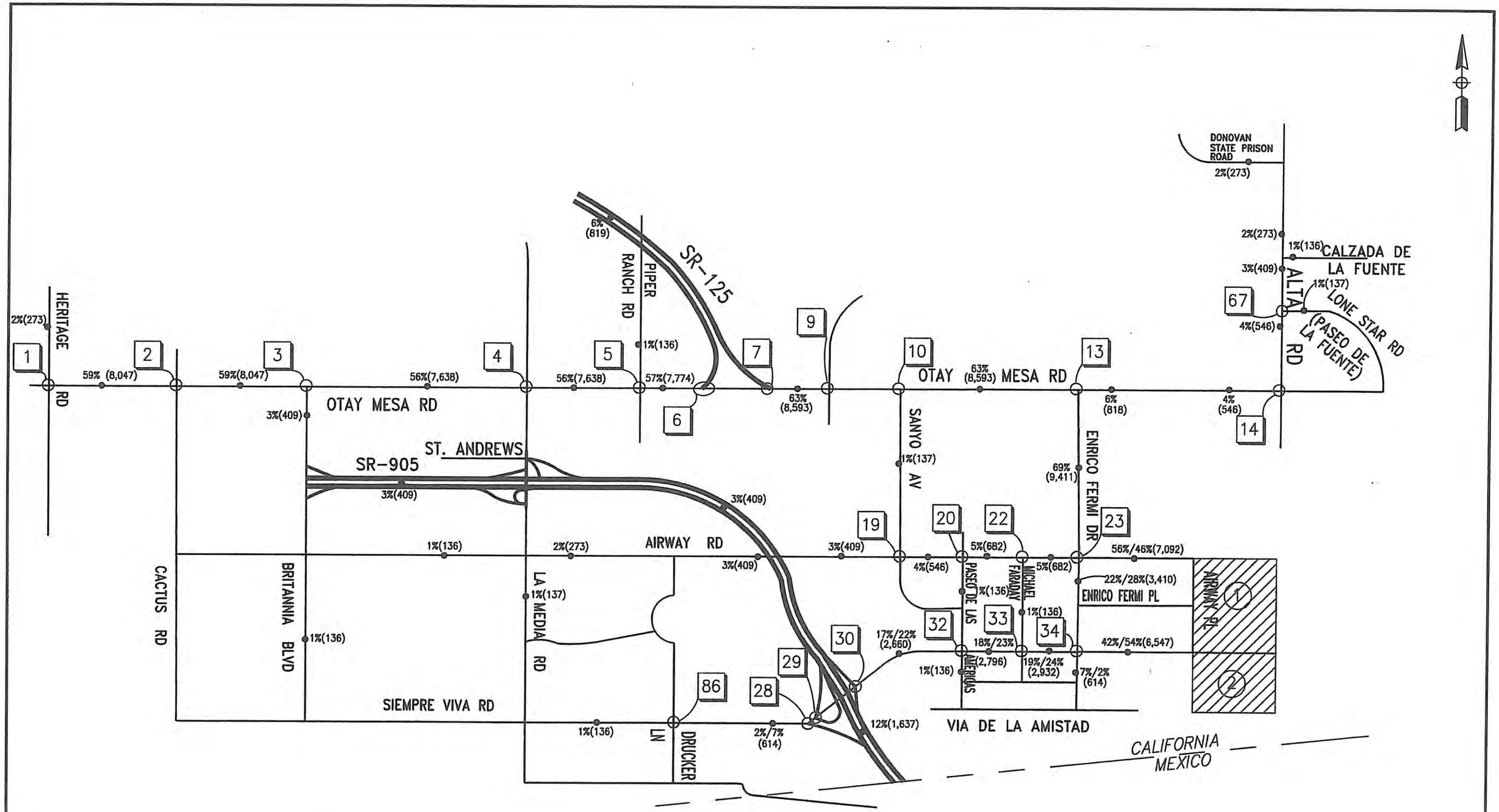
FIGURE 4

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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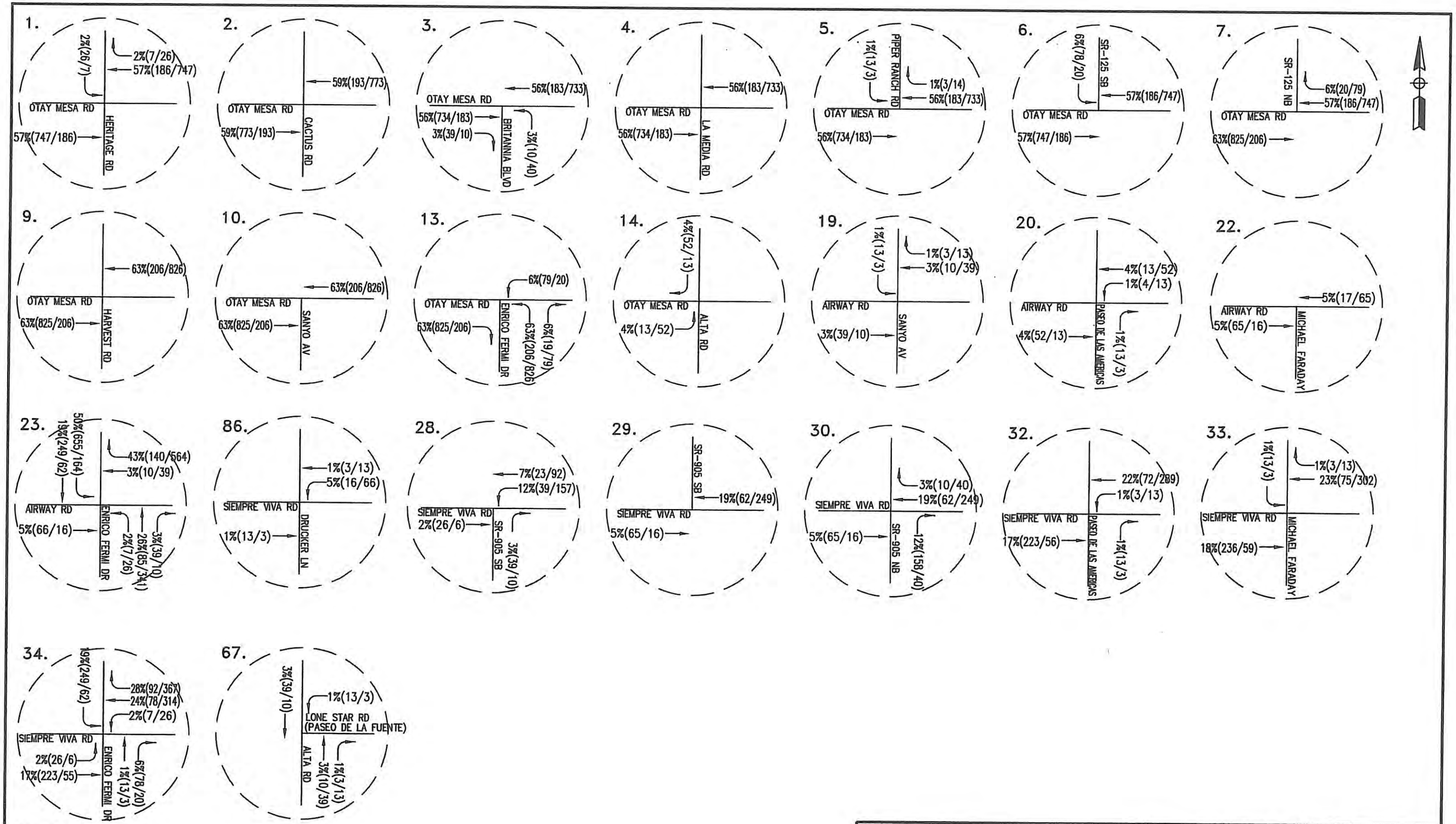
FIGURE 5

