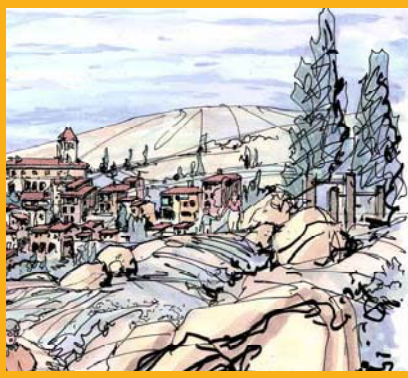
Traffic Impact Analysis

Otay Ranch Resort Village Project (Village 13)



REVISED REPORT
DECEMBER 2015

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~~March 27~~December 7, 2015

Executive Summary

The proposed Otay Ranch Resort Village Specific Plan ("Otay Ranch Resort Village / Village 13"), is located at the northeast corner of Lower Otay Lake in the unincorporated area of San Diego County with State Route 94 to the east, the Jamul Community to the north, Otay Lake to the south, the City of Chula Vista, as well as I-805 and SR-125 to the west.

The proposed specific plan includes approximately 525.0 acres designated for 1,881 single-family detached homes. Five single-family neighborhoods are planned with average densities ranging from 3.2 to 4.4 dwelling units per acre. A mixed use neighborhood of 14.1 acres is proposed to contain 57 attached homes up to 20,000 square feet of commercial uses.

Approximately 17.4 acres are identified for a resort hotel complex with a maximum of 200 guest rooms and up to 20,000 square feet of ancillary uses including meeting rooms, a conference center, offices, shops, and restaurants. The specific plan proposes reserving a 2.1-acre public safety site and a 10.0-acre elementary school site. Nine parks are planned on 28.6 acres, the largest of which is a 10.3-acre public neighborhood park site. The remaining parks range from 1.3 acres to 2.9 acres.

Proposed Mobility Element Classification Changes

The project proposes to reclassify Otay Lakes Road, between the City/County boundary (east of Wueste Road) and the planned Project Driveway #2 from a 4.1B Major Road with Raised Median (as classified in the currently adopted General Plan) to a 4.2A Boulevard with Raised Median.

With the proposed reclassifications, Otay Lakes Road, between ~~Wueste Road~~City/County boundary & Project Driveway #2/Intersection #43 is projected to operate at LOS D or better under the Future Year 2030 Plus Project (Buildout) conditions.

Trip Generation

The proposed project is anticipated to generate a total of 27,191 total daily vehicular trips. Based on the mix of project land uses it is assumed that the project will have an internal capture rate of 19%, meaning that 5,275 trips will have both an origin and destination within the project site, and not utilize external roadway facilities. As a result, the proposed project is only anticipated to add 21,916 new daily trips (under project buildout) to the external roadway network, including 1,663 AM peak hour trips and 2,134 PM peak hour trips.

Project Impacts and Recommended Mitigation Measures

Project related impacts were determined based on the significance criteria contained in the County of San Diego significance criteria, the SANTEC/ITE Guidelines and the City of Chula Vista Guideline for Traffic Impact Studies for each respective jurisdiction.

Direct Impacts

Existing Plus Project (Phase I) Conditions:

The proposed project would have a direct impact on one (1) roadway segment located in the City of Chula Vista and two (2) roadway segments located in the County of San Diego under the Existing Plus Project (Phase I) conditions. The following roadway improvements would be required to mitigate these impacts:

- Otay Lakes Road, between Wueste Road and the City of Chula Vista/County boundary (City of CV) – widen from 2 lanes to 4 lanes by the 728th EDU. This improvement is consistent with the City of Chula Vista's adopted Circulation Element. The Circulation Element identifies this segment as a 6-Lane Prime Arterial. If implemented, the identified mitigation measure would fully mitigate the Project's project specific (direct) impact. However, because the necessary improvement required would be constructed within the City of Chula Vista and, therefore, is outside of the County's jurisdiction and control, the County cannot assure that the City will permit implementation of such improvement. For purposes of CEQA and this TIA, the direct impact to Otay Lakes Road, between Wueste Road and the City of Chula Vista/County boundary is considered significant and unavoidable until such time as the City of Chula Vista concurs with the mitigation. In addition, the City of Chula Vista does not consider impacts to its facility under the Existing Plus Project conditions to be realistic impacts when used in connection with a long-range development project such as the proposed Resort Village project, which is not anticipated to reach full buildout until approximately 2025. The analysis of the project's potential impacts as measured against the existing conditions baseline that follows is presented for disclosure, information and comparison purposes only for facilities in Chula Vista. The identification of the project's significant impacts, with recommended mitigation, will be based on the future year analyses that take into account cumulative traffic growth, as well as the changing roadway network and land uses that accompany a long-range development project such as this. Therefore, the mitigation trigger identified above is provided for informational purpose only.

- Otay Lakes Road, between the City of Chula Vista/County boundary and Project Driveway #1/Intersection #42 (County) – widen from 2 lanes to the proposed 4-lane boulevard with raised median (County's 4.2A Public Road Classification) by the 896th EDU.

- Otay Lakes Road, between Project Driveway #1/Intersection #42 and Driveway #2/Intersection #43 (County) – widen from 2 lanes to the proposed 4-lane boulevard with raised median (County's 4.2A Public Road Classification) by the 896th EDU.

To be constructed by the project for Access & Frontage:

- Project Driveway #2/Intersection #43 @ Otay Lakes Road by the 1st EDU.

Existing Plus Project (Buildout) Conditions:

The proposed project would result in direct traffic related impact at one (1) intersection and two (2) roadway segments, under the Existing Plus Project (Buildout) conditions within the City of Chula Vista. The following improvements would be required to mitigate this impact:

- *Otay Lakes Road / Wueste Road* - Signalization by the 1,500th ~~residential unit~~EDU would be required at this intersection to mitigate project impacts. If implemented, the identified mitigation measure would fully mitigate the Project's project specific (direct~~) impact~~) impact. However, because the necessary improvement required would be constructed within the City of Chula Vista and, therefore, is outside of the County's jurisdiction and control, the County cannot assure that the City will permit implementation of such improvement. For purposes of CEQA and this TIA, the direct impact to intersection of Otay Lakes Road/Wesste Road is considered significant and unavoidable until such time as the City of Chula Vista concurs with the mitigation. In addition, the City of Chula Vista does not consider impacts to its facility under the Existing Plus Project conditions to be realistic impacts when used in connection with a long-range development project such as the proposed Resort Village project, which is not anticipated to reach full buildout until approximately 2025. The analysis of the project's potential impacts as measured against the existing conditions baseline that follows is presented for disclosure, information and comparison purposes only for facilities in Chula Vista. The identification of the project's significant impacts, with recommended mitigation, will be based on the future year analyses that take into account cumulative traffic growth, as well as the changing roadway network and land uses that accompany a long-range development project such as this. Therefore, the mitigation trigger identified above is provided for informational purpose only.

- Otay Lakes Road, between Lake Crest Drive and Wueste Road (City of CV) – widen from 2-lane to 4-lane by the 910th ~~residential unit~~EDU. This improvement is consistent with the City of Chula Vista's adopted Circulation Element. The Circulation Element identifies this segment as a 6-Lane Prime Arterial. If implemented, the identified mitigation measure would fully mitigate the Project's project specific (direct~~) impact~~) impact. However, because the necessary improvement required would be constructed within the City of Chula Vista and, therefore, is outside of the County's jurisdiction and control, the County cannot assure that the City will permit implementation of such improvement. For purposes of CEQA and this TIA, the direct impact to Otay Lakes Road, between Lake Crest Drive and Wueste Road is considered significant and unavoidable until such time as the City of Chula Vista concurs with the mitigation. In addition, the City of Chula Vista does not consider impacts to its facility under the Existing Plus Project conditions to be realistic impacts when used in connection with a long-range development project such as the proposed Resort Village project, which is not anticipated to reach full buildout until approximately 2025. The analysis of the project's potential impacts as measured against the existing conditions baseline that follows is presented for disclosure, information and comparison purposes only for facilities in Chula Vista. The identification of the project's significant impacts, with recommended mitigation, will be based on the future year analyses that take into account cumulative traffic growth, as well as the changing roadway network and land uses that accompany a long-range development project such as this.

Therefore, the mitigation trigger identified above is provided for informational purpose only.

- Otay Lakes Road, between Wueste Road and the City of Chula Vista/County boundary (City of CV) – widen from 2-lane to 4-lane by the 728th ~~residential unit~~EDU. This improvement is consistent with the City of Chula Vista's adopted Circulation Element. The Circulation Element identifies this segment as a 6-Lane Prime Arterial. If implemented, the identified mitigation measure would fully mitigate the Project's project specific (direct~~) impact~~) impact. However, because the necessary improvement required would be constructed within the City of Chula Vista and, therefore, is outside of the County's jurisdiction and control, the County cannot assure that the City will permit implementation of such improvement. For purposes of CEQA and this TIA, the direct impact to Otay Lakes Road, between Wueste Road and the City of Chula Vista/County boundary is considered significant and unavoidable until such time as the City of Chula Vista concurs with the mitigation. In addition, the City of Chula Vista does not consider impacts to its facility under the Existing Plus Project conditions to be realistic impacts when used in connection with a long-range development project such as the proposed Resort Village project, which is not anticipated to reach full buildout until approximately 2025. The analysis of the project's potential impacts as measured against the existing conditions baseline that follows is presented for disclosure, information and comparison purposes only for facilities in Chula Vista. The identification of the project's significant impacts, with recommended mitigation, will be based on the future year analyses that take into account cumulative traffic growth, as well as the changing roadway network and land uses that accompany a long-range development project such as this. Therefore, the mitigation trigger identified above is provided for informational purpose only.

To be constructed by the project for Access & Frontage:

- Project Driveway #1/Intersection #42 @ Otay Lakes Road by the 926th EDU;
- Project Driveway #3/Intersection #44 @ Otay Lakes Road by the 1,729th EDU; and
- Otay Lakes Road, between Project Driveway #2/Intersection #43 and Project Driveway #3/Intersection #44 – widen to the County Mobility Element classification of 2.1D by the 1,729th ~~residential unit~~EDU of the project.

Cumulative (Year 2025) Base Plus Project (Buildout) Conditions:

The proposed project would result in direct traffic related impact at one (1) intersection and two (2) roadway segments, under the Cumulative (Year 2025) conditions within the City of Chula Vista. The following mitigation measures are proposed to reduce the significant Project impacts identified under Cumulative Year 2025 conditions to a less-than-significant level:

~~. In this case, the mitigation measures under the Existing Plus Project (Phase I) scenario (widening of Otay Lakes Road, between Wueste Road and the City of Chula Vista/County Boundary to 4-lane by 728th residential unit), and mitigation measures under the Existing Plus Project (Buildout) scenario (widening of Otay Lakes Road, between Lake Crest Drive and Wueste Road to 4-lane by~~

~~910th residential unit & signalization of the intersection of Otay Lakes Road / Wueste Road by 1500th residential units) are substantively equivalent to the recommended mitigation measures under this scenario. Therefore, implementation of mitigation measures recommended under Existing Plus Project (Phase I) and Existing Plus Project (Buildout) would reduce the identified significant impacts such that it would not be necessary to also implement mitigation measures identified below.~~

- *Otay Lakes Road / Wueste Road* – Signalization by the 1,234th ~~500th residential unit~~EDU would be required at this intersection to mitigate project impacts. Note that a westbound left-turn lane, a westbound through lane, as well as an additional eastbound through lane, would have already been constructed by the ~~383rd~~384th ~~910th residential unit~~EDU as a part of the roadway mitigation. If implemented, the identified mitigation measure would fully mitigate the Project's project specific (direct~~) impact~~) impact. However, because the necessary improvement required would be constructed within the City of Chula Vista and, therefore, is outside of the County's jurisdiction and control, the County cannot assure that the City will permit implementation of such improvement. For purposes of CEQA and this TIA, the direct impact to Otay Lakes Road/Wueste Road is considered significant and unavoidable until such time as the City of Chula Vista concurs with the mitigation.

- Otay Lakes Road, between Lake Crest Drive and Wueste Road (City of CV) – widen from 2-lane to 4-lane by the ~~383rd~~384th ~~910th residential unit~~EDU. This improvement is consistent with the City of Chula Vista's adopted Circulation Element. The Circulation Element identifies this segment as a 6-Lane Prime Arterial. If implemented, the identified mitigation measure would fully mitigate the Project's project specific (direct~~) impact~~) impact. However, because the necessary improvement required would be constructed within the City of Chula Vista and, therefore, is outside of the County's jurisdiction and control, the County cannot assure that the City will permit implementation of such improvement. For purposes of CEQA and this TIA, the direct impact to Otay Lakes Road, between Lake Crest Drive and Wueste Road is considered significant and unavoidable until such time as the City of Chula Vista concurs with the mitigation.

- Otay Lakes Road, between Wueste Road and the City of Chula Vista/County boundary (City of CV) – widen from 2-lane to 4-lane by the ~~383rd~~384th ~~728th residential unit~~EDU. This improvement is consistent with the City of Chula Vista's adopted Circulation Element. The Circulation Element identifies this segment as a 6-Lane Prime Arterial. If implemented, the identified mitigation measure would fully mitigate the Project's project specific (direct) impact. However, because the necessary improvement required would be constructed within the City of Chula Vista and, therefore, is outside of the County's jurisdiction and control, the County cannot assure that the City will permit implementation of such improvement. For purposes of CEQA and this TIA, the direct impact to Otay Lakes Road, between Wueste Road and the City of Chula Vista/County boundary is considered significant and unavoidable until such time as the City of Chula Vista concurs with the mitigation.

Future Year 2030 Base Plus Project (Buildout) Conditions:

- No Direct Impacts Identified.

Cumulative Impacts

Existing Plus Project (Phase I) Conditions:

- No Cumulative Impacts Identified.

Existing Plus Project (Buildout) Conditions:

- No Cumulative Impacts Identified.

Cumulative (Year 2025) Base Plus Project (Buildout) Conditions:

The proposed project would result in a cumulative traffic related impact at one intersection (1) the intersection located in the County of San Diego:

- *Otay Lakes Road / SR-94* - Signalization would mitigate the cumulative impact at this intersection. This intersection is a Caltrans facility in which the County does not have jurisdiction. In addition, Caltrans does not have a plan or program in place where the project applicant could pay its fair-share towards the cost of such improvements. Therefore, mitigation is infeasible and the impacts would remain significant and unavoidable.

The proposed project would have a cumulative impact on two (2) roadway segments located in the County of San Diego under the Cumulative (Year 2025) conditions. The following mitigation measures are proposed to reduce the significant Project impacts identified under Cumulative Year 2025 conditions to a less-than-significant level. In this case, the mitigation measures proposed under the Existing Plus Project (Phase I) scenario (by 896th ~~residential unit~~EDU) are substantively equivalent to the recommended mitigation measures under this scenario. Therefore, implementation of mitigation measures recommended under Existing Plus Project (Phase I) would reduce the identified significant impacts such that it would not be necessary to also implement mitigation measures identified below.

- Otay Lakes Road, between Wueste Road and Project Driveway #1/Intersection #42 (County) – this roadway segment is included in the list of facilities included in the County's TIF Program and is classified as a Major Road (4.1B) in the County of San Diego General Plan Mobility Element. The project applicant proposes to change this roadway segment classification to a Boulevard (4.2A). Accordingly, the project applicant would be responsible for participating in an update to the TIF Program to reflect the change in classification. Subsequently, the project applicant would be responsible for complying with the updated TIF Program to mitigate for cumulative impacts.

- Otay Lakes Road, between Project Driveway #1/Intersection #42 and Driveway #2/Intersection #43 (County) – this roadway segment is included in the list of facilities included in the County's TIF Program and is classified as a Major Road (4.1B) in the County of San Diego General Plan Mobility Element. The project applicant proposes to change this roadway segment classification to a Boulevard (4.2A). Accordingly, the project applicant would be responsible for participating in an update to the TIF Program to reflect the change in classification. Subsequently, the project applicant would be responsible for complying with the updated TIF Program to mitigate for cumulative impacts.

As described above, the project includes mitigation to improve Otay Lakes Road in the County. This facility is identified by the TIF Program as a TIF eligible facility. As such, pursuant to the County TIF Program, the applicants would be entitled to credit against payment of the TIF, or for reimbursement through the TIF Program, for that work performed on Otay Lakes Road that is eligible for a TIF credit

Future Year 2030 Base Plus Project (Buildout) Conditions:

- No Cumulative Impacts Identified.