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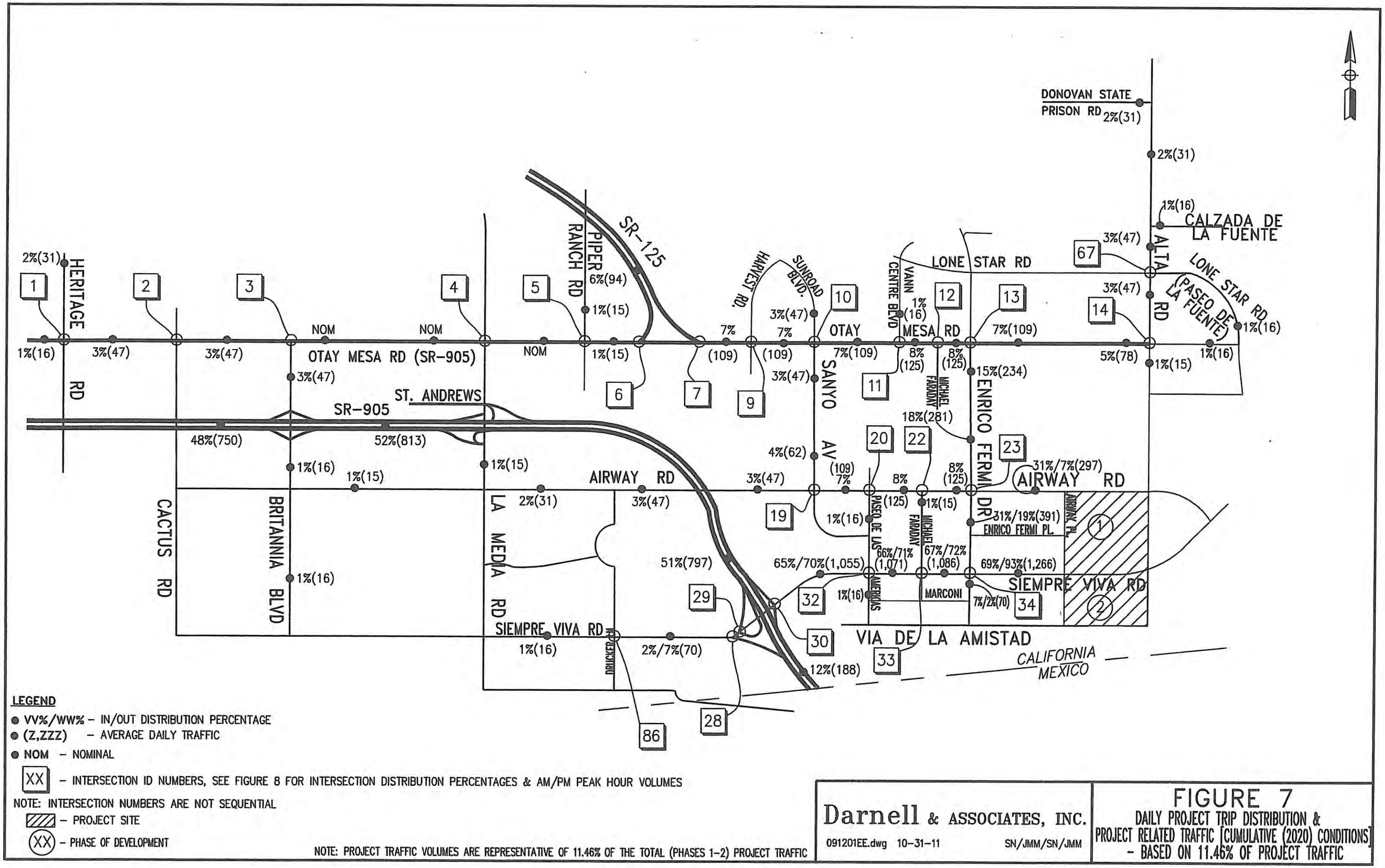
FIGURE 6
PEAK HOUR TRIP DISTRIBUTION & PROJECT RELATED TRAFFIC VOLUMES FOR PHASES 1-2 (EXISTING CONDITIONS)



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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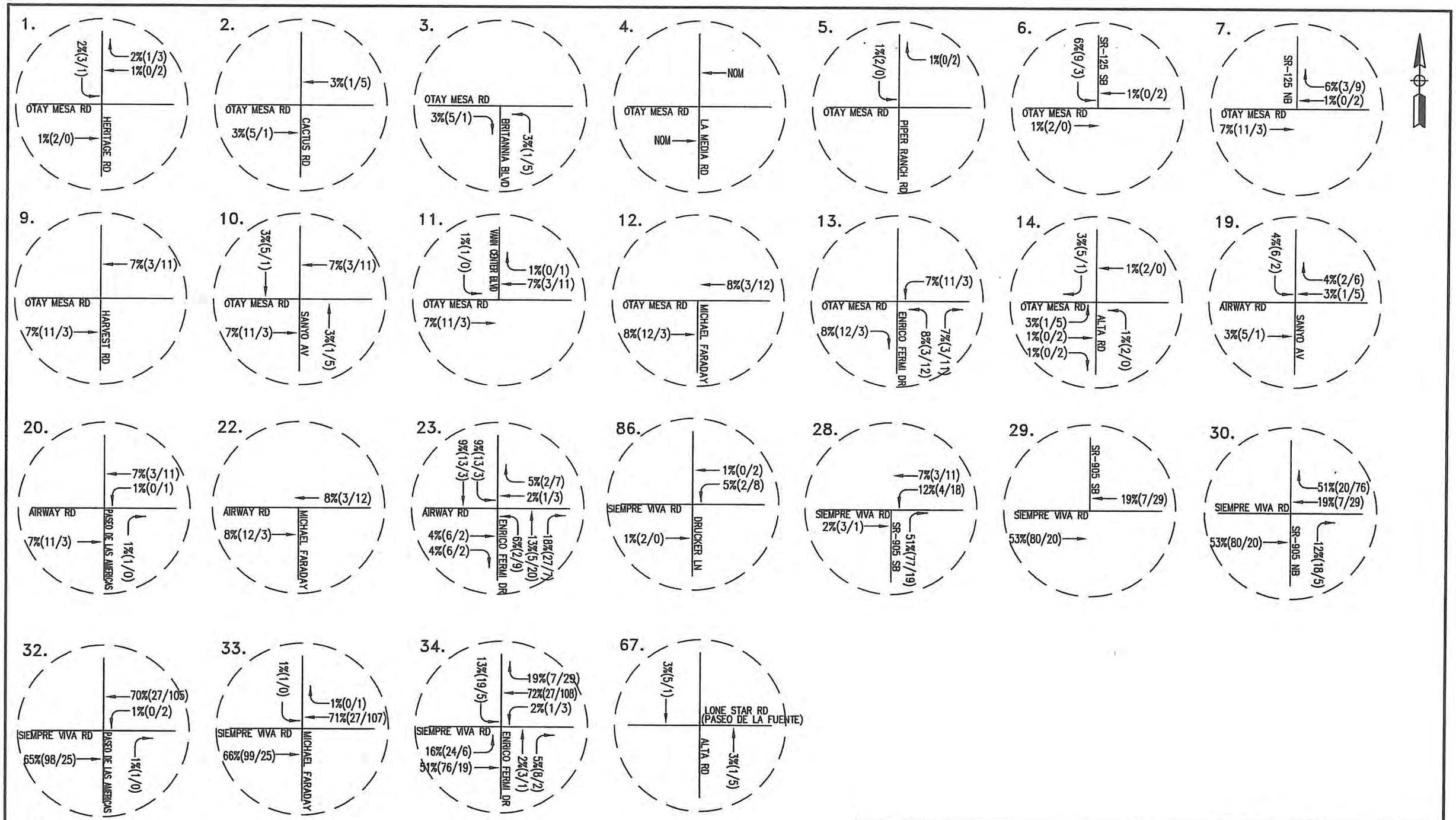
FIGURE 7

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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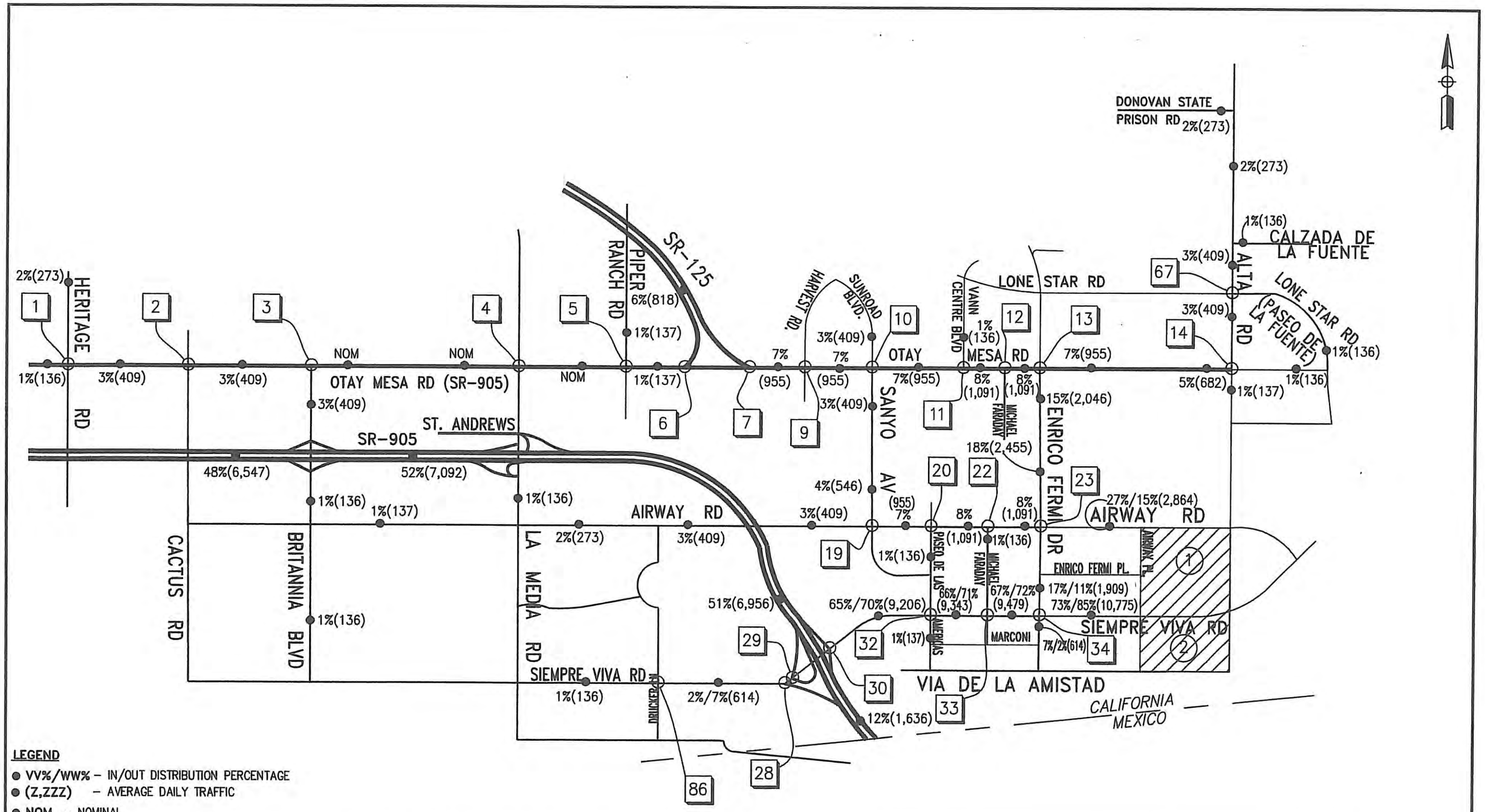
FIGURE 8