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1.0 Introduction

1.1 Purpose of the Report

The purpose of this Traffic Impact Analysis (TIA) is to identify and document potential traffic impacts related to the development of the Otay Ranch Resort Village project (the project), as well as to recommend mitigation measures for any identified intersection, roadway or freeway/highway deficiencies associated with the project or to which the project contributes.

1.2 Project Location and Description

The Applicants have applied for approval of the Otay Ranch Resort Village Specific Plan ("Otay Ranch Resort Village"), located northeast of Lower Otay Lake in south San Diego County. The proposed Specific Plan application includes amendments to the Otay Subregional Plan, Volume 2 ("Otay SRP"). The Otay SRP governs land uses and intensities of development permitted under the County General Plan for this Specific Plan Area (identified as Village 13 in the Otay SRP). An amendment to the Otay SRP is a County General Plan Amendment (GPA).

Physical Setting

The project site is located in the County of San Diego, in the Proctor Valley Parcel of the Otay SRP, approximately one-quarter mile east of the City of Chula Vista (see Regional Location Map, **Figure 1-1** and Project Study Area as displayed in **Figure 1-2**). Access is provided via Telegraph Canyon Road which transitions into Otay Lakes Road, and forms the southern boundary of the Project site.

The Otay Valley Parcel of Otay Ranch, the EastLake Vistas residential community, the EastLake Woods residential community, and the U.S. Olympic Training Center are to the west of the project site. Lower Otay Lake, a recreational reservoir and water supply owned by the City of San Diego, is located to the south. Upper Otay Lake and the Birch Family Estate are located to the northwest. A private ultra-light gliding and parachuting business operates as an interim use on the John Nichols Airfield on City of San Diego MSCP Cornerstone Preserve land located at the eastern end of the Lower Otay Lake. An inactive quarry operation is located further to the east.

The land uses proposed by the project are depicted in **Figure 1-3** and defined in the summary table on the following page. The proposed land uses consist of single-family neighborhoods, a mixed use residential and commercial use neighborhood, a resort hotel with associated ancillary facilities, an elementary school site, a site for public safety facilities, open space, preserve land, and park and recreational uses.

The proposed specific plan includes approximately 525.0 acres designated for 1,881 single-family detached homes. Five single-family neighborhoods are planned with average densities ranging from 3.2 to 4.4 dwelling units per acre.

A mixed use neighborhood of 14.1 acres is proposed to contain 57 attached homes. The mixed use area includes up to 20,000 square feet of commercial uses. An alternative to eliminating the commercial uses (20,000 SF) and converting the multi-family ~~residential unit~~EDUs (57 DU) to single family units is also reviewed and included in **Appendix A**.

Approximately 17.4 acres are identified for a resort hotel complex with a maximum of 200 guest rooms and up to 20,000 square feet of ancillary uses including meeting rooms, a conference center, offices, shops, and restaurants. The specific plan proposes reserving a 2.1-acre public safety site and a 10.0-acre elementary school site. Nine parks are planned on 28.6 acres, the largest of which is a 10.3-acre public neighborhood park site. The remaining parks range from 1.3 acres to 2.9 acres.

The project planning area also includes about 144 acres of open space and approximately 1,089 acres of preserve land. Open space generally consists of large manufactured slopes outside of neighborhoods and brush management areas. Preserve land is usually undisturbed lands or restored habitats set aside for dedication to the Otay Ranch Preserve Owner Manager in satisfaction of Otay Ranch Resource Management Plan conveyance requirements.

Internal circulation comprises about 39.0 acres of the planning area.

Proposed Circulation Element Changes

In order to minimize the potential environmental impacts to the City of San Diego MSCP Cornerstone Lands along Otay Lakes Road, the project is proposing to reclassify Otay Lakes Road, between the City/County boundary and the planned Project Driveway #2 from 4.1B (classified in the currently adopted General Plan as a Major Road with Raised Median) to 4.2A (Boulevard with Raised Median).

As a result, Otay Lakes Road, between Wueste Road and Project Driveway #2, was analyzed based upon the proposed classifications (4.2A) instead of the currently adopted General Plan classification (4.1B).

RESORT VILLAGE LAND USE SUMMARY

Land Use	Acres	Units
Single Family Residential[1]		
R-1	248.7	796
R-2	55.9	211
R-3	90.2	401
R-4	74.4	263
R-5	55.8	210
Single Family Total	525.0	1,881
Mixed Use		
MU[2]	14.1	57
Mixed Use Total	14.1	57
Residential Total	539.1	1,938
Parks		
P-1	2.9	
P-2	1.7	
P-3	2.3	
P-4	2.2	
P-5	10.3	
P-6	2.4	
P-7	2.9	
P-8	1.3	
P-9	2.6	
Parks Total	28.6	
Resort		
Resort[3]	17.4	
Resort Total	17.4	
Public Uses		
Public Safety	2.1	
Elementary School	10.0	
Public Uses Total	12.1	
Open Space & Preserve		
Open Space	143.9	
Preserve	1,089.0	
Open Space & Preserve Total	1,232.9	
Circulation		
Circulation	39.0	
Circulation Total	39.0	
TOTAL	**1,869.0**	**1,938**

1 Single Family Residential includes residential streets and internal slopes.
2 Multiple Use includes up to 20,000 square feet of commercial use.
3 Resort includes up to 200 rooms and up to 20,000 sq. ft. of ancillary uses.
4 Open Space includes manufactured slopes outside of neighborhoods and associated residential manufactured slopes.

1.3 Study Scenarios

A total of six (6) scenarios were analyzed in this study, including:

1. **Existing Conditions** – utilized to establish the existing baseline traffic operations within the study area.

2. **Existing Plus Project (Phase I) Conditions** – represents existing traffic conditions with the addition of traffic from Phase I of the proposed project.

3. **Existing Plus Project (Buildout) Conditions** – represents existing traffic conditions with the addition of traffic from buildout of the proposed project.

4. **Cumulative Traffic Conditions** – represents cumulative traffic conditions, including existing baseline traffic, traffic from anticipated land development projects, and traffic from buildout of the proposed project.

5. **Future Year 2030 Base Conditions** – represents projected long-range non-project cumulative baseline traffic conditions for the Year 2030 against which traffic generated by the project can be compared.

6. **Future Year 2030 Base Plus Project (Buildout) Conditions** – represents 2030 baseline traffic conditions with the addition of traffic generated by the buildout of the proposed project.

1.4 Report Organization

Following this Introduction chapter, the report is organized into the following sections:

2.0 Analysis Methodology – This chapter describes the methodologies and standards utilized to analyze roadway, intersection, and freeway traffic conditions.

3.0 Existing Conditions – This chapter describes the existing traffic network within the study area and provides analysis results for existing traffic conditions.

4.0 Project Description – This chapter describes the proposed project including project traffic generation, trip distribution patterns, and roadway assignments. The project trip distribution was developed via a computer generated "Select Zone" analysis utilizing the Series 11 SANDAG Year 2030 Transportation Model.

5.0 Existing Plus Project (Phase I) Conditions – This chapter describes the existing traffic network with the addition of Phase I of the proposed project. Mitigation measures, if necessary, for project-related impacts are also identified.

6.0 Existing Plus Project (Buildout) Conditions – This chapter describes the existing traffic network with the addition of full development of the proposed project. Mitigation measures, if necessary, for project-related impacts are also identified.

7.0 Cumulative Traffic Conditions – This chapter describes cumulative land development projects anticipated to generate additional traffic within the study area. Analysis results are provided for the existing plus cumulative projects plus proposed project condition, along with recommended mitigation measures (if necessary).

8.0 Future Year 2030 Traffic Conditions – This chapter describes projected long-range future traffic conditions. Traffic analysis results are presented for the Year 2030 both with and without the buildout of the proposed project. Mitigation measures for project-related impacts are identified as appropriate.

9.0 Findings and Recommendations – This chapter summarizes overall study findings and identifies recommended project-related mitigation measures.

10.0 Parking Analysis – This chapter discusses the proposed project's potential parking impacts, which are determined relative to compliance with applicable County zoning requirements.

11.0 Plan-to-Plan Analysis – This chapter provides a "plan-to-plan" analysis assessing potential impacts to the County's General Plan Circulation Element roadways within the project study area due to the project's proposed changes in planned development land uses, densities, and/or intensities.

12.0 Site Access and On-Site Circulation – This chapter presents an assessment of transportation facilities providing access to the proposed project. It also recommends a functional classification for all roadways internal to the project.

2.0 Analysis Methodology

The traffic analyses prepared for this study were performed in accordance with the *County of San Diego Traffic Impact Guidelines*, the enhanced California Environmental Quality Act (CEQA) project review process, and the *SANTEC/ITE Guidelines for Traffic Impact Studies* in San Diego.

The SANTEC/ITE guidelines require delineation of a project study area based on the following criteria:

- All local roadway segments, including all State surface routes, intersections, and mainline freeway locations where the proposed project will add 50 or more peak-hour trips in either direction to the existing roadway traffic.
- All freeway entrance and exit ramps where the proposed project will add a significant number of peak-hour trips that cause traffic queues to exceed ramp storage capacities.

In addition to the SANTEC/ITE requirements, the project study area also includes all County mobility element roadways and intersections where the project is projected to add 25 or more peak hour trips.

2.1 Level of Service Definition

The concept of Level of Service (LOS) is defined as a qualitative measure describing operational conditions within a traffic stream, as well as the motorist's and/or passengers' perception of operations. A Level of Service definition generally describes these conditions in terms of such factors as speed, travel time, freedom to maneuver, comfort, convenience, and safety. **Table 2.1** describes generalized definitions of urban transportation systems at LOS A through F.

TABLE 2.1
LEVEL OF SERVICE DEFINITIONS

LOS	Congestion/Delay	Traffic Flow Quality
A	None	Low volumes, high speeds; Speed not restricted by other vehicles; All signal cycles clear with no vehicles waiting through more than one signal.
B	None	Operating speeds beginning to be affected by other traffic; Less than 10% of signal cycles have vehicles waiting through more than one signal cycle.
C	None to minimal	Operating speed and maneuverability closely controlled by other traffic; Between 10% and 30% of signal cycles have vehicles waiting through more than one signal cycle.
D	Minimal to substantial	Tolerable operating speeds; Between 30% and 70% of signal cycles have vehicles waiting through more than one signal cycle.
E	Significant	Capacity; Maximum traffic volume an intersection can accommodate; 70% to 100% of signal cycles have vehicles waiting through more than one signal cycle.
F	Considerable	Long queues of traffic; unstable flows; travel speeds can drop to zero.

Source: Highway Capacity Manual 2000

2.2 Peak Hour Intersection Level of Service Standards and Thresholds

This section presents the methodologies used to perform peak hour intersection capacity analysis, including both signalized and unsignalized intersections.

2.2.1 Signalized Intersection Analysis

The signalized intersection analysis utilized in this study conforms to the operational analysis methodology outlined in Chapter 16 of the *HCM 2000*. The *HCM 2000* methodology defines intersection Level of Service as a function of intersection control delay in terms of seconds per vehicle (sec/veh).

The *HCM 2000* methodology sets 1,900 passenger-cars per hour per lane (pcphpl) as the ideal saturation flow rate at signalized intersections based upon the minimum headway that can be sustained between departing vehicles at a signalized intersection. The service saturation flow rate, which reflects the saturation flow rate specific to the study facility, is determined by adjusting the ideal saturation flow rate for lane width, on-street parking, bus stops, pedestrian volume, traffic composition (or percentage of heavy vehicles), and shared lane movements (e.g. through and right-turn movements sharing the same lane). The Level of Service criteria used for this technique are described in **Table 2.2**. The computerized analysis of intersection operations was performed utilizing the *Traffix 8.0 R1* traffic analysis software (Dowling Associates, November 2008).

2.2.2 Unsignalized Intersection Analysis

Unsignalized intersections, including two-way and all-way stop controlled intersections were analyzed using the Chapter 17 methodology of the *HCM 2000*. The Level of Service for a two-way stop controlled (TWSC) intersection is determined by the computed or measured control delay and is defined for each minor movement. **Table 2.3** summarizes the Level of Service criteria for unsignalized intersections.

Both the County of San Diego and the City of Chula Vista consider LOS D during the AM and PM peak hours to be the minimum standard for intersection Level of Service.

TABLE 2.2
SIGNALIZED INTERSECTION LEVEL OF SERVICE
HIGHWAY CAPACITY MANUAL OPERATIONAL ANALYSIS METHOD

Average Stopped Delay Per Vehicle (seconds)	Level of Service (LOS) Characteristics
<10.0	*LOS A* describes operations with very low delay. This occurs when progression is extremely favorable, and most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.
10.1 – 20.0	*LOS B* describes operations with generally good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.
20.1 – 35.0	*LOS C* describes operations with higher delays, which may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.
35.1 – 55.0	*LOS D* describes operations with high delay, resulting from some combination of unfavorable progression, long cycle lengths, or high volumes. The influence of congestion becomes more noticeable, and individual cycle failures are noticeable.
55.1 – 80.0	*LOS E* is considered the limit of acceptable delay. Individual cycle failures are frequent occurrences.
>80.0	*LOS F* describes a condition of excessively high delay, considered unacceptable to most drivers. This condition often occurs when arrival flow rates exceed the LOS D capacity of the intersection. Poor progression and long cycle lengths may also be major contributing causes to such delay.

Source: 2000 Highway Capacity Manual, TRB Special Report 209

TABLE 2.3
LEVEL OF SERVICE CRITERIA FOR
STOP CONTROLLED UNSIGNALIZED INTERSECTIONS

Average Control Delay (sec/veh)	Level of Service (LOS)
≤10	A
>10 and ≤15	B
>15 and ≤25	C
>25 and ≤35	D
>35 and ≤50	E
>50	F

Source: 2000 Highway Capacity Manual, TRB Special Report 209

2.3 Roadway Segment Level of Service Standards and Thresholds

Roadway segment Level of Service standards and thresholds provide the basis for analysis of arterial roadway segment performance. The analysis of roadway segment Level of Service is based on the functional classification of the roadway, the maximum capacity, roadway geometrics, and existing or forecast Average Daily Traffic (ADT) volumes. **Tables 2.4** and **2.5**

present the roadway segment capacity and Level of Service standards utilized to analyze roadway segments within the County of San Diego and the City of Chula Vista, respectively.

TABLE 2.4
COUNTY OF SAN DIEGO
ROADWAY SEGMENT DAILY CAPACITY AND LEVEL OF SERVICE STANDARDS

No.	Travel Lanes	Design Speed	Road Classification	Level of Service (in ADT)				
				A	B	C	D	E
6.1	6	65 mph	Expressway	36,000	54,000	70,000	**86,000**	108,000
6.2	6	65 mph	Prime Arterial	22,200	37,000	44,600	**50,000**	57,000
4.1A	4	55 mph	Major Road with Raised Median	14,800	24,700	29,600	**33,400**	37,000
4.1B			Major Road with Intermittent Turn Lanes	13,700	22,800	27,400	**30,800**	34,200
4.2A	4	40 mph	Boulevard with Raised Median	18,000	21,000	24,000	**27,000**	30,000
4.2B			Boulevard with Intermittent Turn Lane	16,800	19,600	22,500	**25,000**	28,000
2.1A	2	45 mph	Community Collector with Raised Median	10,000	11,700	13,400	**15,000**	19,000
2.1B			Community Collector w/ Continuous Turn Lane	3,000	6,000	9,500	**13,500**	19,000
2.1C			Community Collector w/ Intermittent Turn Lane	3,000	6,000	9,500	**13,500**	19,000
2.1D			Community Collector with Improvement Options	3,000	6,000	9,500	**13,500**	19,000
2.1E	2	45 mph	Community Collector	1,900	4,100	7,100	**10,900**	16,200
2.2A	2	40 mph	Light Collector with Raised Median	3,000	6,000	9,500	**13,500**	19,000
2.2B			Light Collector with Continuous Turn Lane	3,000	6,000	9,500	**13,500**	19,000
2.2C			Light Collector with Intermittent Turn Lanes	3,000	6,000	9,500	**13,500**	19,000
2.2D			Light Collector with Improvement Options	3,000	6,000	9,500	**13,500**	19,000
2.2E			Light Collector	1,900	4,100	7,100	**10,900**	16,200
2.2F			Light Collector with Reduced Shoulder	5,800	6,800	7,800	**8,700**	9,700
2.3A	2	35 mph	Minor Collector with Raised Median	3,000	6,000	7,000	**8,000**	9,000
2.3B			Minor Collector with Intermittent Turn Lane	3,000	6,000	7,000	**8,000**	9,000
2.3C			Minor Collector	1,900	4,100	6,000	**7,000**	8,000

Source: County of San Diego Public Road Standards; March 2012

Note: Bold numbers indicate the ADT thresholds for acceptable LOS.

TABLE 2.5
CITY OF CHULA VISTA
ROADWAY SEGMENT DAILY CAPACITY AND LEVEL OF SERVICE STANDARDS

Circulation Element Roadway Classification	Level of Service				
	A	B	C	D	E
Expressway (7 or 8-lane)	52,500	61,300	**70,000**	78,800	87,500
Gateway Street (6-lane)	40,800	47,600	54,400	**61,200**	68,000
Prime Arterial (6-lane)	37,500	43,800	**50,000**	56,300	62,500
Major Street (6-lane)	30,000	35,000	**40,000**	45,000	50,000
Major Street (4-lane)	22,500	26,300	**30,000**	33,800	37,500
Town Center Arterial (6-lane)	37,500	43,800	**50,000**	56,300	62,500
Town Center Arterial (4-lane)	22,500	26,300	**30,000**	33,800	37,500
Class I Collector (4-lane)	16,500	19,300	**22,000**	24,800	27,500
Class II Collector (3-lane)	9,000	10,500	**12,000**	13,500	15,000
Class III Collector (2-lane)	5,600	6,600	**7,500**	8,400	9,400

Source: City of Chula Vista

Note: Bold numbers indicate the ADT thresholds for acceptable LOS.

These standards are generally used as long-range planning guidelines to determine the functional classification of roadways. The actual capacity of a roadway facility varies according to its physical attributes. Typically, the performance and Level of Service of a roadway segment are heavily influenced by the ability of the arterial intersections to accommodate peak hour volumes.

For the purposes of this traffic analysis, LOS D is considered acceptable for Mobility Element roadway segments within the County of San Diego. LOS C is considered acceptable for Circulation Element roadway segments within the City of Chula Vista. Per the *Otay SRP* (Page 104), LOS D is permitted within the Otay Ranch Villages.

2.4 Freeway/State Highway Level of Service Standards and Thresholds

Freeway Level of Service and performance analysis are based upon procedures developed by Caltrans District 11. The procedure involves estimating a peak hour volume to capacity (V/C) ratio. Peak hour volumes are estimated from the application of design hour ("K"), directional ("D") and truck ("T") factors to Average Daily Traffic (ADT) volumes. The base capacities utilized were 2,400 pc/h/ln for mainline and 1,200 pc/h/ln for auxiliary lane, respectively.

The resulting V/C is then compared to acceptable ranges of V/C values corresponding to the various Levels of Service for each facility classification, as shown in **Table 2.6**. The corresponding level of service represents an approximation of existing or anticipated future freeway operating conditions in the peak direction of travel during the peak hour.

TABLE 2.6
FREEWAY AND STATE HIGHWAY SEGMENT LEVEL OF SERVICE DEFINITIONS

LOS	V/C	Congestion/Delay	Traffic Description
"A"	<0.41	None	Free flow.
"B"	0.42-0.62	None	Free to stable flow, light to moderate volumes.
"C"	0.63-0.79	None to minimal	Stable flow, moderate volumes, freedom to maneuver noticeably restricted.
"D"	0.80-0.92	Minimal to substantial	Approaches unstable flow, heavy volumes, very limited freedom to maneuver.
"E"	0.93-1.00	Significant	Extremely unstable flow, maneuverability and psychological comfort extremely poor.
"F"	>1.00	Considerable	Forced or breakdown flow. Delay measured in average travel speed (MPH). Signalized segments experience delays >60.0 seconds/vehicle.

Source: SANTEC/ITE Guidelines for TIS in the San Diego Region

LOS D or better is used in this study as the threshold for acceptable freeway operations based upon Caltrans and the SANDAG Regional Growth Management Strategy (RGMS) requirements.

2.5 Two-Lane State Highway Level of Service Standards and Thresholds

The two-lane state highway SR-94 was analyzed utilizing both the County of San Diego and Caltrans (or *HCM 2000*) methodologies.

Per County requirements, all facilities where the proposed project would add 25 peak hour trips were included in the study area. Thus, SR-94 from Lyons Valley Road to south of Otay Lakes Road was included in the analysis.

Table 2.7 displays the two-lane state highway ADT thresholds for LOS E and LOS F when signalized intersection spacing is over one mile. For facilities where signalized intersections are less than one mile apart, the Level of Service is determined to be that of the intersections along the subject highway.

TABLE 2.7
COUNTY OF SAN DIEGO
TWO-LANE HIGHWAY LEVEL OF SERVICE THRESHOLDS
WITH SIGNALIZED INTERSECTION SPACING OVER ONE MILE

LOS	LOS Criteria
LOS E	> 16,200 ADT
LOS F	> 22,900 ADT

Source: County of San Diego

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

Per Caltrans requirements, two-lane highway Level of Service analysis is based on peak hour travel speed as shown in **Table 2.8**. Caltrans and the SANTEC/ITE guidelines require that all facilities where the proposed project would add 50 peak hour trips in either direction be included in the study area. Thus, SR-94 from Melody Road to south of Otay Lakes Road was included in the analysis using the methodology shown in Table 2.8.

TABLE 2.8
CALTRANS DISTRICT 11
TWO-LANE STATE HIGHWAY LEVEL OF SERVICE DEFINITIONS

LOS	Average Travel Speed (mi/h)
"A"	> 55
"B"	> 50 – 55
"C"	> 45 – 50
"D"	> 40 – 45
"E"	≤ 40
"F"	LOS F applies whenever the flow rate exceeds the segment capacity.

Source: Highway Capacity Manual 2000

2.6 Ramp Intersection Capacity Analysis

Consistent with Caltrans requirements, all signalized intersections at freeway ramps were analyzed using Intersecting Lane Volume (ILV) procedures as described in Topic 406 of the Caltrans *Highway Design Manual* (HDM). The *HDM 2000* methodology is based upon an assessment of each intersection as an isolated unit, without consideration of effects from adjacent intersections. For this reason, the ILV analysis is utilized as an additional validation of signalized ramp intersection operations derived from the *HCM 2000* methodology. **Table 2.9** provides values of ILV/hr associated with various traffic flow thresholds.

TABLE 2.9
TRAFFIC FLOW CONDITIONS AT RAMP INTERSECTIONS
AT VARIOUS LEVELS OF OPERATION

ILV/hr	Description
<1200: (Under Capacity)	Stable flow with slight, but acceptable delay. Occasional signal loading may develop. Free midblock operations.
1200-1500: (At Capacity)	Unstable flow with considerable delays possible. Some vehicles occasionally wait two or more cycles to pass through the intersection. Continuous backup occurs on some approaches.
>1500: (Over Capacity)	Stop-and-go operation with severe delay and heavy congestion(1). Traffic volume is limited by maximum discharges rates of each phase. Continuous backup in varying degrees occurs on all approaches. Where downstream capacity is restrictive, mainline congestion can impede orderly discharge through the intersection.

Source: Caltrans Highway Design Manual, Topic 406

Note:
(1) The amount of congestion depends on how much the ILV/hr value exceeds 1500. Observed flow rates will normally not exceed 1500ILV/hr, and the excess will be delayed in a queue.

Based on the Caltrans Guide for the Preparation of Traffic Impact Studies (December 2002), Intersection Lane Volume (ILV) is not a Measure of Effectiveness or a significant impact criteria, therefore, the ILV analysis included in this report is for informational purposes only.

2.7 Ramp Metering Analysis

Ramp metering analysis was conducted based upon the *SANTEC/ITE Guidelines for Traffic Impact Studies* in the San Diego region to calculate delays and queues at the study area freeway on-ramps. Within the project study area, the I-805 northbound on-ramp at Telegraph Canyon Road is the only ramp with an activated ramp meter. The I-805 southbound on-ramp at Telegraph Canyon Road is not metered, all SR-125 on-ramps within the project study area are also not metered, however, tollbooth exist at these on-ramps to collect toll fees from those vehicles without the FasTrak pass. Therefore the I-805 southbound on-ramp at Telegraph Canyon Roads, as well as all SR-125 on-ramp within the project study area, were not included as a part of the ramp metering analysis.

Based upon data provided by Caltrans District 11, the I-805 northbound on-ramp at Telegraph Canyon Road ramp meter is only activated between 5:30 AM and 9:30 AM, thus ramp metering analysis was only conducted during the AM peak hour under the various study scenarios.

2.8 Determination of Significant Impacts

This section outlines the thresholds for determination of significant project-related impacts to roadways and intersections in the County of San Diego and the City of Chula Vista, as well as for freeway and state highway facilities within Caltrans' jurisdiction.

County of San Diego

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 road segment:

- The additional or redistributed ADT generated by the proposed project will significantly increase congestion at a signalized intersection currently operating at LOS E or LOS F as identified in **Table 2.10**, or will cause a signalized intersection to operate at LOS E or LOS F.

TABLE 2.10
MEASURES OF SIGNIFICANT PROJECT IMPACTS TO CONGESTION AT INTERSECTIONS: ALLOWABLE INCREASES AT CONGESTED INTERSECTIONS

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

Source: County of San Diego

Notes:
1. A critical movement is one that is experiencing excessive queues.
2. By adding proposed project trips to all other trips from a list of projects, this same table is used to determine if total cumulative impacts are significant. If cumulative impacts are found to be significant, each project that contributes any trips must mitigate a share of the cumulative impacts.
3. The County may also determine impacts have occurred on roads even when a project's traffic or cumulative impacts do not trigger an unacceptable Level of Service, when such traffic uses a significant amount of remaining road capacity.

Unsignalized 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 road segment:

- The additional or redistributed ADT generated by the proposed project will add 20 or more peak hour trips to a critical movement of an unsignalized intersection, and cause the unsignalized intersection to operate below LOS D (see Table 2.10), or
- The additional or redistributed ADT generated by the proposed project will add 20 or more peak hour trips to a critical movement of an unsignalized intersection currently operating at LOS E (see Table 2.10), or
- The additional or redistributed ADT generated by the proposed project will add 5 or more peak hour trips to a critical movement of an unsignalized intersection, and cause the unsignalized intersection to operate at LOS F (see Table 2.10), or
- The additional or redistributed ADT generated by the proposed project will add 5 or more peak hour trips to a critical movement of an unsignalized intersection currently operating at LOS F (see Table 2.10), or
- Based upon an evaluation of existing accident rates, the signal priority list, intersection geometrics, proximity of adjacent driveways, and sight distance or other factors, it is found that a project's generation rate ***less*** than those specified above would significantly impact the operations of the intersection.

Roadway Segments

Traffic volume increases from public or private projects that result in one or more of the following criteria will have a significant traffic volume or Level of Service traffic impact on a road segment, unless specific facts show that there are other circumstances that mitigate or avoid such impacts:

- 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 as identified in **Table 2.11**, or will cause a Circulation Element Road or State Highway to operate at LOS E or LOS F as a result of the proposed project, or

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

TABLE 2.11
MEASURES OF SIGNIFICANT PROJECT IMPACTS TO CONGESTION ON ROAD SEGMENTS: ALLOWABLE INCREASES ON CONGESTED ROAD SEGMENTS

Level of Service	Two-Lane Road	Four-Lane Road	Six-Lane Road
LOS E	200 ADT	400 ADT	600 ADT
LOS F	100 ADT	200 ADT	300 ADT

Source: County of San Diego

Notes:
1. By adding proposed project trips to all other trips from a list of projects, this same table must be used to determine if total cumulative impacts are significant. If cumulative impacts are found to be significant, each project that contributes any trips must mitigate a share of the cumulative impacts.
2. The County may also determine impacts have occurred on roads even when a project's traffic or cumulative impacts do not trigger an unacceptable Level of Service, when such traffic uses a significant amount of remaining road capacity.

Two-Lane Highways with Signalized Intersection Spacing Over One Mile

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 two-lane highway facility with signalized intersection spacing over one mile:

- The additional or redistributed ADT generated by the proposed project will significantly increase congestion on a two-lane highway segment currently operating at LOS E or LOS F, as identified in **Table 2.12**, or will cause a two-lane highway segment to operate at LOS E or LOS F as a result of the proposed project.

TABLE 2.12
MEASURES OF SIGNIFICANT PROJECT IMPACTS TO CONGESTION: ALLOWABLE INCREASES ON TWO-LANE HIGHWAYS WITH SIGNALIZED INTERSECTION SPACING OVER ONE MILE

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

Source: County of San Diego

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

Two-Lane Highways with Signalized Intersection Spacing Under One Mile

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 two-lane highway facility with signalized intersection spacing under one mile:

- The additional or redistributed ADT generated by the proposed project will significantly increase congestion on a two-lane highway segment currently operating at LOS E or LOS F, as identified in **Table 2.13**, or will cause a two-lane highway segment to operate at LOS E or LOS F as a result of the proposed project.

TABLE 2.13
MEASURES OF SIGNIFICANT PROJECT IMPACTS TO CONGESTION:
ALLOWABLE INCREASES ON TWO-LANE HIGHWAYS
WITH SIGNALIZED INTERSECTION SPACING UNDER ONE MILE

LOS	LOS Criteria
LOS E	Intersection delay of 2 seconds
LOS F	Intersection delay of 1 second, or 5 peak hour trips on a critical movement

Source: County of San Diego

Notes:
1. A critical movement is one that is experiencing excessive queues.
2. By adding proposed project trips to all other trips from a list of projects, this same table is used to determine if total cumulative impacts are significant. If cumulative impacts are found to be significant, each project that contributes any trips must mitigate a share of the cumulative impacts.
3. The County may also determine impacts have occurred on roads even when a project's traffic or cumulative impacts do not trigger an unacceptable Level of Service, when such traffic uses a significant amount of remaining road capacity.

SANTEC/ITE Guidelines

Facilities that belong to other jurisdictions or Caltrans, should comply with the traffic study requirements identified in the SANTEC/ITE Guidelines, as summarized in **Table 2.14**.

TABLE 2.14
MEASURE OF SIGNIFICANT PROJECT TRAFFIC IMPACTS

Level of Service (LOS) with Project	Allowable Change Due to Impact					
	Freeways		Roadway Segments		Intersections	Ramp Metering
E & F (or ramp meter delays above 15 min.)	V/C	Speed (mph)	V/C	Speed (mph)	Delay (sec)	Delay (min.)
	0.01	1	0.02	1	2	2

Source: SANTEC/ITE Guidelines for TIS in the San Diego Region

City of Chula Vista

Traffic impacts are defined as either *project-specific impacts* or *cumulative impacts. Project-specific impacts* are those impacts for which the addition of project trips results in an identifiable degradation in Level of Service on freeway segments, roadway segments, or at intersections, triggering the need for specific project-related improvement strategies. *Cumulative impacts* are those in which the project trips incrementally contribute to a poor Level of Service in conjunction with other projects and existing traffic.

The following discussion outlines City of Chula Vista criteria for determining whether a project results in either project-specific or cumulative impacts on freeway segments, roadway segments, or intersections. The City of Chula Vista maintains different significance standards for short-term and long-term conditions.

Short-Term (Study Horizon Year 0 To 4)

Intersections

Project specific impacts would occur under short-term conditions at intersections if both of the following conditions were found:

- The intersection is projected to operate at LOS E or LOS F, and
- The project trips comprise 5% or more of entering volume.

Cumulative impacts would occur in the City of Chula Vista under short-term conditions only if the intersection is projected to operate at LOS E or LOS F, and the second condition listed above is not met.

Roadway Segments

If the roadway segment volume to capacity (v/c) ratio indicates LOS C or better, there would be no project specific or cumulative impact in the short-term. If the roadway segment volume to capacity ratio indicates LOS D, E or F, and the GMOC method is utilized, the following significance criteria apply:

- Project specific impacts would occur to roadway segments under short-term conditions in the City of Chula Vista if all of the following conditions were found:
  - The roadway segment is projected to operate at LOS D for more than 2 hours or LOS E/F for 1 hour,
  - The project trips comprise 5% or more of the roadway segment volume, and
  - The project adds more than 800 ADT to the roadway segment.

Cumulative impacts would occur to a roadway segment under short-term conditions only if the roadway segment is projected to operate at LOS D for more than 2 hours or LOS E/F for 1 hour.