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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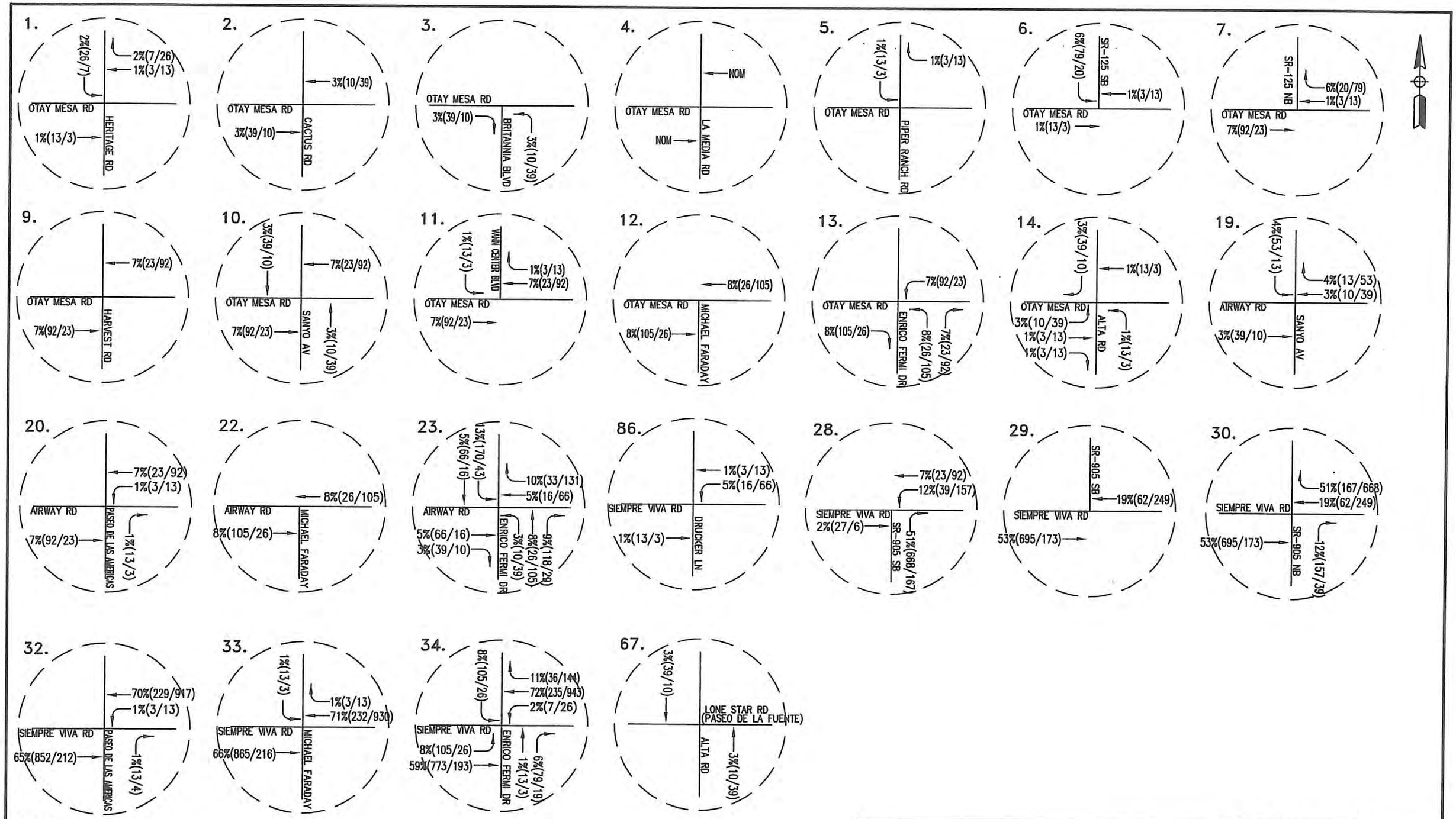
091201EE.dwg 10–31–11 SN/JMM/SN/JMM

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

Darnell & ASSOCIATES, INC.

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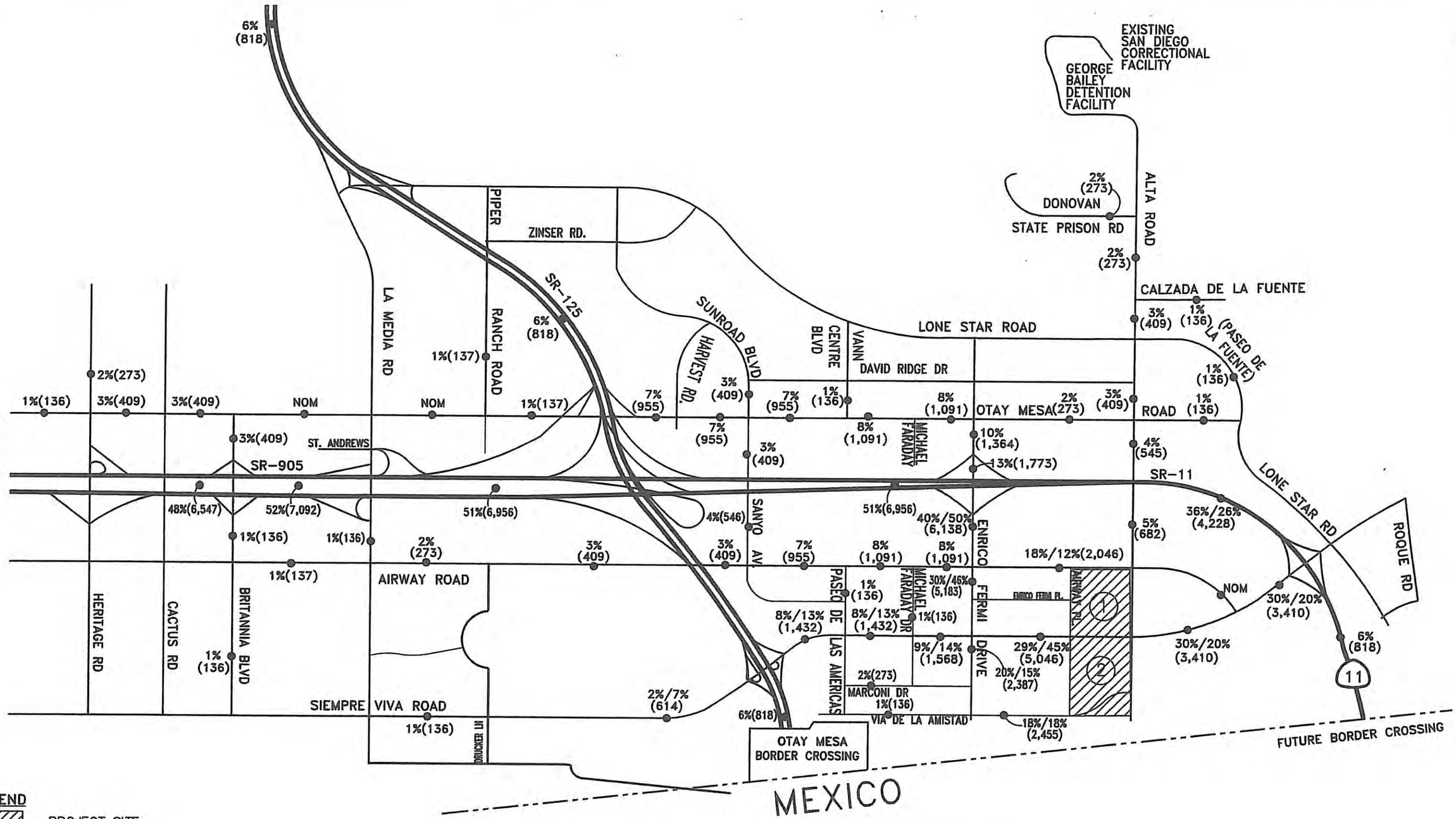
FIGURE 10

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

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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).

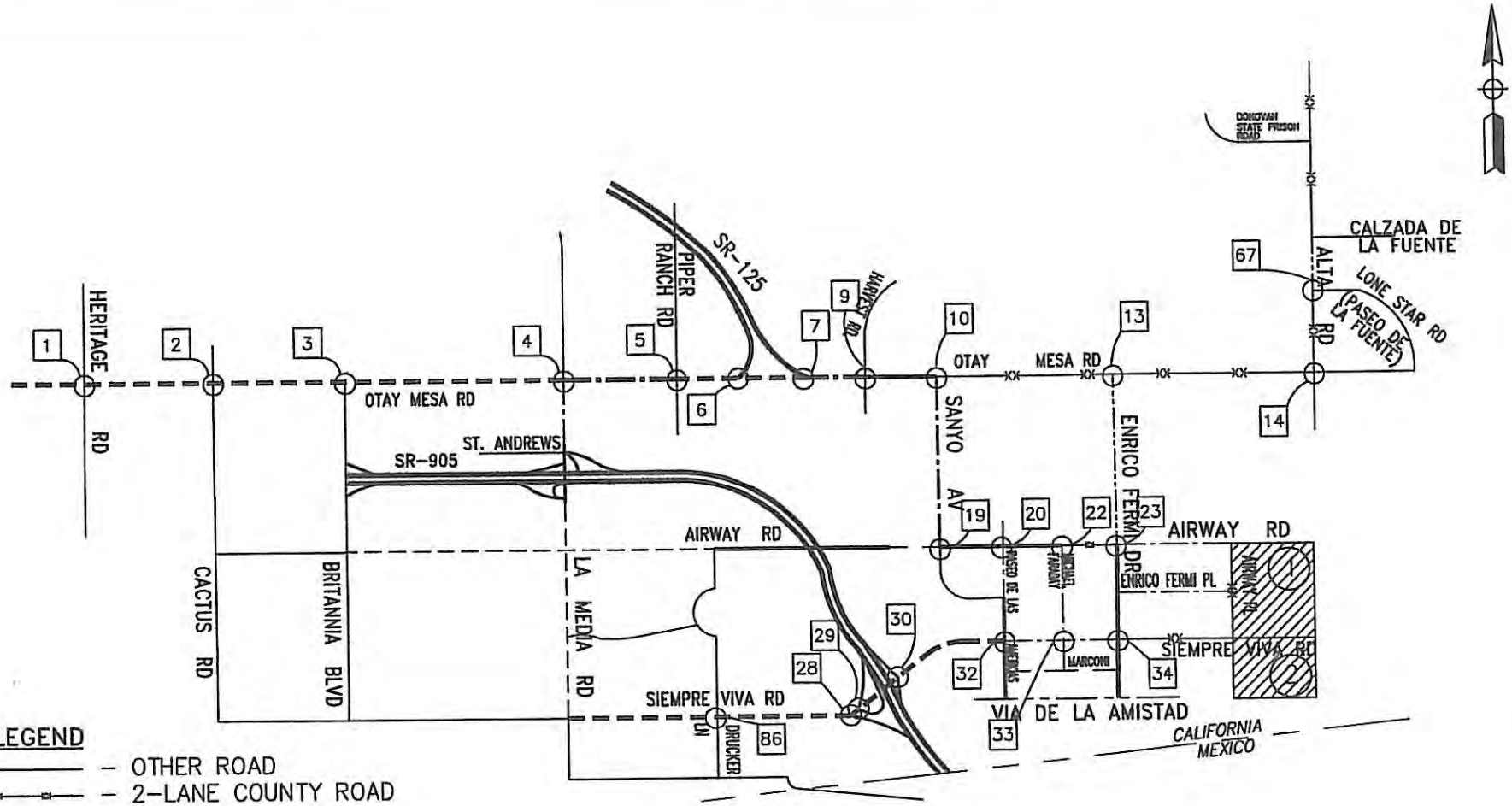
Although Phase 1A of the new SR-905 freeway has been opened, the segment of Otay Mesa Road between Heritage Road and approximately Harvest Road is still under the jurisdiction of Caltrans as well as the City of San Diego and/or County of San Diego, and is thus referred to as Interim SR-905 (Otay Mesa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