Long-Term (Study Horizon Year 5 and Later)

Intersections

Project specific impacts would occur at intersections under long-term conditions if both of the following conditions were found:

- The intersection is projected to operate at LOS E or LOS F, and
- The project trips comprise 5% or more of entering volume.

Cumulative impacts would occur at an intersections in the City of Chula Vista under long-term conditions only if the intersection are projected to operate at LOS E or F.

Roadway Segments

Project specific impacts would occur to roadway segments under long-term conditions in the City of Chula Vista if all of the following conditions were found:

- The roadway is projected to operate at LOS D, LOS E, or LOS F,
- The project trips comprise 5% or more of total segment volume, and
- The project adds more than 800 ADT to the roadway segment.

Cumulative impacts would occur to a roadway segment under long-term conditions if they are projected to operate at LOS D, E or F. However, in cases where roadway segments are projected to operate at LOS D or E under long-term conditions and all intersections along this segment are projected to operate at LOS D or better, the roadway segment impact would *not* be significant since intersection analysis is more indicative of actual roadway system operations. If a roadway segment is projected to operate at LOS F under long-term conditions, the project impact would be significant regardless of intersection LOS.

3.0 Existing Conditions

This section describes key intersections, roadway and freeway segments, as well as existing peak hour intersection traffic volumes, and daily roadway and freeway traffic volumes. Level of Service (LOS) analysis results for all study area facilities under Existing conditions are presented.

3.1 Existing Roadway Network

Several regionally and locally significant roadways and freeways traverse the study area. Each of the key transportation facilities and associated study intersections within the study area are discussed below.

Study Intersections

The SANDAG Series 11 Transportation Model was utilized to perform a Select Zone Analysis which identified the number of project-related peak hour trips distributed across the transportation network. All intersections and roadways where the proposed project added 50 or more peak hour trips in either direction to the existing traffic were included for analysis. In addition, the study area also included intersections and roadways where the proposed project added 25 peak hour trips in the County of San Diego.

A total of forty-four (44) key study area intersections, including eight (8) in the County, three (3) in the City of San Diego, and 33 in the City of Chula Vista, were analyzed in this study, as shown below:

1) East H Street / Otay Lakes Road
2) Proctor Valley Road / Hunte Parkway
3) Telegraph Canyon Road / I-805 SB Ramps
4) Telegraph Canyon Road / I-805 NB Ramps
5) Telegraph Canyon Road / Oleander Avenue
6) Telegraph Canyon Road / Paseo Del Rey
7) Telegraph Canyon Road / Medical Center Drive
8) Telegraph Canyon Road / Paseo Ladera
9) Telegraph Canyon Road / Paseo Ranchero/Heritage Road
10) Telegraph Canyon Road / Otay Lakes Road/La Media Road
11) Otay Lakes Road / Rutgers Avenue
12) Otay Lakes Road / SR-125 SB Ramps
13) Otay Lakes Road / SR-125 NB Ramps
14) Otay Lakes Road / Eastlake Parkway
15) Otay Lakes Road / Lane Avenue
16) Otay Lakes Road / Fenton Street
17) Otay Lakes Road / Hunte Parkway
18) Otay Lakes Road / Woods Drive
19) Otay Lakes Road / Lake Crest Drive
20) Otay Lakes Road / Wueste Drive
21) Otay Lakes Road / SR-94 (County)

22) Olympic Parkway / East Palomar Street
23) Olympic Parkway / SR-125 SB Ramps
24) Olympic Parkway / SR-125 NB Ramps
25) Olympic Parkway / Eastlake Parkway
26) Olympic Parkway / Hunte Parkway
27) Olympic Parkway / Olympic Vista Road
28) Olympic Parkway / Wueste Drive
29) Lake Crest Drive / Wueste Drive
30) Main Street / SR-125 SB Ramps*
31) Main Street / SR-125 NB Ramps*
32) Main Street / Eastlake Parkway*
33) Otay Valley Road / SR-125 SB Ramps*
34) Otay Valley Road / SR-125 NB Ramps*
35) Otay Mesa Road / La Media Road (City of SD)
36) Otay Mesa Road / SR-125 SB Ramps (City of SD)
37) Otay Mesa Road / SR-125 NB Ramps (City of SD)
38) Otay Mesa Road / Ellis Road* (County)
39) SR-94 / Proctor Valley Road/Jefferson Road (County)
40) SR-94 / Maxfield Road (County)
41) SR-94 / Melody Road (County)
42) Project Driveway #1 @ Otay Lakes Road (County)*
43) Project Driveway #2 @ Otay Lakes Road (County)*
44) Project Driveway #3 @ Otay Lakes Road (County)*

Nine (9) of the above study area intersections are not currently constructed, but were included in future year assessments and "Plus Project" analyses. These intersections are denoted with an asterisk (*) in the above list. **Figure 3-1A** displays study area intersection lane geometrics under Existing conditions within the study area.

East-West Roadway Facilities

City of Chula Vista

Proctor Valley Road – Proctor Valley Road is a 6-lane roadway with a raised median in the City of Chula Vista. It is classified as a 6-lane Prime Arterial between SR-125 and Hunte Parkway, and a 4-lane Major Road between Hunte Parkway and the City's eastern border with the County of San Diego. A portion of Proctor Valley Road is currently an unpaved road in the County.

Telegraph Canyon Road – Telegraph Canyon Road is a seven-lane roadway between I-805 and Oleander Avenue, and a six-lane roadway with a raised median between Oleander Avenue and Otay Lakes Road. It is currently classified in Chula Vista General Plan Circulation Element as a seven-lane Expressway between I-805 and Oleander Avenue, and a 6-lane Prime Arterial between Oleander Avenue and Otay Lakes Road.

Otay Lakes Road – Otay Lakes Road is a 6-lane roadway with a raised median between Telegraph Canyon Road and the eastern boundary of Chula Vista, just east of Wueste Road. It is currently classified as a 6-lane Prime, with the exception of the segment between I-805 and Eastlake Parkway, which is classified as a 7-lane Expressway.

Olympic Parkway – Olympic Parkway, between La Media Road and Hunte Parkway is a six-lane roadway with a raised median with the exception of the segment between SR-125 NB Ramp and Eastlake Parkway which is an eight-lane roadway with a raised median. Between Hunte Parkway and Wueste Drive, Olympic Parkway narrows to a four-lane roadway with a raised median. Olympic Parkway is classified as a 6-lane Prime Arterial between I-805 and the SR-125, an eight-lane Expressway between SR-125 and Eastlake Parkway, a 6-lane Prime Arterial between Eastlake Parkway and Hunte Parkway, and a four-lane Major Street between Hunte Parkway and Wueste Road.

County of San Diego

Maxfield Road – Maxfield Road is a 2-lane roadway in the Community of Jamul. It is classified as a 2-lane Light Collector (2.2E) in the County of San Diego's currently adopted General Plan Circulation Element Update.

Melody Road – Melody Road is a 2-lane roadway in the Community of Jamul. It is classified as a 2-lane Light Collector (2.2E) in the County of San Diego's currently adopted General Plan Circulation Element Update.

Honey Springs Road – Honey Springs Road is a 2-lane roadway. It is classified as a 2-lane Light Collector (2.2E) in the County of San Diego's currently adopted General Plan Circulation Element Update.

Otay Lakes Road – Otay Lakes Road is a two-lane roadway within the County of San Diego. It is classified as a four-lane Major Road with Intermittent Turn Lane (4.1B) between the County/City boundary and the second Project driveway However, the Project proposes to reclassify this segment from a 4.1B to a 4.2A Boulevard with Raised Median. With the proposed reclassifications, Otay Lakes Road, between Wueste Road & Project Driveway #2 is projected to operate at LOS D or better under the Future Year 2030 Plus Project (Buildout) conditions. Therefore, this facility is being analyzed as a 4.2A this point forward. Otay Lakes Road, east of the second Project driveway is a 2-lane Community Collector with Improvement Options (2.1D) in the County General Plan Mobility Element.

North-South Roadway Facilities

City of Chula Vista

Otay Lakes Road – The north/south portion of Otay Lakes Road runs from Bonita Road to Telegraph Canyon Road where it becomes La Media Road. Otay Lakes Road is a four-lane roadway with a raised median between East H Street and Telegraph Canyon Road. A section of this

segment is being constructed to 6-lanes. This roadway is currently classified as a 6-lane Prime Arterial in Chula Vista General Plan Circulation Element.

Lane Avenue – Lane Avenue is currently a 4-lane roadway between Proctor Valley Road and Otay Lakes Road. It is classified as a 4-lane Collector in the City of Chula Vista General Plan Circulation Element.

Hunte Parkway – Hunte Parkway is currently a 4-lane roadway with a raised median between Proctor Valley Road and Olympic Parkway. It is a 6-lane roadway with a raised median between Olympic Parkway and its current southern terminus. Hunte Parkway is classified in the City of Chula Vista General Plan Circulation Element as a 4-lane Major between Proctor Valley Road and Olympic Parkway, and a 6-lane Prime south of Olympic Parkway.

County of San Diego

Jefferson Road – Jefferson Road is a 2-lane roadway between Lyons Valley Road and SR-94 in the County of San Diego. It is classified as a 2-lane Light Collector with Raised Median (2.2A) in the County of San Diego's currently adopted General Plan Circulation Element Update.

Proctor Valley Road – Proctor Valley Road is a 2-lane roadway and runs from I-805 in the City of Chula Vista to SR-94 in the Community of Jamul in the County of San Diego to the east. Within the County of San Diego, Proctor Valley Road is classified as 2-lane Light Collector (2.2E) in the County of San Diego's currently adopted General Plan Circulation Element Update.

Figure 3-1B displays existing geometrics for roadway facilities within the project study area.

Freeway and State Highway Facilities

Three (3) Caltrans freeway and state highway facilities traverse the study area, as follows:

I-805 – I-805 ranges from 8-lanes to 10-lanes between Home Avenue and SR-905 within the study area. Construction of two new High Occupancy Vehicle (HOV) lanes on I-805, between Home Avenue and East Palomar Street has been recently completed.

SR-125 – SR-125 is a 4-lane state highway between East H Street and SR-905. It will operate as a toll road through the Year 2035. However, SANDAG has recently purchased this facility and could potentially convert this facility to a freeway sooner than the Year 2035.

SR-94 – Within the project study area, SR-94 is a 2-lane State Highway between Lyons Valley Road and the Community of Tecate. No improvements are planned by Caltrans to the portions of SR-94 located within the study area.

3.2 Existing Intersection and Roadway Volumes

Figure 3-2A shows existing AM / PM peak hour traffic volumes for the key study area intersections. **Figure 3-2B** displays Average Daily Traffic (ADT) volumes for study area roadway and freeway segments. The roadway segment and study area intersection counts were conducted in April 2014 and are provided in **Appendix B**. Freeway segment counts were obtained from Caltrans.

3.3 Existing Level of Service Analysis

Levels of Service analyses under Existing conditions were conducted using the methodologies described in Chapter 2.0. Intersection, roadway segment, freeway segment, and freeway ramp intersection Level of Service results are discussed separately below.

Intersection Analysis

Table 3.1 displays intersection Level of Service and average vehicle delay results for the key study area intersections under Existing conditions. Levels of Service calculation worksheets for Existing conditions are provided in **Appendix C**.

TABLE 3.1
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
EXISTING CONDITIONS

Intersection	AM Peak Hour		PM Peak Hour	
	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS
1. East H Street / Otay Lakes Road	34.0	C	28.5	C
2. Proctor Valley Road / Hunte Parkway	13.5	B	12.0	B
3. Telegraph Canyon Road / I-805 SB Ramps	15.7	B	40.9	D
4. Telegraph Canyon Road / I-805 NB Ramps	27.8	C	16.7	B
5. Telegraph Canyon Road / Oleander Avenue	15.5	B	16.9	B
6. Telegraph Canyon Road / Paseo Del Rey	11.9	B	27.4	C
7. Telegraph Canyon Road / Medical Center Drive	11.8	B	13.1	B
8. Telegraph Canyon Road / Paseo Ladera	33.7	C	25.3	C
9. Telegraph Canyon Road / Paseo Ranchero/Heritage Road	32.2	C	23.7	C
10. Telegraph Canyon Road / Otay Lakes Road/La Media Road	27.1	C	26.4	C
11. Otay Lakes Road / Rutgers Avenue	11.8	B	10.2	B
12. Otay Lakes Road / SR-125 SB Ramps	5.9	A	8.8	A
13. Otay Lakes Road / SR-125 NB Ramps	2.9	A	3.5	A
14. Otay Lakes Road / Eastlake Parkway	26.7	C	27.9	C
15. Otay Lakes Road / Lane Avenue	12.4	B	14.6	B
16. Otay Lakes Road / Fenton Street	8.3	A	15.7	B

TABLE 3.1
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
EXISTING CONDITIONS

Intersection	AM Peak Hour		PM Peak Hour	
	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS
17. Otay Lakes Road / Hunte Parkway	23.7	C	23.4	C
18. Otay Lakes Road / Woods Drive	14.3	B	13.4	B
19. Otay Lakes Road / Lake Crest Drive	13.4	B	13.9	B
20. Otay Lakes Road / Wueste Road*	9.2	A	9.1	A
21. Otay Lakes Road / SR-94 (County)*	10.8	B	12.7	B
22. Olympic Parkway / East Palomar Street	26.3	C	28.2	C
23. Olympic Parkway / SR-125 SB Ramps	4.6	A	7.7	A
24. Olympic Parkway / SR-125 NB Ramps	1.7	A	3.6	A
25. Olympic Parkway / Eastlake Parkway	22.0	C	22.1	C
26. Olympic Parkway / Hunte Parkway	19.6	B	20.0	C
27. Olympic Parkway / Olympic Vista Road	18.7	B	19.0	B
28. Olympic Parkway / Wueste Road	4.8	A	9.6	A
29. Lake Crest Drive / Wueste Road	12.3	B	7.7	A
30. Main Street / SR-125 SB Ramps	Does Not Exist			
31. Main Street / SR-125 NB Ramps	Does Not Exist			
32. Main Street / Eastlake Parkway	Does Not Exist			
33. Otay Valley Road / SR-125 SB Ramps	Does Not Exist			
34. Otay Valley Road / SR-125 NB Ramps	Does Not Exist			
35. Otay Mesa Road / La Media Road (SD)	44.3	D	37.8	D
36. Otay Mesa Road / SR-125 SB Ramps (SD)	9.7	A	8.5	A
37. Otay Mesa Road / SR-125 NB Ramps (SD)	2.3	A	6.3	A
38. Otay Mesa Road / Ellis Road (County)	Does Not Exist			
39. SR-94 / Melody Road (County)	13.3	B	17.7	C
40. SR-94 / Maxfield Road (County)*	12.9	B	20.4	C
41. SR-94 / Jefferson Road (County)	12.9	B	12.2	B
42. Otay Lakes Road @ Project Driveway #1 (County)	Does Not Exist			
43. Otay Lakes Road @ Project Driveway #2[RA] (County)	Does Not Exist			
44. Otay Lakes Road @ Project Driveway #3[RA] (County)	Does Not Exist			

Source: Chen Ryan Associates; March 2015

Notes:
* For one or two-way stop controlled intersections, the delay shown is the worst delay experienced by any of the approaches.
RA = Roundabout. Rodel software is utilized for the peak hour operational analysis.

As show in Table 3.1, all of the study area intersections are currently operating at acceptable LOS D or better.

Roadway Segment Analysis

Table 3.2A displays the Level of Service analysis results for the key study area roadway segments located within the City of Chula Vista under Existing conditions.

TABLE 3.2A
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING CONDITIONS
(City of Chula Vista)

Roadway	Segment	Cross-Section	Average Daily Traffic (ADT)	LOS Threshold (LOS C)	Level of Service (LOS)
Proctor Valley Rd	Lane Ave to Hunte Pkwy	6-Ln w/ RM	14,155	50,000	A
Telegraph Canyon Rd	I-805 SB Ramps to I-805 NB Ramps	7-Ln w/ RM	55,247	70,000	B
	I-805 NB Ramps to Oleander Ave		59,615		B
	Oleander Ave to Medical Center Dr	6-Ln w/ RM	55,776	50,000	**D**
	Medical Center Dr to Paseo Ladera		47,486		C
	Paseo Ladera to Paseo Ranchero/ Heritage Rd	6-Ln w/ RM	44,404	50,000	C
	Paseo Ranchero/Heritage Rd to La Media Rd		35,495		A
Otay Lakes Rd	East H St to Telegraph Canyon Rd/Otay Lakes Rd	4-Ln w/ RM	28,912	30,000	C
	La Media Rd to Rutgers Ave	6-Ln w/ RM	42,142	50,000	B
	Rutgers Ave to SR-125 SB Ramps		41,931		B
	SR-125 SB Ramps to SR-125 NB Ramps		46,406		C
	SR-125 NB Ramps to Eastlake Pkwy	7-Ln w/ RM	40,291	70,000	A
	Eastlake Pkwy to Lane Ave	6-Ln w/ RM	26,054	50,000	A
	Lane Ave to Fenton St		18,832		A
	Fenton St to Hunte Pkwy		18,627		A
	Hunte Pkwy to Woods Dr		9,672		A
	Woods Dr to Lake Crest Dr		7,546		A
	Lake Crest Dr to Wueste Rd	2-Ln	2,654	7,500	A
	Wueste Rd to City of CV/County Boundary		2,927	7,500	A
Olympic Pkwy	La Media Rd to E Palomar St	6-Ln w/ RM	33,412	50,000	A
	E Palomar St to SR-125 SB Ramps		35,139		A
	SR-125 SB Ramps to SR-125 NB Ramps		38,154		B
	SR-125 NB Ramps to Eastlake Pkwy	8-Ln w/ RM	43,506	70,000	A
	Eastlake Pkwy to Hunte Pkwy	6-Ln w/ RM	16,289	50,000	A
	Hunte Pkwy to Olympic Vista Rd	4-Ln w/ RM	9,936	30,000	A

TABLE 3.2A
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING CONDITIONS
(City of Chula Vista)

Roadway	Segment	Cross-Section	Average Daily Traffic (ADT)	LOS Threshold (LOS C)	Level of Service (LOS)
Olympic Pkwy	East of Olympic Vista Rd	4-Ln w/ RM	4,075	30,000	A
Lane Ave	Proctor Valley Rd to Otay Lakes Rd	4-Ln w/TWLTL	10,804	22,000	A
Hunte Pkwy	Proctor Valley Rd to Otay Lakes Rd	4-Ln w/ RM	6,269	30,000	A
	Otay Lakes Rd to Clubhouse Dr		10,897		A
	Clubhouse Dr to Olympic Pkwy		8,154		A
	Olympic Pkwy to Eastlake Pkwy	6-Ln w/ RM	2,015	50,000	A

Source: Chen Ryan Associates; March 2015

Notes:
Bold letter indicates an unacceptable LOS D, E or F.
RM = Raised Median.
TWLTL = Two-Way Left-Turn Lane.

As shown in Table 3.2A, Telegraph Canyon Rd, between Oleander Ave and Medical Center Dr is currently operating at an unacceptable LOS D under Existing conditions:

Table 3.2B displays the Level of Service analysis results for the key study area roadway segments located within the County of San Diego under Existing conditions. As shown in the table, all study roadways in the County of San Diego are currently operating at acceptable LOS A or B.

TABLE 3.2B
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING CONDITIONS
(County of San Diego)

Roadway	Segment	Cross-Section	Average Daily Traffic (ADT)	LOS Threshold (LOS D)	Level of Service (LOS)
Otay Lakes Rd	City of CV/County Boundary to SR-94	2-Ln	2,927	10,900	B
Jefferson Rd	Lyons Valley Rd to SR-94	2-Ln	3,100	10,900	B
Proctor Valley Rd	SR-94 to Maxfield Rd	2-Ln	2,900	10,900	B
Maxfield Rd	Proctor Valley Rd to SR-94	2-Ln	400	10,900	A
Melody Rd	Proctor Valley Rd to SR-94	2-Ln	400	10,900	A
Honey Springs Rd	East of SR-94	2-Ln	1,600	10,900	A

Source: Chen Ryan Associates; March 2015

Note that the analysis of Honey Springs Road, Melody Road, Maxfield Road, Jefferson Road, and Proctor Valley Road is not included in later sections of the report as the proposed project would not contribute 25 peak hour trips to these facilities. In addition, based on SANDAG traffic forecasts and the currently adopted County General Plan, these facilities are not anticipated to operate at an unacceptable LOS in the future year 2030.

Freeway/State Highway Segment Analysis

Table 3.3 displays freeway Level of Service analysis results for I-805 and SR-125 under Existing conditions. The freeway/state highway segment Level of Service analysis was performed utilizing the methodology presented in Chapter 2.0.

TABLE 3.3
FREEWAY/STATE HIGHWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING CONDITIONS

Freeway / State Highway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	Peak Hour Factor (PHF)	% of Heavy Vehicle	Volume (pc/h/ln)	V/C	LOS
I-805	Bonita Road to East H Street	206,000	7.1%	14,605	0.52	5M*	0.95	7.0%	1,656	0.690	C
	East H Street to Telegraph Canyon Road	191,000	7.1%	13,542	0.52	5M*	0.95	7.0%	1,536	0.640	C
	Telegraph Canyon Road to Olympic Parkway	151,000	7.1%	10,706	0.52	4M+1 Aux*	0.95	7.0%	1,351	0.563	B
	Olympic Parkway to Main Street	141,000	7.1%	9,997	0.52	4M+1 Aux*	0.95	7.0%	1,264	0.527	B
SR-125	SR-54 to Mt. Miguel Road	17,500	7.0%	1,225	0.58	2M	0.95	10.3%	398	0.166	A
	Mt Miguel Road to Proctor Valley Road	16,300	7.0%	1,141	0.58	2M	0.95	10.3%	365	0.152	A
	Proctor Valley Road to Otay Lakes Road	12,600	7.0%	882	0.58	2M	0.95	10.3%	288	0.120	A
	Otay Lakes Road to Olympic Parkway	4,700	7.0%	329	0.58	2M	0.95	10.3%	111	0.046	A
	Olympic Parkway to Birch Road	4,300	7.0%	301	0.58	2M	0.95	10.3%	100	0.042	A
	Birch Road to Main Street	4,600	7.0%	322	0.58	2M	0.95	10.3%	100	0.042	A
	Main Street to Otay Valley Road	4,600	7.0%	322	0.58	2M	0.95	10.3%	100	0.042	A
	Otay Valley Road to Lone Star Road	4,600	7.0%	322	0.58	2M	0.95	10.3%	100	0.042	A
	Lone Star Road to Otay Mesa Road	4,600	7.0%	322	0.58	2M	0.95	10.3%	100	0.042	A

TABLE 3.3
FREEWAY/STATE HIGHWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING CONDITIONS

Freeway / State Highway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	Peak Hour Factor (PHF)	% of Heavy Vehicle	Volume (pc/h/ln)	V/C	LOS
SR-125	Otay Mesa Road to SR-905	Does Not Exist									

Source: Chen Ryan Associates; March 2015

Notes:
*2 new HOV lanes have been constructed recently. However, freeway ADT information is not available for these HOV lanes. The existing conditions analysis is based on pre HOV freeway geometrics and traffic volumes. This should represent the worst case scenario.
M = Mainline.
Aux = Auxiliary Lane.

As shown in Table 3.3, all study area freeway segments along I-805 and SR-125 currently operate at acceptable LOS D or better under Existing conditions.

Two-Lane Highway Segment Analysis

Tables 3.4A and 3.4B display two-lane highway Level of Service analysis results for SR-94 under Existing conditions. This analysis was performed using the County of San Diego and Caltrans (same as *HCM 2000*) methodologies as described in Chapter 2.0. The two-lane highway HCM analysis worksheets are included in **Appendix D**.

TABLE 3.4A
2-LANE HIGHWAY SEGMENT LEVEL OF SERVICE RESULTS
COUNTY OF SAN DIEGO LOS CRITERIA
EXISTING CONDITIONS

Highway	Segment	LOS Threshold (LOS D)	ADT	LOS
SR-94	Lyons Valley Road to Jefferson Road	16,200	10,776	D or better
	Jefferson Road to Maxfield Road		9,049	D or better
	Maxfield Road to Melody Road		8,024	D or better
	Melody Road to Otay Lakes Road		6,945	D or better
	South of Otay Lakes Road		6,964	D or better

Source: Chen Ryan Associates; March 2015

As shown above, SR-94, from Lyons Valley Road to south of Otay Lakes Road, is currently operating at acceptable LOS D or better based on County of San Diego LOS criteria.

TABLE 3.4B
2-LANE HIGHWAY SEGMENT LEVEL OF SERVICE RESULTS
CALTRANS AND HCM METHODOLOGY
EXISTING CONDITIONS

Highway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	%HV	Volume (pc/h/ln)	Speed (mph)	LOS
SR-94	Melody Road to Otay Lakes Road	6,945	8.6%	595	0.67	1	0.92	5.0%	456	49.0	C
	South of Otay Lakes Road	6,964	9.2%	644	0.67	1	0.96	5.0%	473	49.7	C

Source: Chen Ryan Associates; March 2015

As shown above, SR-94, from Melody Road to south of Otay Lakes Road, is currently operating at acceptable LOS C based on Caltrans/HCM methodology. Note that as a two-lane state highway SR-94, north of Melody Road, was not analyzed using the Caltrans/HCM methodology as the proposed project would not add 50 or more peak hour trips in either direction of SR-94 per SANTEC/ITE Guidelines.

Ramp Intersection Capacity Analysis

Consistent with Caltrans requirements, the signalized freeway ramp intersections along I-805 at Telegraph Canyon Road and along SR-125 at various interchanges were analyzed under Existing conditions using the ILV procedures as described in Chapter 2.0. ILV analysis results are displayed in **Table 3.5** and analysis worksheets for the Existing conditions are provided in **Appendix E**.

TABLE 3.5
RAMP INTERSECTION CAPACITY ANALYSIS
EXISTING CONDITIONS

Ramp Intersection	Peak Hour	ILV / Hour	Description
I-805 SB Ramps / Telegraph Canyon Road	AM	1,381	*1200-1500: (At Capacity)*
	PM	1,681	*>1500: (Over Capacity)*
I-805 NB Ramps / Telegraph Canyon Road	AM	1,383	*1200-1500: (At Capacity)*
	PM	1,193	*<1200: (Under Capacity)*
SR-125 SB Ramps / Otay Lakes Road	AM	893	*<1200: (Under Capacity)*
	PM	1,191	*<1200: (Under Capacity)*
SR-125 NB Ramps / Otay Lakes Road	AM	842	*<1200: (Under Capacity)*
	PM	1,121	*<1200: (Under Capacity)*
SR-125 SB Ramps / Olympic Parkway	AM	728	*<1200: (Under Capacity)*
	PM	1,015	*<1200: (Under Capacity)*

TABLE 3.5
RAMP INTERSECTION CAPACITY ANALYSIS
EXISTING CONDITIONS

Ramp Intersection	Peak Hour	ILV / Hour	Description
SR-125 NB Ramps / Olympic Parkway	AM	652	*<1200: (Under Capacity)*
	PM	974	*<1200: (Under Capacity)*
SR-125 SB Ramps / Main Street	AM	Does Not Exist	
	PM		
SR-125 NB Ramps / Main Street	AM	Does Not Exist	
	PM		
SR-125 SB Ramps / Otay Valley Road	AM	Does Not Exist	
	PM		
SR-125 SB Ramps / Otay Valley Road	AM	Does Not Exist	
	PM		
SR-125 SB Ramps / Otay Mesa Road	AM	563	*<1200: (Under Capacity)*
	PM	315	*<1200: (Under Capacity)*
SR-125 SB Ramps / Otay Mesa Road	AM	325	*<1200: (Under Capacity)*
	PM	623	*<1200: (Under Capacity)*

Source: Chen Ryan Associates; March 2015

As shown in the table, both I-805 ramp intersections along Telegraph Canyon Road operate at "At Capacity" and/or "Under Capacity", with the exception of the I-805 SB Ramps / Telegraph Canyon Road intersection which currently operates at "Over Capacity" during the PM peak hour. All of the existing SR-125 ramp intersections within the study area currently operate at "Under Capacity".

Ramp Metering Analysis

Table 3.6 displays the ramp metering analysis conducted at the I-805 NB On-Ramp at Telegraph Canyon Road under Existing conditions. The I-805 NB On-Ramp at Telegraph Canyon Road currently has three (3) lanes including one High Occupancy Vehicle (HOV) lane. Based upon field observation, approximately 20% of the total NB On-Ramp traffic utilizes the HOV lane and approximately 80% of the total arrival traffic (demand) utilizes the two non-HOV lanes.

TABLE 3.6
RAMP METERING ANALYSIS
EXISTING CONDITIONS

Location	Peak Hour	Demand[1] (veh/hr)	Meter Rate[2] (veh/hr)	Excess Demand[3] (veh/hr)	Delay[4] (min)	Queue[5] (ft)
I-805 NB On-Ramp @ Telegraph Canyon Road	AM	1,880	1,824	56	1.8	800

Source: Chen Ryan Associates; March 2015

Notes:
1. Demand is the peak hour demand expected to use the on-ramp.
2. Meter Rate is the peak hour capacity expected to be processed through the ramp meter. This value was obtained from Caltrans.
3. Excess Demand = (Demand) – (Meter Rate) or zero, whichever is greater.
4. Delay = (Excess Demand / Meter Rate) X 60 min/hr.
5. Queue (Per Ramp Lane) = (Excess Demand) X 29 ft/veh/# of non-HOV lanes.

As shown in Table 3.6, the AM peak hour demand at the NB On-Ramp is greater than the ramp's capacity, resulting in traffic queues of 800 feet per lane. The I-805 NB On-Ramp storage length is approximately 650 feet per lane, thus during the morning peak hour, the vehicle demand would exceed the available storage length resulting in queuing along Telegraph Canyon Road. However, an estimated 1.8-minute of delay (less than 15 minutes) is considered acceptable, per SANTEC/ITE Guidelines.

4.0 Project Traffic

This section describes the proposed Otay Ranch Resort Village (V13) project, including proposed project land uses and estimated trip generation, trip distribution, and trip assignment.

4.1 Project Description

The project is located in the County of San Diego, along the eastern portions of Otay Lakes Road, just north of the Lower Otay Reservoir and east of SR-125. Traveling west from the proposed project, Otay Lakes Road provides access to the community of Chula Vista and SR-125. Traveling east from the proposed project, Otay Lakes Road provides access to SR-94 and eastern County communities such as Jamul, Tecate, Pine Valley, Campo, and Boulevard.

At buildout, the project will consist of 1,881 single-family dwelling units, 57 multi-family dwelling units, approximately 28.6 acres of park facilities, a 2.1 acres public safety facility, a 10.0-acre elementary school site, up to 40,000 square feet of commercial uses, and a 200-room resort.

4.1~~2~~.1 Project Phasing

For purposes of evaluating traffic impacts, the project will be analyzed in two phases where Phase I will consist of constructing the equivalent of 925 single family dwelling units or 925 EDU in the western development area. Phase I of the project will also include several small neighborhood parks as well as a temporary fire station. The neighborhood parks would generate minimal traffic and serve on-site residents only, hence will not create any external traffic. The interim fire station with up to 4-staff could be located anywhere within the project site and also generate minimal traffic. The overall EDU for Phase I would not exceed 925 as studied under the Existing + Project (Phase I) scenario. The second phase of the project includes "buildout" or full development of the proposed project land uses, including the remaining 956 single family and 57 multi-family units, the Resort and commercial uses, and the school, public safety, and park uses. Site access is proposed via three driveways, each accessing Otay Lakes Road. Driveways will be constructed as required to serve Phase I access requirements.

4.2 Project Trip Generation, Distribution, and Assignment

4.2.1 Project Trip Generation

Trip generation rates for the project were developed utilizing SANDAG's *Guide to Vehicular Traffic Generation Rates for the San Diego Region* (SANDAG, April 2002). **Table 4.1** displays daily, as well as AM and PM peak hour, project trip generation.