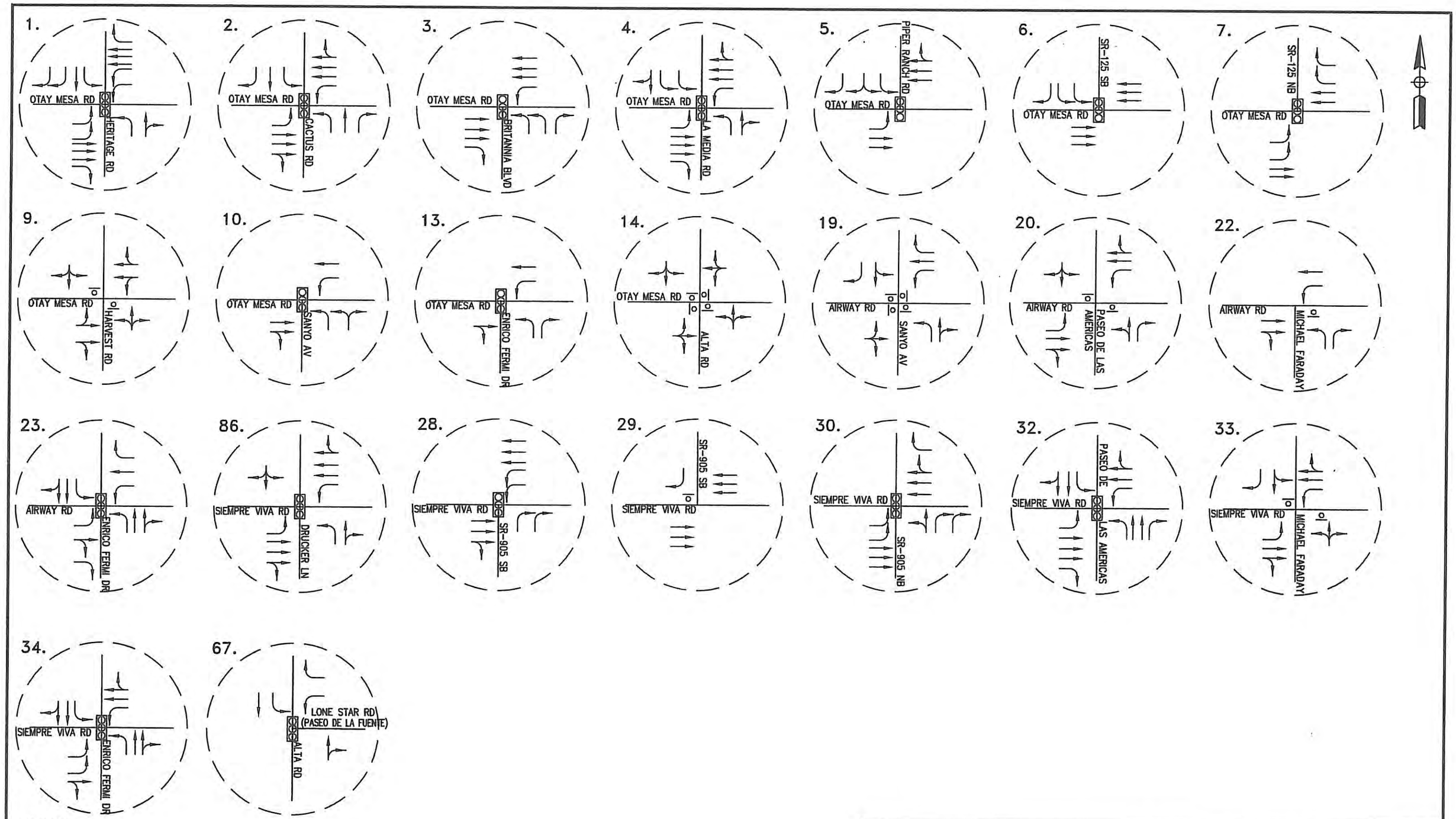

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FIGURE 13
EXISTING CONDITIONS
INTERSECTION GEOMETRICS

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

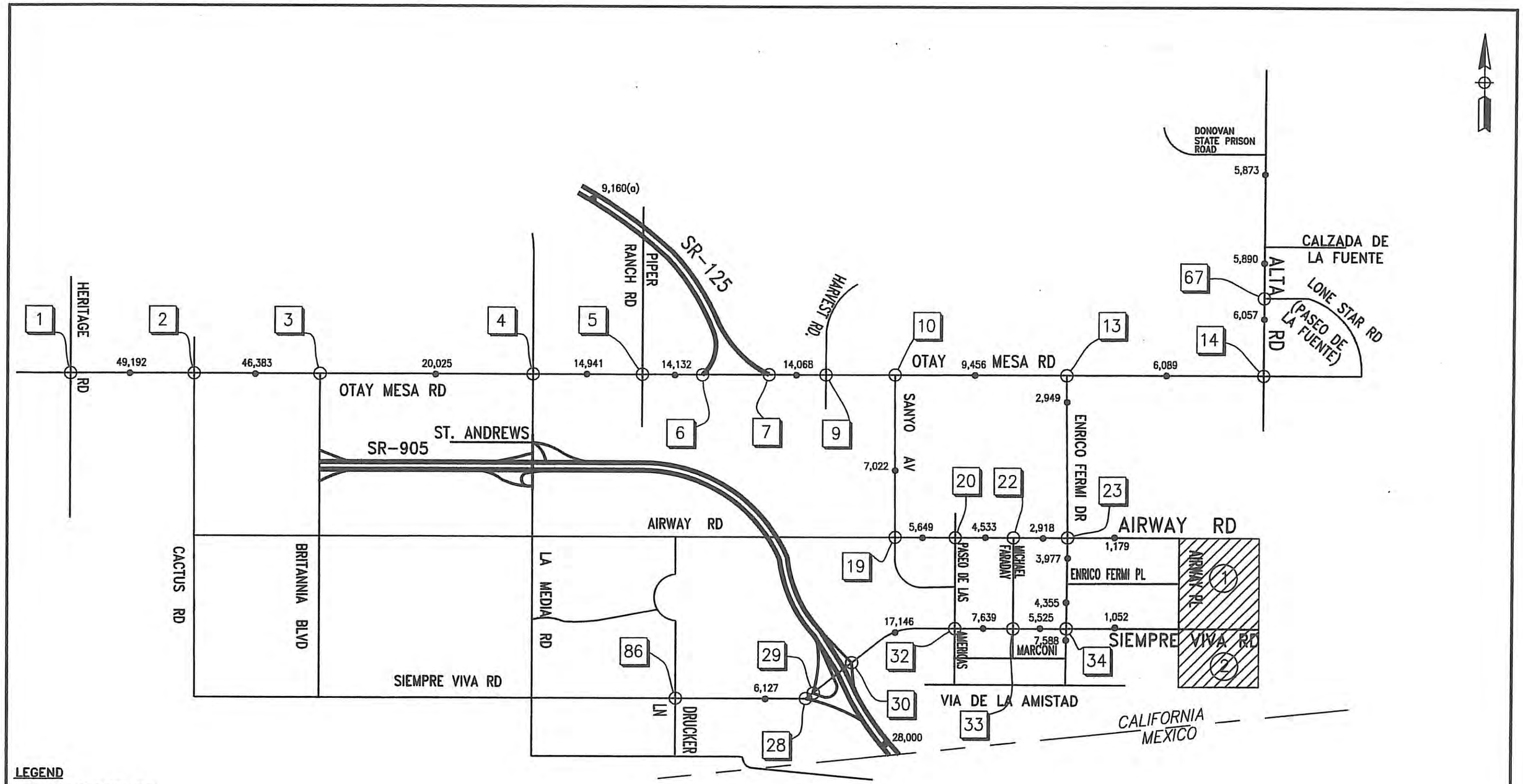
A review of the 2011 count data for Airway Road between Sanyo Avenue and Enrico Fermi Drive found that there was a 74% to 82% reduction in average daily traffic on these segments of Airway Road when compared to the previous counts collected in March 2008. Therefore, the March 2008 count data (which was 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.

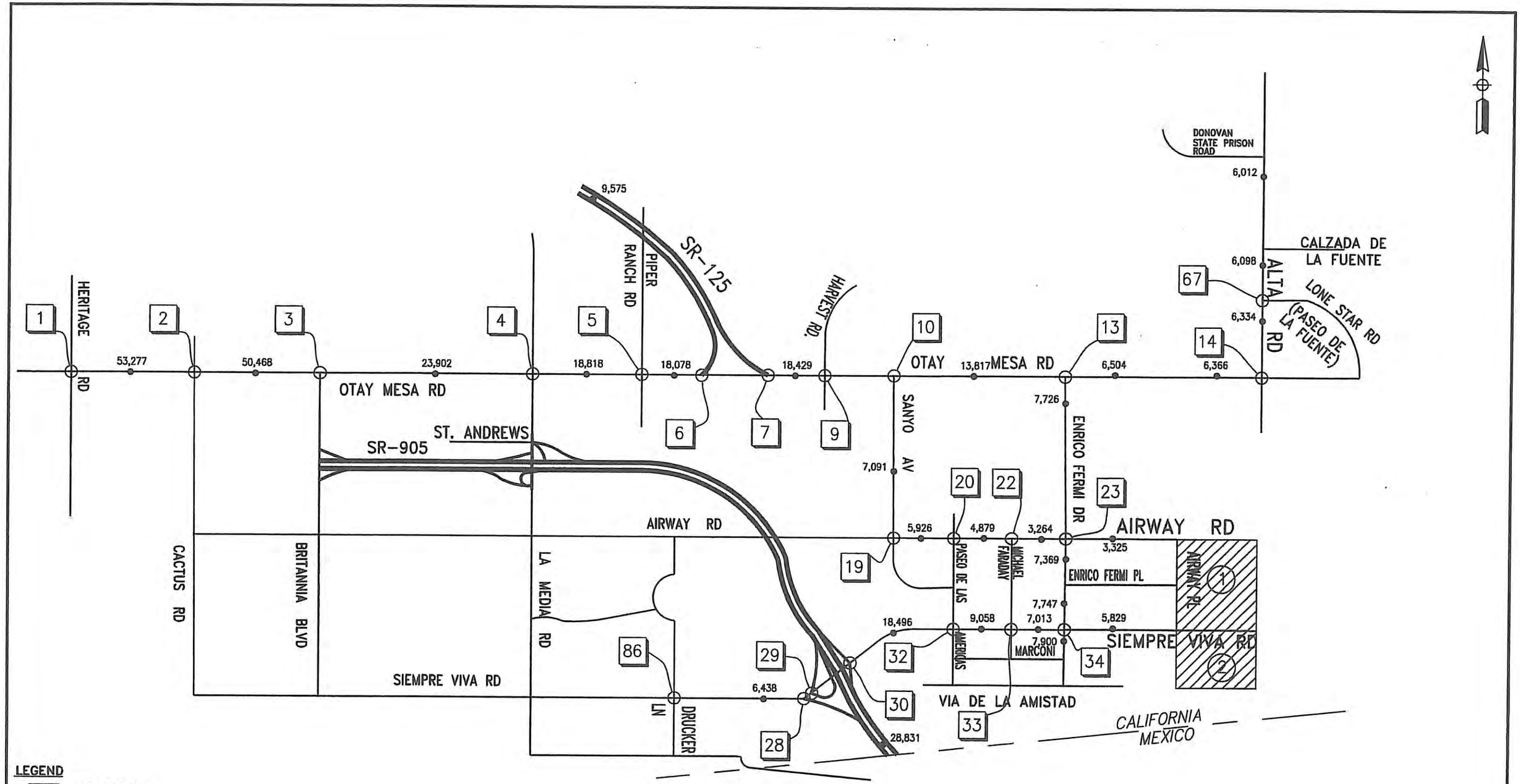
For analysis purposes, under existing plus Phase 1 conditions the segment of Siempre Viva Road between Enrico Fermi Drive and Airway Place was assumed to have the capacity equivalent to that of a Light Collector Road, 16,200 ADT at LOS E.

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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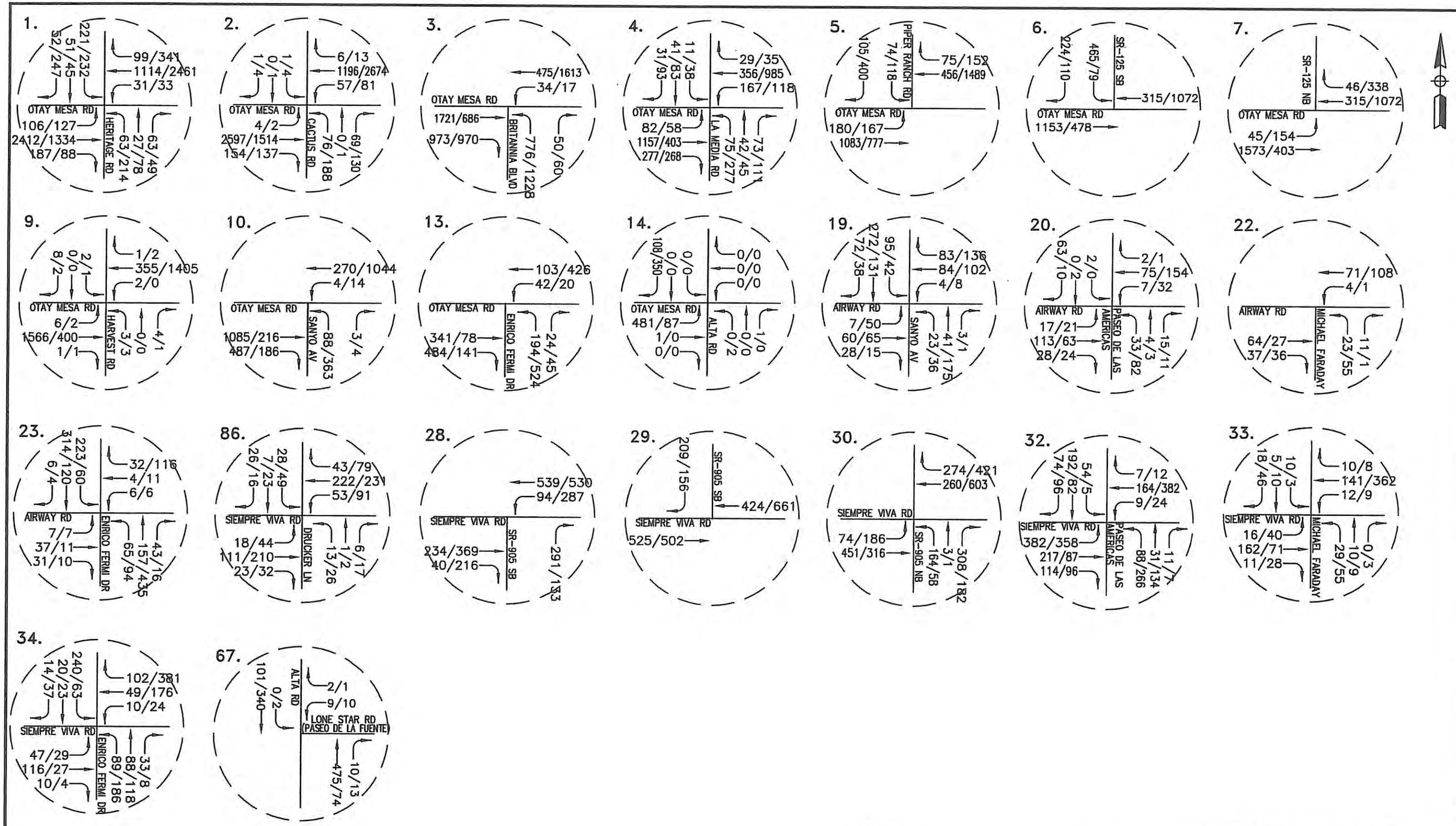
FIGURE 16