TABLE 4.1
OTAY RANCH RESORT VILLAGE
PROJECT TRIP GENERATION

Land Use	Units	Trip Rate	Daily Trips	AM Peak Hour		PM Peak Hour	
				%	Trips	%	Trips
Phase I - Western Development Area							
Single Family	925 DU	10 / Unit	9,250	8	740 (222-in / 518-out)	10	925 (647-in / 278-out)
Phase I Total			**9,250**		**740 (222-in / 518-out)**		**925 (647-in / 278-out)**
Buildout - Western Development Area							
Single Family	1,408 DU	10 / Unit	14,080	8	1,126 (338-in / 788-out)	10	1,408 (986-in / 422-out)
Multi-Family	57 DU	8 / Unit	456	8	36 (7-in / 29-out)	10	46 (32-in / 14-out)
Park	21.8 Acres	5 / Acre	109	4	4 (2-in / 2-out)	8	9 (4-in / 5-out)
Public Safety	2.1 Acres	229 / Acre	481	10	48 (24-in / 24-out)	8	38 (19-in / 19-out)
Elementary School	10.0 Acres	90 / Acre	900	32	288 (173-in / 115-out)	9	81 (32-in / 49-out)
Commercial	20,000 SF	120 / 1,000 SF	2,400	4	96 (58-in / 38-out)	10	240 (120-in / 120-out)
Subtotal			*18,426*		*1,598 (601-in / 996-out)*		*1,822 (1,193-in / 629-out)*
Buildout - Central Development Area							
Single Family	263 DU	10 / Unit	2,630	8	210 (63-in / 147-out)	10	263 (184-in / 79-out)
Park	2.9 Acres	5 / Acre	15	4	1 (0-in / 1-out)	8	1 (1-in / 0-out)
Subtotal			*2,645*		*211 (63-in / 148-out)*		*264 (185-in / 79-out)*
Buildout - Eastern Development Area							
Single Family	210 DU	10 / Unit	2,100	8	168 (50-in / 118-out)	10	210 (147-in / 63-out)
Park	3.9 Acres	5 / Acre	20	4	1 (1-in / 0-out)	8	2 (1-in / 1-out)
Resort	200 Rooms	8 / Occupied Room	1,600	5	80 (48-in / 32-in)	7	112 (45-in / 67-in)
Commercial	20,000 SF	120 / 1,000 SF	2,400	4	96 (58-in / 38-out)	10	240 (120-in / 120-out)
Subtotal			*6,120*		*345 (157-in / 188-out)*		*564 (313-in / 251-out)*
Buildout Total			**27,191**		**2,154 (821-in / 1,332-out)**		**2,650 (1,691-in / 959-out)**

Source: SANDAG Trip Generation Manual, Chen Ryan Associates; March 2015

As shown in Table 4.1 below, the project would generate a total of 27,191 daily trips including 2,154 (821-in / 1,332-out) AM peak hour trips and 2,650 (1,691-in / 959-out) PM peak hour trips under buildout conditions. With completion of Phase I, the project will generate 9,250 daily trips including 740 (222-in / 518-out) AM peak hour trips and 925 (647-in / 278-out) PM peak hour trips. For the purpose of determining project's impact trigger, the project daily trips were converted to Single Family Dwelling Unit Equivalent (EDU). The project would construct 925 EDU by the completion of Phase I, and 2,720 EDU by the buildout of the project.

Given the nature of the project land uses, it is anticipated that not all trips will leave the project site. For example, certain shopping trips are expected to be satisfied by the commercial uses within the project site, as would school trips and most recreational trips.

Project trips were therefore disaggregated into those that would remain within the project site (internally captured) and those that would leave the project site (external trips). Estimates for internal versus external trip generation percentages were developed based upon likely origins/destinations of each land use type. These estimates were then cross-checked with the project trip generation as estimated by the SANDAG model. The SANDAG model output is included in **Appendix F**. Only external trips were distributed and assigned to the study area roadways. **Table 4.2** displays the proportion of internal and external project trips.

TABLE 4.2
OTAY RANCH RESORT VILLAGE
INTERNAL AND EXTERNAL PROJECT TRIPS

Land Use	Quantity	Total Trips			Internal Trips				External Trips			
		Daily	AM Peak Hour	PM Peak Hour	% Internal	Daily	AM Peak Hour	PM Peak Hour	% External	Daily	AM Peak Hour	PM Peak Hour
Phase I												
Single Family	925 DU	9,250	740 (222-in / 518-out)	925 (647-in / 278-out)	0%	0	0	0	100%	9,250	740 (222-in / 518-out)	925 (647-in / 278-out)
Phase1 Total		**9,250**	**740 (222-in / 518-out)**	**925 (647-in / 278-out)**		**0**	**0**	**0**		**9,250**	**740 (222-in / 518-out)**	**925 (647-in / 278-out)**
Buildout												
Single Family	1,881 DU	18,810	1,505 (451-in / 1,054-out)	1,881 (1,317-in / 564-out)	10%	1,881	150 (45-in / 105-out)	188 (132-in / 56-out)	90%	16,929	1,354 (406-in / 948-out)	1,693 (1,185-in / 508-out)
Multi-Family	57 DU	456	36 (7-in / 29-out)	46 (32-in / 14-out)	10%	46	4 (1-in / 3-out)	5 (3-in / 2-out)	90%	410	33 (7-in / 26-out)	41 (29-in / 12-out)
Park	28.6 Acres	144	6 (3-in / 3-out)	12 (6-in / 6-out)	70%	100	4 (2-in / 2-out)	8 (4-in / 4-out)	30%	44	2 (1-in / 1-out)	4 (2-in / 2-out)
Public Safety	2.1 Acres	481	48 (24-in / 24-out)	38 (19-in / 19-out)	10%	48	4 (2-in / 2-out)	4 (2-in / 2-out)	90%	433	44 (22-in / 22-out)	34 (17-in / 17-out)
Elementary School	10.0 Acres	900	288 (173-in / 115-out)	81 (32-in / 49-out)	80%	720	230 (138-in / 92-out)	65 (26-in / 39-out)	20%	180	58 (35-in / 23-out)	16 (6-in / 10-out)
Commercial	40,000 SF	4,800	192 (116-in / 76-out)	480 (240-in / 240-out)	50%	2,400	96 (58-in / 38-out)	240 (120-in / 120-out)	50%	2,400	96 (58-in / 38-out)	240 (120-in / 120-out)
Resort	200 Rooms	1,600	80 (48-in / 32-out)	112 (45-in / 67-out)	5%	80	4 (2-in / 2-out)	6 (2-in / 4-out)	95%	1,520	76 (46-in / 30-out)	106 (43-in / 63-out)
Grand Total		**27,191**	**2,154 (821-in / 1,332-out)**	**2,650 (1,691-in / 959-out)**		**5,275**	**492 (248-in / 244-out)**	**516 (289-in / 227-out)**		**21,916**	**1,663 (575-in / 1,088-out)**	**2,134 (1,402-in / 732-out)**

Source: SANDAG Trip Generation Manual, Chen Ryan Associates; March 2015

4.2.2 Project Trip Distribution

The distribution of the external project trips was based upon a computer generated "Select Zone" analysis utilizing the Series 11 Year 2030 SANDAG Transportation Model. Three different trip distributions were developed in conjunction with the anticipated roadway network under the various analysis scenarios and timeframes, as follows:

- Existing
- Cumulative (Year 2025)
- Year 2030

Note that manual adjustments were made to project trip distribution patterns to reflect land use changes in Otay Ranch Planning Area 17 (Traffic Analysis Zone (TAZ) 4135) along Otay Lakes Road, east of the project site and west of SR-94. The model forecast (SANDAG Series 11 Southbay2, dated 1/14/2014) assumed the buildout of Otay Ranch Planning Area 17 in Traffic Analysis Zone 4135, which is expected to generate approximately 6,227 daily trips. However, with the adoption of the County of San Diego General Plan Update, the Planning Area 17 land uses have been redesignated as 296 Single Family Residential, with the remainder of the planning area designated as Open Space. As a result, approximately 1,000 project daily trips (1% of the project trips) were going to/coming from TAZ 4135. Manual adjustments were made by redistributing these 1,000 ADT to the adjacent roadway network. Of the 1,000 ADT, 80% were assumed to travel west to Chula Vista and the remaining 20% were assumed to travel east onto SR-94.

Figures 4-1A, 4-1B, and **4-1C** display the respective external project trip distribution patterns associated with the various network scenarios and timeframes listed above.

4.2.3 Project Trip Assignment

Based upon the project trip distributions, the external daily and AM/PM peak hour project trips were assigned to the various roadway networks. Three separate trip assignments were developed including the following:

- Phase I land uses on the Existing network
- Buildout land uses on the Existing network
- Buildout land uses on the Cumulative (Year 2025) network
- Buildout land uses on the Year 2030 network

Figures 4-2A, 4-2B, 4-2C, and **4-2D** display the assignment of project trips to the respective roadway networks and key study area intersections.

5.0 Existing Plus Project (Phase I) Conditions

This section provides an analysis of existing traffic conditions with the addition of project trips from Phase I development of the project. For purposes of this traffic impact study, Phase I is defined as the equivalent of 925 ~~residential unit~~EDUs, or 9,250 ADT. Phase I of the project will also construct several self-serving neighborhood parks as well as a temporary fire station. Phase I of the project will also include several small neighborhood parks as well as a temporary fire station. The neighborhood parks would generate minimal traffic and serve on-site residents only, hence will not create any external traffic. The interim fire station with up to 3-staff could be located anywhere within the project site and also generate minimal traffic. In conclusion, the overall EDU for Phase I would not exceed 925 as studied under the Existing + Project (Phase I) scenario.

5.1 Existing Plus Project (Phase I) Roadway Network and Traffic Volumes

This scenario includes existing traffic volumes with the addition of Phase I project traffic. Intersection and roadway geometrics under Existing Plus Project (Phase I) conditions were assumed to be identical to Existing conditions, with the exception of Project Driveway #2 @ Otay Lakes Road/Intersection #43. This intersection will be constructed by the project as a roundabout by the 1st EDU for frontage and access.~~along Otay Lakes Road assumed to be providing access for the Phase I project traffic.~~

5.2 Existing Plus Project (Phase I) Traffic Conditions

Analyses were conducted using the methodologies described previously in Chapter 2.0. Intersection, roadway segment, and freeway/state highway Level of Service results are discussed in the following sections.

Peak hour traffic volumes at the key study area intersections are displayed in **Figure 5-1A**, while average daily traffic volumes on study area roadway segments are displayed in **Figure 5-1B**.

Intersection Analysis

Table 5.1 displays intersection Level of Service and average vehicle delay results under Existing Plus Project (Phase I) conditions. Level of Service calculation worksheets for the Existing Plus Project (Phase I) conditions are provided in **Appendix G**.

As shown in the table, all of the study area intersections would continue to operate at acceptable LOS D or better during both the AM and PM peak hours under Existing Plus Project (Phase I) conditions.

Based upon the significant impact criteria in Section 2.8, the addition of trips generated by Phase I development of the project, equivalent to 925 ~~residential unit~~EDUs, would not have a significant impact to any of the study area intersections.

TABLE 5.1
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE I) CONDITIONS

Intersection	Existing + Project (Phase I)				Existing		Impact Criteria by Jurisdiction			Significant Impact?
							Caltrans/ San Diego	Chula Vista	County	
	AM Peak Hour		PM Peak Hour		Avg. Delay (sec.) AM/PM	LOS AM/PM	Change in Delay (sec.) AM/PM	Project % of Entering Volume AM/PM	Phase I Traffic to Critical Movements AM/PM	
	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS						
1. East H Street / Otay Lakes Road	36.9	D	28.6	C	34.0 / 28.5	C / C		0.6% / 0.8%		No
2. Proctor Valley Road / Hunte Parkway	13.6	B	12.0	B	13.5 / 12.0	B / B		1.9% / 3.6%		No
3. Telegraph Canyon Road / I-805 SB Ramps	20.0	B	46.2	D	15.7 / 40.9	B / D	4.3 / 5.3	0.6% / 1.3%		No
4. Telegraph Canyon Road / I-805 NB Ramps	31.5	C	17.0	B	27.8 / 16.7	C / B	3.7 / 0.3	1.3% / 1.6%		No
5. Telegraph Canyon Road / Oleander Avenue	16.0	B	17.1	B	15.5 / 16.9	B / B		1.5% / 1.8%		No
6. Telegraph Canyon Road / Paseo Del Rey	14.6	B	27.4	C	11.9 / 27.4	B / C		1.7% / 2.0%		No
7. Telegraph Canyon Road / Medical Center Drive	11.9	B	13.4	B	11.8 / 13.1	B / B		1.7% / 2.1%		No
8. Telegraph Canyon Road / Paseo Ladera	34.3	C	25.8	C	33.7 / 25.3	C / C		2.0% / 2.8%		No
9. Telegraph Canyon Road / Paseo Ranchero/Heritage Road	33.5	C	24.0	C	32.2 / 23.7	C / C		1.9% / 2.7%		No
10. Telegraph Canyon Road / Otay Lakes Road/La Media Road	27.6	C	27.6	C	27.1 / 26.4	C / C		2.6% / 3.2%		No
11. Otay Lakes Road / Rutgers Avenue	11.8	B	10.2	B	11.8 / 10.2	B / B		4.3% / 4.2%		No

TABLE 5.1
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE I) CONDITIONS

Intersection	Existing + Project (Phase I)				Existing		Impact Criteria by Jurisdiction			Significant Impact?
							Caltrans/ San Diego	Chula Vista	County	
	AM Peak Hour		PM Peak Hour		Avg. Delay (sec.) AM/PM	LOS AM/PM	Change in Delay (sec.) AM/PM	Project % of Entering Volume AM/PM	Phase I Traffic to Critical Movements AM/PM	
	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS						
12. Otay Lakes Road / SR-125 SB Ramps	6.1	A	9.2	A	5.9 / 8.8	A / A	0.2 / 0.4	5.5% / 5.3%		No
13. Otay Lakes Road / SR-125 NB Ramps	3.0	A	3.8	A	2.9 / 3.5	A / A	0.1 / 0.3	5.9% / 5.8%		No
14. Otay Lakes Road / Eastlake Parkway	28.0	C	28.4	C	26.7 / 27.9	C / C		6.9% / 6.1%		No
15. Otay Lakes Road / Lane Avenue	12.4	B	14.6	B	12.4 / 14.6	B / B		13.6% / 14.6%		No
16. Otay Lakes Road / Fenton Street	8.3	A	15.7	B	8.3 / 15.7	A / B		16.1% / 19.6%		No
17. Otay Lakes Road / Hunte Parkway	26.5	C	23.4	C	23.7 / 23.4	C / C		16.3% / 24.3%		No
18. Otay Lakes Road / Woods Drive	14.3	B	13.4	B	14.3 / 13.4	B / B		28.9% / 42.9%		No
19. Otay Lakes Road / Lake Crest Drive	15.0	B	13.9	B	13.4 / 13.9	B / B		42.1% / 53.0%		No
20. Otay Lakes Road / Wueste Road*	11.8	B	16.9	C	9.2 / 9.1	A / A		73.5% / 78.7%		No
21. Otay Lakes Road / SR-94 (County)*	15.4	C	16.5	C	10.8 / 12.7	B / B	4.6 / 3.8		EBL: +31 / +17	No
22. Olympic Parkway / East Palomar Street	28.2	C	28.6	C	26.3 / 28.2	C / C		1.9% / 1.8%		No
23. Olympic Parkway / SR-125 SB Ramps	4.6	A	7.7	A	4.6 / 7.7	A / A	0.0 / 0.0	4.4% / 2.8%		No
24. Olympic Parkway / SR-125 NB Ramps	2.4	A	5.0	A	1.7 / 3.6	A / A	0.7 / 1.4	4.8% / 4.3%		No

TABLE 5.1
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE I) CONDITIONS

Intersection	Existing + Project (Phase I)				Existing		Impact Criteria by Jurisdiction			Significant Impact?
							Caltrans/ San Diego	Chula Vista	County	
	AM Peak Hour		PM Peak Hour		Avg. Delay (sec.) AM/PM	LOS AM/PM	Change in Delay (sec.) AM/PM	Project % of Entering Volume AM/PM	Phase I Traffic to Critical Movements AM/PM	
	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS						
25. Olympic Parkway / Eastlake Parkway	22.3	C	22.2	C	22.0 / 22.1	C / C		7.9% / 7.7%		No
26. Olympic Parkway / Hunte Parkway	20.7	C	20.7	C	19.6 / 20.0	B / C		17.2% / 17.9%		No
27. Olympic Parkway / Olympic Vista Road	18.7	B	19.0	B	18.7 / 19.0	B / B		20.4% / 20.6%		No
28. Olympic Parkway / Wueste Road	4.9	A	9.6	A	4.8 / 9.6	A / A		57.8% / 50.2%		No
29. Lake Crest Drive / Wueste Road	20.2	C	13.9	B	12.3 / 7.7	B / A		45.3% / 53.4%		No
30. Main Street / SR-125 SB Ramps	Does Not Exist									
31. Main Street / SR-125 NB Ramps	Does Not Exist									
32. Main Street / Eastlake Parkway	Does Not Exist									
33. Otay Valley Road / SR-125 SB Ramps	Does Not Exist									
34. Otay Valley Road / SR-125 NB Ramps	Does Not Exist									
35. Otay Mesa Road / La Media Road (SD)	48.7	D	40.7	D	44.3 / 37.8	D / D	4.4 / 2.9			No
36. Otay Mesa Road / SR-125 SB Ramps (SD)	9.8	A	8.9	A	9.7 / 8.5	A / A	0.1 / 0.4			No
37. Otay Mesa Road / SR-125 NB Ramps (SD)	2.3	A	6.6	A	2.3 / 6.3	A / A	0.0 / 0.3			No

TABLE 5.1
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE I) CONDITIONS

Intersection	Existing + Project (Phase I)				Existing		Impact Criteria by Jurisdiction			
							Caltrans/ San Diego	Chula Vista	County	
	AM Peak Hour		PM Peak Hour		Avg. Delay (sec.) AM/PM	LOS AM/PM	Change in Delay (sec.) AM/PM	Project % of Entering Volume AM/PM	Phase I Traffic to Critical Movements AM/PM	Significant Impact?
	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS						
38. Otay Mesa Road / Ellis Road (County)	Does Not Exist									
39. SR-94 / Melody Road (County)	13.3	B	17.7	C	13.3 / 17.7	B / C	0.0 / 0.0		EBL: +0 / +0	No
40. SR-94 / Maxfield Road (County)*	15.7	C	21.6	C	12.9 / 20.4	B / C	2.8 / 1.2		EBL: +0 / +0	No
41. SR-94 / Jefferson Road (County)	13.0	B	12.3	B	12.9 / 12.2	B / B	0.1 / 0.1		SBL: +2 / +6	No
42. Otay Lakes Road @ Project Driveway #1 (County)	Does Not Exist									
43. Otay Lakes Road @ Project Driveway #2[RA] (County)	4.6	A	4.8	A	Does Not Exist				SBL: +195 / +569	No
44. Otay Lakes Road @ Project Driveway #3[RA] (County)	Does Not Exist									

Source: Chen Ryan Associates; March 2015

Notes:
* For two-way stop controlled intersections, the delay shown is the worst delay experienced by any of the approaches.
RA = Roundabout. Rodel software is utilized for the peak hour operational analysis.

Roadway Segment Analysis

Tables 5.2A and **5.2B** display the Level of Service analysis results for key roadway segments under Existing Plus Project (Phase I) conditions in the City of Chula Vista and in the County of San Diego, respectively. As shown, the following three (3) roadway segments in the City of Chula Vista and two (2) in the County of San Diego would operate at an unacceptable LOS E or F under Existing Plus Project (Phase I) conditions:

- Telegraph Canyon Rd, between Oleander Ave and Medical Center Dr (LOS E, City of CV) – Proposed Phase I project trips would comprise 1.6% (less than 5%) of the total segment volume, and would add 925 ADT (more than 800 ADT). However, the intersections of Telegraph Canyon Road / Oleander Avenue and Telegraph Canyon Road / Medical Center Drive are projected to operate at acceptable LOS B during the peak hours, thus the project would not have a significant impact to this roadway segment.
- Otay Lakes Rd, between Lake Crest Dr and Wueste Rd (LOS E, City of CV) – Proposed Phase I project trips would comprise 71.5% (more than 5%) of the total segment volume, and would also add 6,660 ADT (more than 800 ADT) to this roadway segment. However, the intersections of Otay Lakes Road / Lake Crest Drive and Otay Lakes Road / Wueste Road are projected to operate at acceptable LOS C or better, thus the project would not have a significant impact to this roadway segment.
- Otay Lakes Rd, between Wueste Rd and the City of Chula Vista/County boundary (LOS F, City of CV) – Proposed Phase I project trips would comprise 73.8% (more than 5%) of the total segment volume, and would also add 8,230 ADT (more than 800 ADT) to this roadway segment. Even though, the intersections of Otay Lakes Road / Wueste Road are projected to operate at acceptable LOS C or better, since the project cause this roadway segment to operate at an unacceptable LOS F, the project would have a significant project specific (direct) impact to this roadway segment.
- Otay Lakes Rd, between the City of Chula Vista/County boundary and Project Driveway #1/Intersection #42 (LOS E, County) – Proposed project would add more than 200 ADT to this failing 2-lane roadway segment. Thus, the project would have a significant direct impact to this roadway segment.
- Otay Lakes Rd, between Project Driveway #1/Intersection #42 and Driveway #2/Intersection #43 (LOS E, County) – Proposed project would add more than 200 ADT to this failing 2-lane roadway segment. Thus, the project would have a significant direct impact to this roadway segment.

Based upon the significant impact criteria described in Section 2.8, the addition of trips generated by Phase I development of the project, equivalent to 925 ~~residential unit~~EDUs, would have a significant impact to three (3) of the roadway segments analyzed.

Freeway/State Highway Segment Analysis

The freeway/state highway segment Level of Service analysis was performed utilizing the methodology presented in Chapter 2.0. **Table 5.3** displays the resulting Level of Service for I-805 and SR-125 under Existing Plus Project (Phase I) conditions.

TABLE 5.2A
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE I) CONDITIONS
(City of Chula Vista)

Roadway	Segment	Cross-Section	ADT	LOS Threshold (LOS C)	LOS w/ Project	Project Contribution ≥ 5%?	Project ADT > 800?	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
Proctor Valley Rd	Lane Ave to Hunte Pkwy	6-Ln w/ RM	14,525	50,000	A				No
Telegraph Canyon Rd	I-805 SB Ramps to I-805 NB Ramps	7-Ln w/ RM	55,617	70,000	B				No
	I-805 NB Ramps to Oleander Ave		60,540		B				No
	Oleander Ave to Medical Center Dr	6-Ln w/ RM	56,701	50,000	**E**	1.6%	925	Yes	No
	Medical Center Dr to Paseo Ladera		48,504		C				No
	Paseo Ladera to Paseo Ranchero / Heritage Rd		45,514		C				No
	Paseo Ranchero / Heritage Rd to La Media Rd		36,790		A				No
Otay Lakes Rd	East H St to Telegraph Canyon Rd/Otay Lakes Rd	4-Ln w/ RM	29,375	30,000	C				No
	La Media Rd to Rutgers Ave	6-Ln w/ RM	44,177	50,000	C				No
	Rutgers Ave to SR-125 SB Ramps		43,966		C				No
	SR-125 SB Ramps to SR-125 NB Ramps		48,626		C				No
	SR-125 NB Ramps to Eastlake Pkwy	7-Ln w/ RM	43,251	70,000	A				No

TABLE 5.2A
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE I) CONDITIONS
(City of Chula Vista)

Roadway	Segment	Cross-Section	ADT	LOS Threshold (LOS C)	LOS w/ Project	Project Contribution ≥ 5%?	Project ADT > 800?	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
Otay Lakes Rd	Eastlake Pkwy to Lane Ave	6-Ln w/ RM	29,384	50,000	A				No
	Lane Ave to Fenton St		22,532		A				No
	Fenton St to Hunte Pkwy		22,417		A				No
	Hunte Pkwy to Woods Dr		15,412		A				No
	Woods Dr to Lake Crest Dr		13,746		A				No
	Lake Crest Dr to Wueste Rd	2-Ln	9,314	7,500	**E**	71.5%	6,660	Yes	No
	Wueste Rd to City of CV/County Boundary		11,157	7,500	**F**	75.0%	7,970	Yes	**Yes**
Olympic Pkwy	La Media Rd to E Palomar St	6-Ln w/ RM	33,505	50,000	A				No
	E Palomar St to SR-125 SB Ramps		35,417		A				No
	SR-125 SB Ramps to SR-125 NB Ramps		38,802		B				No
	SR-125 NB Ramps to Eastlake Pkwy	8-Ln w/ RM	44,894	70,000	A				No
	Eastlake Pkwy to Hunte Pkwy	6-Ln w/ RM	18,417	50,000	A				No
	Hunte Pkwy to Olympic Vista Rd	4-Ln w/ RM	11,416	30,000	A				No
	East of Olympic Vista Rd		5,555		A				No
Lane Ave	Proctor Valley Rd to Otay Lakes Rd	4-Ln w/ TWLTL	11,174	22,000	A				No

TABLE 5.2A
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE I) CONDITIONS
(City of Chula Vista)

Roadway	Segment	Cross-Section	ADT	LOS Threshold (LOS C)	LOS w/ Project	Project Contribution ≥ 5%?	Project ADT > 800?	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
Hunte Pkwy	Proctor Valley Rd to Otay Lakes Rd	4-Ln w/ RM	6,732	30,000	A				No
	Otay Lakes Rd to Clubhouse Dr		12,377		A				No
	Clubhouse Dr to Olympic Pkwy		9,357		A				No
	Olympic Pkwy to Eastlake Pkwy	6-Ln w/ RM	2,385	50,000	A				No

Source: Chen Ryan Associates; March 2015

Notes:
Bold letter indicates unacceptable LOS D, E or F.
RM = Raised Median.
TWLTL = Two-Way Left-Turn Lane.

TABLE 5.2B
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE I) CONDITIONS
(County of San Diego)

Roadway	Segment	Cross-Section	ADT	LOS Threshold (LOS D)	LOS w/ Project	LOS w/o Project	Significant Impact?
Otay Lakes Rd	City of CV/County boundary to Driveway #1	2-Ln	11,157	10,900	**E**	B	**Yes (Direct)**
	Driveway #1 to Driveway #2		11,157		**E**	B	**Yes (Direct)**
	Driveway #2 to Driveway #3	2-Ln	3,947	10,900	C	B	No
	Driveway #3 to SR-94		3,947		C	B	No

Source: Chen Ryan Associates; March 2015

TABLE 5.3
FREEWAY/STATE HIGHWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE I) CONDITIONS

Freeway / State Highway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	% of Heavy Vehicle	Volume (pc/h/ln)	V/C	LOS w/ Project	Change in V/C (compare to Existing)	Significant Impact?
I-805	Bonita Road to East H Street	206,800	7.1%	14,662	0.52	5M*	0.95	7.0%	1,667	0.695	C	0.005	No
	East H Street to Telegraph Canyon Road	191,800	7.1%	13,599	0.52	5M*	0.95	7.0%	1,547	0.645	C	0.005	No
	Telegraph Canyon Road to Olympic Parkway	151,100	7.1%	10,713	0.52	4M+1Aux*	0.95	7.0%	1,351	0.563	B	0.000	No
	Olympic Parkway to Main Street	141,300	7.1%	10,018	0.52	4M+1Aux*	0.95	7.0%	1,264	0.527	B	0.000	No
SR-125	SR-54 to Mt. Miguel Road	18,300	7.0%	1,281	0.58	2M	0.95	10.3%	410	0.171	A	0.005	No
	Mt Miguel Road to Proctor Valley Road	16,900	7.0%	1,183	0.58	2M	0.95	10.3%	376	0.157	A	0.005	No
	Proctor Valley Road to Otay Lakes Road	13,200	7.0%	924	0.58	2M	0.95	10.3%	299	0.125	A	0.005	No
	Otay Lakes Road to Olympic Parkway	4,900	7.0%	343	0.58	2M	0.95	10.3%	111	0.046	A	0.000	No
	Olympic Parkway to Birch Road	5,200	7.0%	364	0.58	2M	0.95	10.3%	122	0.051	A	0.009	No
	Birch Road to Main Street	5,500	7.0%	385	0.58	2M	0.95	10.3%	122	0.051	A	0.009	No
	Main Street to Otay Valley Road	5,500	7.0%	385	0.58	2M	0.95	10.3%	122	0.051	A	0.009	No
	Otay Valley Road to Lone Star Road	5,500	7.0%	385	0.58	2M	0.95	10.3%	122	0.051	A	0.009	No
	Lone Star Road to Otay Mesa Road	5,500	7.0%	385	0.58	2M	0.95	10.3%	122	0.051	A	0.009	No
	Otay Mesa Road to SR-905	Does Not Exist											

Source: Chen Ryan Associates; March 2015

Notes:
*2 new HOV lanes have been constructed very recently. However, freeway ADT information is not available for these HOV lanes. The existing conditions analysis is based on pre HOV freeway geometrics and traffic volumes. This should represent the worst case scenario.
M = Mainline.
Aux = Auxiliary Lane.

As shown in Table 5.3, all study I-805 freeway segments would continue to operate at acceptable LOS D or better under Existing Plus Project (Phase I) conditions. The addition of trips generated by Phase I development of the project, equivalent to 925 ~~residential unit~~EDUs, would not cause any significant traffic impacts to study area freeway/state highway segments.

Two-Lane Highway Segment Analysis

Tables 5.4A and **5.4B** display the two-lane highway Level of Service analysis results for SR-94 under Existing Plus Project (Phase I) conditions, utilizing the County of San Diego and Caltrans methodologies, respectively. The two-lane highway HCM analysis worksheets are included in **Appendix H**.

As shown in Table 5.4A, SR-94, from Lyons Valley Road to south of Otay Lakes Road, would operate under acceptable LOS D or better based on County of San Diego LOS criteria. The addition of trips generated by Phase I development of the project, equivalent to 925 ~~residential unit~~EDUs, would not cause any significant traffic impacts to SR-94 based on County of San Diego LOS criteria.

As shown in Table 5.4B, the segment of SR-94 from Melody Road to south of Otay Lakes Road would operate at acceptable LOS C based on the Caltrans/HCM methodology. The addition of trips generated by Phase I development of the project would not cause any significant traffic impacts to SR-94 based on Caltrans/HCM two-lane highway analysis methodology. The segment of SR-94, north of Melody Road, was not analyzed using the Caltrans/HCM methodology since the proposed project would not add 50 or more peak hour trips in either direction to this segment of SR-94.

TABLE 5.4A
2-LANE HIGHWAY SEGMENT LEVEL OF SERVICE RESULTS
COUNTY OF SAN DIEGO LOS CRITERIA
EXISTING PLUS PROJECT (PHASE I) CONDITIONS

Highway	Segment	LOS Threshold (LOS D)	ADT	LOS w/ Project	LOS w/o Project	Significant Impact?
SR-94	Lyons Valley Road to Jefferson Road	16,200	10,869	D or better	D or better	No
	Jefferson Road to Maxfield Road		9,234	D or better	D or better	No
	Maxfield Road to Melody Road		8,304	D or better	D or better	No
	Melody Road to Otay Lakes Road		7,405	D or better	D or better	No
	South of Otay Lakes Road		7,334	D or better	D or better	No

Source: Chen Ryan Associates; March 2015

TABLE 5.4B
2-LANE HIGHWAY SEGMENT LEVEL OF SERVICE RESULTS
CALTRANS AND HCM METHODOLOGY
EXISTING PLUS PROJECT (PHASE I) CONDITIONS

Highway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	%HV	Volume (pc/h/ln)	Speed (mph)	LOS w/ Project	LOS w/o Project	Significant Impact?
SR-94	Melody Road to Otay Lakes Road	7,405	8.9%	659	0.67	1	0.92	5.0%	484	48.9	C	C	No
	South of Otay Lakes Road	7,334	8.4%	613	0.67	1	0.96	5.0%	450	49.7	C	C	No

Source: Chen Ryan Associates; March 2015

Ramp Intersection Capacity Analysis

Consistent with Caltrans requirements, the signalized freeway ramp intersections along I-805 at Telegraph Canyon Road and along SR-125 at various interchanges were analyzed under Existing Plus Project (Phase I) conditions using the ILV procedures as described in Chapter 2.0. ILV analysis results are displayed in **Table 5.5** and analysis worksheets for the Existing Plus Project (Phase I) conditions are provided in **Appendix I.**

TABLE 5.5
RAMP INTERSECTION CAPACITY ANALYSIS
EXISTING PLUS PROJECT (PHASE I) CONDITIONS

Ramp Intersection	Peak Hour	ILV / Hour	Description
I-805 SB Ramps / Telegraph Canyon Road	AM	1,392	*1200-1500: (At Capacity)*
	PM	1,713	*>1500: (Over Capacity)*
I-805 NB Ramps / Telegraph Canyon Road	AM	1,407	*1200-1500: (At Capacity)*
	PM	1,205	*1200-1500: (At Capacity)*
SR-125 SB Ramps / Otay Lakes Road	AM	938	*<1200: (Under Capacity)*
	PM	1,265	*1200-1500: (At Capacity)*
SR-125 NB Ramps / Otay Lakes Road	AM	888	*<1200: (Under Capacity)*
	PM	1,191	*<1200: (Under Capacity)*
SR-125 SB Ramps / Olympic Parkway	AM	742	*<1200: (Under Capacity)*
	PM	1,034	*<1200: (Under Capacity)*
SR-125 NB Ramps / Olympic Parkway	AM	697	*<1200: (Under Capacity)*
	PM	1,046	*<1200: (Under Capacity)*
SR-125 SB Ramps / Main Street	AM	Does Not Exist	
	PM		
SR-125 NB Ramps / Main Street	AM	Does Not Exist	
	PM		
SR-125 SB Ramps / Otay Valley Road	AM	Does Not Exist	
	PM		
SR-125 SB Ramps / Otay Valley Road	AM	Does Not Exist	
	PM		
SR-125 SB Ramps / Otay Mesa Road	AM	587	*<1200: (Under Capacity)*
	PM	326	*<1200: (Under Capacity)*
SR-125 SB Ramps / Otay Mesa Road	AM	325	*<1200: (Under Capacity)*
	PM	649	*<1200: (Under Capacity)*

Source: Chen Ryan Associates; March 2015

As shown in the table, similar to Existing conditions analyzed in Table 3.5, both I-805 ramp intersections at Telegraph Canyon Road would continue to operate at "At Capacity" and/or "Under Capacity" during the peak hours, with the exception of the I-805 SB Ramps at Telegraph Canyon Road intersection, which would operate at "Over Capacity" during the PM peak hour. All of the SR-125 ramp intersections within the study area would operate at "At Capacity" and/or "Under Capacity" during both the AM and PM peak hours under the Existing Plus Project (Phase I) conditions.