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

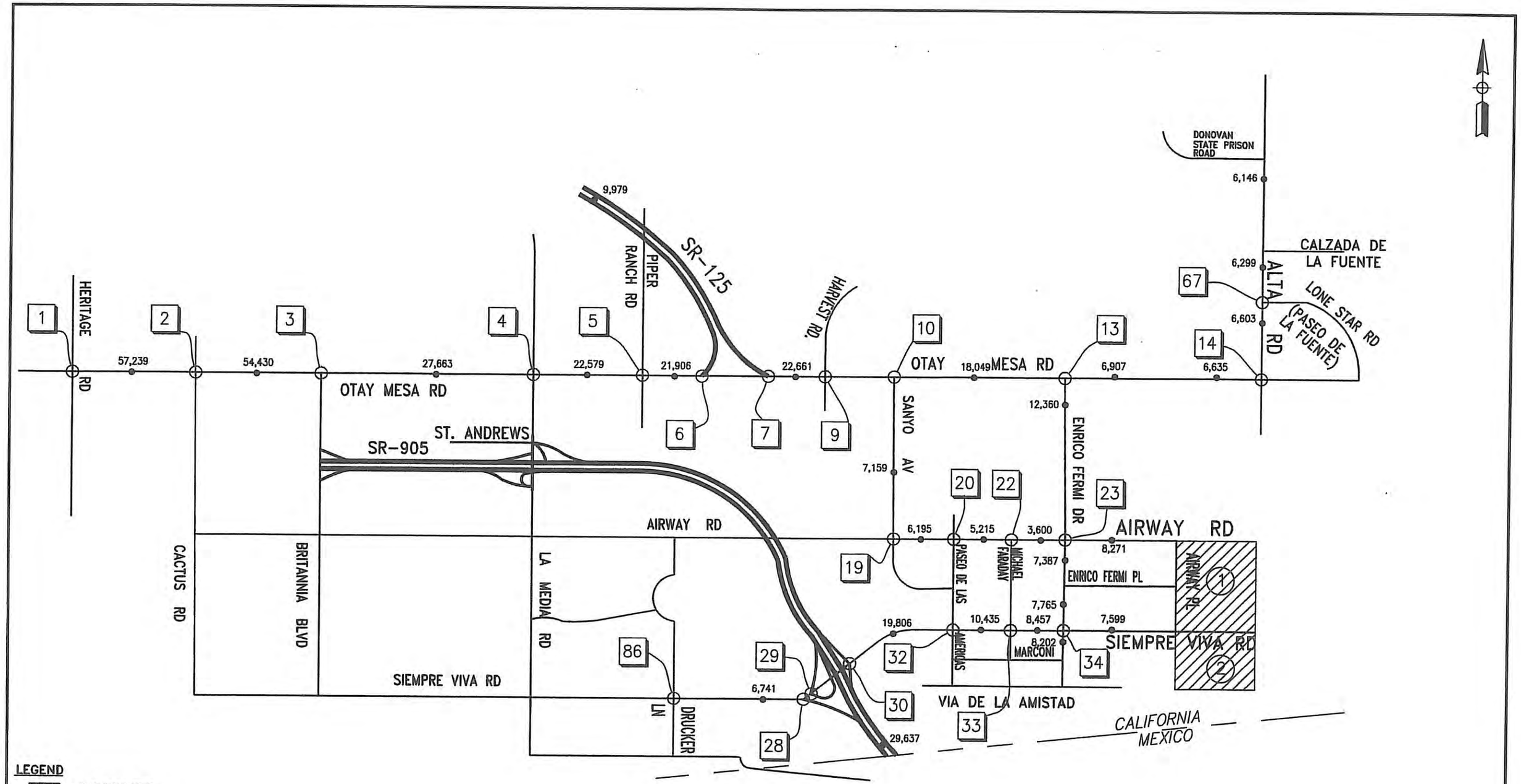
This scenario analyzes the traffic impact of Phases 1-2 of the proposed project under existing conditions. Figures 18 and 19 illustrate the existing plus Phases 1-2 project traffic volumes.

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.



LEGEND

- PROJECT SITE
- Z,ZZZ – AVERAGE DAILY TRAFFIC
- XX – INTERSECTION ID #, SEE FIGURE 19 FOR INTERSECTION PEAK HOUR TURNING VOLUMES
- (XX) – PHASE OF DEVELOPMENT

NOTE: INTERSECTION NUMBERS ARE NOT SEQUENTIAL

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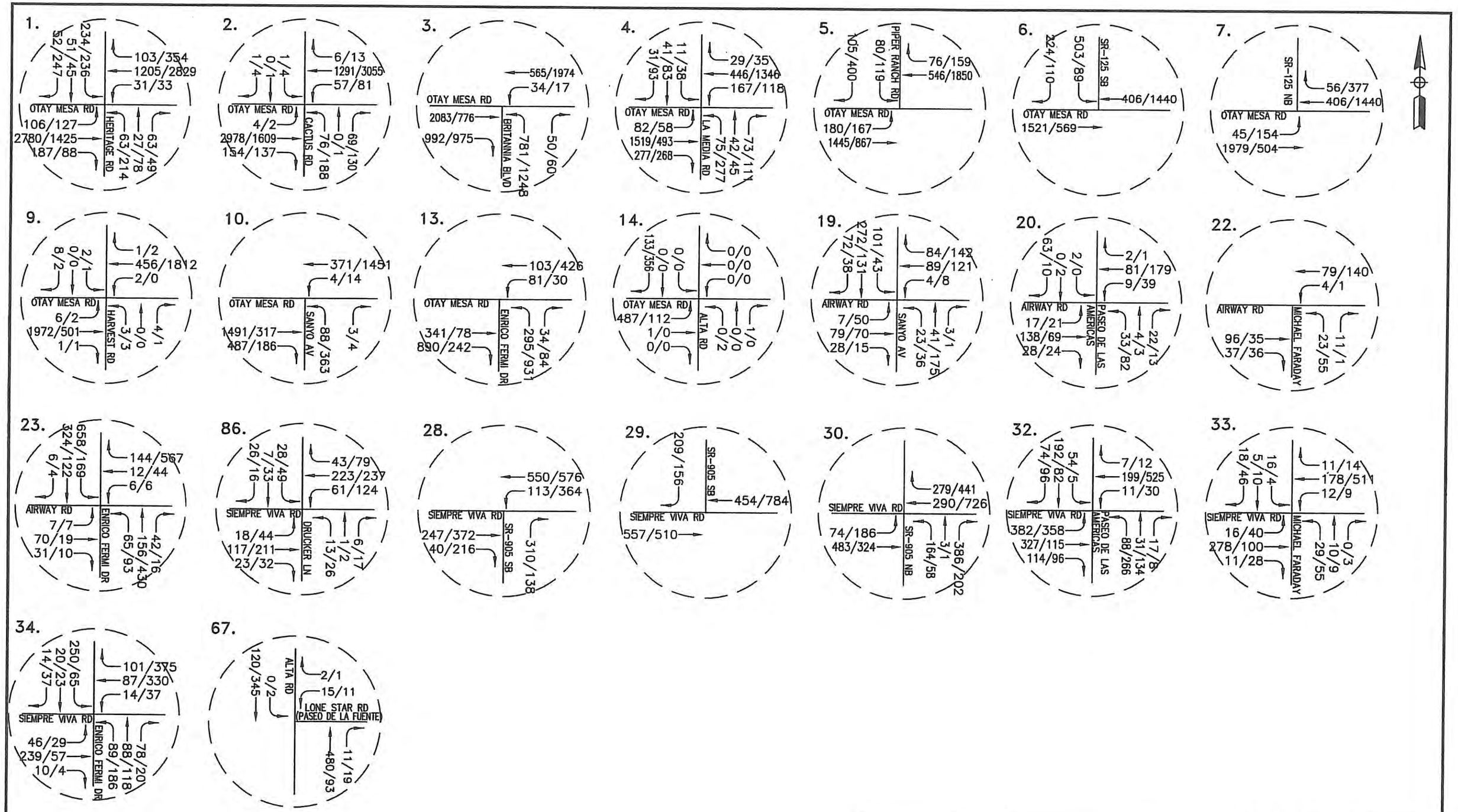
FIGURE 18

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