Ramp Metering Analysis

Table 5.6 displays the ramp metering analysis conducted at the I-805 NB On-Ramp at Telegraph Canyon Road under Existing Plus Project (Phase I) conditions. Similar to the Existing conditions, it is assumed that approximately 80% of the total arrival traffic (demand) would utilize the two non-HOV lanes.

TABLE 5.6
RAMP METERING ANALYSIS
EXISTING PLUS PROJECT (PHASE I) CONDITIONS

Location	Peak Hour	Demand[1] (veh/hr)	Meter Rate[2] (veh/hr)	Excess Demand[3] (veh/hr)	Delay w/ Project[4] (min)	Queue[5] (ft)	Delay w/o Project (min)	Significant Impact?
I-805 NB On-Ramp @ Telegraph Canyon Road	AM	1,920	1,824	96	3.2	1,400	1.8	No

Source: Chen Ryan Associates; March 2015

Notes:
1. Demand is the peak hour demand expected to use the on-ramp.
2. Meter Rate is the peak hour capacity expected to be processed through the ramp meter. This value was obtained from Caltrans.
3. Excess Demand = (Demand) – (Meter Rate) or zero, whichever is greater.
4. Delay = (Excess Demand / Meter Rate) X 60 min/hr.
5. Queue (Per Ramp Lane) = (Excess Demand) X 29 ft/veh/# of non-HOV lanes.

As shown in **Table 5.6**, the AM peak hour demand at the NB On-Ramp AM would be greater than the capacity provided by this ramp meter under Existing Plus Project (Phase I) conditions. However, based upon SANTEC/ITE Guidelines, the projected delay of 3.2 minutes (less than 15 min.) would be acceptable. The proposed project would not result in any significant impact at this on-ramp.

Impact Significance and Mitigation

This section identifies required mitigation measures for intersection and roadway facilities that would be significantly impacted by project-related traffic under Existing Plus Project (Phase I) conditions.

Intersections

None of the study area intersection would be significantly impacted, and therefore, no mitigation measures would be required under Existing Plus Project (Phase I) conditions.

Roadway Segments

The proposed project would have a direct impact on one (1) roadway segment located in the City of Chula Vista and two (2) roadway segments located in the County of San Diego under Existing Plus Project (Phase I) conditions. The following roadway improvements would be required to mitigate these impacts:

- Otay Lakes Road, between Wueste Road and the City of Chula Vista/County boundary (City of CV) – widen from 2-lane to 4-lane (4-Lane Major with Raised Median) by the 728th ~~residential unit~~EDU. This significantly impacted roadway segment would operate at LOS A with the roadway widening.

  The improvement to Otay Lakes Road identified above is consistent with the City of Chula Vista's Circulation Element. The Circulation Element identifies this segment as a 6-Lane Prime Arterial. Widening the segment from the current two-lane configuration to four lanes, as recommended by the mitigation measure, would not conflict with the City's long-range road widening plans (six lanes) because the mitigation improvements (widen from two to four lanes) do not foreclose or conflict with the City's ultimate build-out plans or programs. A preliminary design of this mitigation measure is shown in **Figure 5-2.**

  If implemented, the mitigation improvements would fully mitigate the Project's project-specific (direct) impacts to the segment of Otay Lakes Road between Wueste Road. However, because the necessary improvements would be constructed within the City of Chula Vista and, therefore, are outside of the County's jurisdiction and control, the County cannot assure that the City will permit implementation of the improvements. Therefore, although mitigation in the form of road improvements has been identified to reduce the corresponding impacts to less than significant, and although the Project applicant would implement the improvements consistent with the mitigation requirements, for purposes of CEQA and this Draft EIR, the impacts to Otay Lakes Road between Wueste Road and City of Chula Vista/County boundary are considered significant and unavoidable until such time as the City concurs with the mitigation. In addition, the City of Chula Vista does not consider impacts to its facility under the Existing Plus Project conditions to be realistic impacts when used in connection with a long-range development project such as the proposed Resort Village project, which is not anticipated to reach full buildout until approximately 2025. The analysis of the project's potential impacts as measured against the existing conditions baseline that follows is presented for disclosure, information and comparison purposes only for facilities in Chula Vista. The identification of the project's significant impacts, with recommended mitigation, will be based on the future year analyses that take into account cumulative traffic growth, as well as the changing roadway network and land uses that accompany a long-range development project such as this.

- Otay Lakes Road, between the City of Chula Vista/County boundary and Project Driveway #1/Intersection #42 (County) – widen from 2 lanes to the proposed 4-lane Boulevard with Raised Median (County's 4.2A Public Road Classification), by the 896th ~~residential unit~~EDU. This significantly impacted roadway segment would operate at LOS A with the roadway widening.

- Otay Lakes Road, between Project Driveway #1/Intersection #42 and Driveway #2/Intersection #43 (County) – widen from 2 lanes to the proposed 4-lane Boulevard with Raised Median (County's 4.2A Public Road Classification), by the 896th ~~residential unit~~EDU. This significantly impacted roadway segment would operate at LOS A with the roadway widening.

Freeways/State Highways

None of the study area freeway/state highway facilities would be significantly impacted, and therefore, no mitigation measures would be required under Existing Plus Project (Phase I) conditions.

Two-Lane Highways

None of the study area two-lane highway facilities would be significantly impacted, and therefore no mitigation measures would be required under Existing Plus Project (Phase I) conditions.

Ramp Metering

The I-805 NB On-Ramp at Telegraph Canyon Road would not be significantly impacted, and therefore no mitigation measures would be required under Existing Plus Project (Phase I) conditions.

6.0 Existing Plus Project (Buildout) Conditions

This section provides an analysis of existing traffic conditions with the addition of project trips from buidlout of the project.

6.1 Existing Plus Project (Buildout) Roadway Network and Traffic Volumes

Intersection and roadway geometrics under Existing Plus Project (Buildout) conditions were assumed to be identical to Existing Plus Project (Phase I) conditions, ~~with the addition of the three~~with the construction of an additional ~~(3)~~ two (2) project driveways for frontage and access, as follows:

- Project Driveway #1/Intersection #42 @ Otay Lakes Road construct as a~~–~~ signalized T-intersection by the 926th EDU; and
- ~~Project Driveway #2 @ Otay Lakes Road – roundabout; and~~
- Project Driveway #3/Intersection #44 @ Otay Lakes Road ~~—~~construct as a roundabout by the 1,729th EDU.

Significant technical analyses and discussions with County staff have taken place in order to determine realistic traffic controls at these project driveways.

A traffic signal warrant was performed at Project Driveway #1/Intersection #~~ and~~42 and the results are discussed below.

Mitigation Measures Carried forward from Phase 1

As discussed in Section 5 above, the following improvements (project feature and mitigation measures) would be implemented under Existing Plus Project (Phase I) scenario, and therefore are included as part of the Existing Plus Project (Buildout) roadway network:

- Widening of Otay Lakes Road, between the City of Chula Vista/County boundary and Project Driveway #1/Intersection #42 (County) from 2 lanes to the proposed 4-lane Boulevard with Raised Median (County's 4.2A Public Road Classification); and
- Widening of Otay Lakes Road, between Project Driveway #1/Intersection #42 and Driveway #2/Intersection #43 (County) from 2 lanes to the proposed 4-lane Boulevard with Raised Median (County's 4.2A Public Road Classification).

Traffic Signal Warrant at Project Driveway #1/Intersection #42

The traffic signal warrants used in this analysis are in accordance with the methodologies established in the *California Manual of Uniformed Traffic Control Devices (MUTCD) 2012 Edition.* Since no actual traffic volumes exist at this intersection under existing conditions (the intersection has not yet been constructed), the signal warrant analysis was based on the MUTCD's Figure 4C-103 (CA), which is based on the estimated average daily traffic with three warrants: The Minimum

Vehicular Traffic warrant, the Interruption of Continuous Traffic warrant, and the Combinations warrant.

Warrant 1A "Minimum Vehicular Traffic" requires that a minimum daily traffic volume of 5,600 vehicles per day (vpd) be present along the major street (sum of both directions of Otay Lakes Road) and a minimum volume of 1,680 vpd be present along the higher volume approach of the minor street (project driveway approach). Based upon the existing traffic counts and the Select Zone Assignment (by SANDAG), the Otay Lakes Road and project driveway approach daily traffic volumes are estimated to be 22,467 vpd and 1,350 vpd, respectively. Under this warrant, the driveway approach volume would fall below the required minimum, and therefore Warrant 1A would be considered un-met at this intersection.

Warrant 1B "Interruption of Continuous Traffic" requires that a minimum daily of 8,400 vehicles per day (vpd) be present along Otay Lakes Road and a minimum volume of 850 vpd be present along the driveway approach. The Existing Plus Project (Buildout) volumes are estimated to be 22,467 vpd and 1,350 vpd, for Otay Lakes Road and the project driveway, respectively, indicating that both the Otay Lakes Road and project driveway volumes would fall above the required minimum thresholds. Therefore, Warrant 1B would be considered met at this intersection.

"Warrant 1A&B Combination" requires that each of Warrants 1A and 1B be satisfied to 80% of each Warrant requirements. The minimum requirement to meet 80% of Warrant 1A are 4,480 main street daily volume (both directions) and 1,344 (higher-volume minor street approach). Meeting 80% of Warrant 1B requires 6,720 main street daily volume (both directions) and 680 higher-volume minor street approach. The estimated volumes of 22,467 vpd and 1,350 vpd for Otay Lakes Road and project driveway, respectively, indicate that both the Otay Lake Road and Project Driveway #1/Intersection #42 volumes would fall above the required minimum threshold. Therefore, Warrant 1A&B Combination would be considered met at this intersection.

In conclusion, the signal warrant analysis presented above shows that Warrants 1B and 1A&B Combination would be met at the Otay Lake Road @ Project Driveway #1 intersection under Existing Plus Project (Buildout) conditions. With two of the warrants having been satisfied, traffic signalization is recommended at this future intersection. **Appendix J** displays the Traffic Signal Warrants Worksheet.

6.2 Existing Plus Project (Buildout) Traffic Conditions

Analyses were conducted using the methodologies described previously in Chapter 2.0. Intersection, roadway segment, and freeway/state highway Level of Service results are discussed in the following sections.

Peak hour traffic volumes at the key study area intersections are displayed in **Figure 6-1A**, while average daily traffic volumes on study area roadway segments are displayed in **Figure 6-1B**.

Intersection Analysis

Table 6.1 displays intersection Level of Service and average vehicle delay results under Existing Plus Project (Buildout) conditions. Level of Service calculation worksheets for the Existing Plus Project (Buildout) conditions are provided in **Appendix K**.

As shown in Table 6.1, all of the study area intersections would continue to operate at acceptable LOS D or better during both the AM and PM peak hours under Existing Plus Project (Buildout) conditions, with the exception of the unsignalized Otay Lakes Road / Wueste Road intersection located in the City of Chula Vista. This intersection (#20) would operate at an unacceptable LOS E during the PM peak hour with the addition of the project traffic. Based upon the significant impact criteria discussed in Section 2.8, the additional traffic generated by buildout of the project would cause a project specific (direct) impact at this intersection since the buildout project traffic would comprise more 86.1% during the AM peak hour (more than 5%) and 89.5% (more than 5%) of the total entering volumes.

TABLE 6.1
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (BUILDOUT) CONDITIONS

Intersection	Existing + Project (Buildout)				Existing		Impact Criteria by Jurisdiction			Significant Impact?
							Caltrans/ San Diego	Chula Vista	County	
	AM Peak Hour		PM Peak Hour		Avg. Delay (sec.) AM/PM	LOS AM/PM	Change in Delay (sec.) AM/PM	Project % of Entering Volume AM/PM	Phase I Traffic to Critical Movements AM/PM	
	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS						
1. East H Street / Otay Lakes Road	34.3	C	28.8	C	34.0 / 28.5	C / C		1.5% / 1.9%		No
2. Proctor Valley Road / Hunte Parkway	13.7	B	12.0	B	13.5 / 12.0	B / B		4.1% / 7.9%		No
3. Telegraph Canyon Road / I-805 SB Ramps	22.1	C	52.9	D	15.7 / 40.9	B / D	6.4 / 12.0	1.5% / 2.9%		No
4. Telegraph Canyon Road / I-805 NB Ramps	31.9	C	19.7	B	27.8 / 16.7	C / B	4.1 / 3.0	2.8% / 3.6%		No
5. Telegraph Canyon Road / Oleander Avenue	15.8	B	18.2	B	15.5 / 16.9	B / B		3.4% / 4.0%		No
6. Telegraph Canyon Road / Paseo Del Rey	14.8	B	27.5	C	11.9 / 27.4	B / C		3.6% / 4.4%		No
7. Telegraph Canyon Road / Medical Center Drive	12.1	B	13.9	B	11.8 / 13.1	B / B		3.9% / 4.8%		No
8. Telegraph Canyon Road / Paseo Ladera	35.1	D	26.4	C	33.7 / 25.3	C / C		4.5% / 6.2%		No
9. Telegraph Canyon Road / Paseo Ranchero/Heritage Road	34.2	C	24.3	C	32.2 / 23.7	C / C		4.1% / 5.9%		No
10. Telegraph Canyon Road / Otay Lakes Road/La Media Road	28.4	C	30.5	C	27.1 / 26.4	C / C		5.7% / 7.0%		No
11. Otay Lakes Road / Rutgers Avenue	11.8	B	10.2	B	11.8 / 10.2	B / B		9.2% / 9.2%		No

TABLE 6.1
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (BUILDOUT) CONDITIONS

Intersection	Existing + Project (Buildout)				Existing		Impact Criteria by Jurisdiction			Significant Impact?
							Caltrans/ San Diego	Chula Vista	County	
	AM Peak Hour		PM Peak Hour		Avg. Delay (sec.) AM/PM	LOS AM/PM	Change in Delay (sec.) AM/PM	Project % of Entering Volume AM/PM	Phase I Traffic to Critical Movements AM/PM	
	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS						
12. Otay Lakes Road / SR-125 SB Ramps	6.3	A	9.7	A	5.9 / 8.8	A / A	0.4 / 0.9	11.6% / 11.4%		No
13. Otay Lakes Road / SR-125 NB Ramps	3.1	A	4.2	A	2.9 / 3.5	A / A	0.2 / 0.7	12.4% / 12.3%		No
14. Otay Lakes Road / Eastlake Parkway	29.7	C	30.2	C	26.7 / 27.9	C / C		14.3% / 13.1%		No
15. Otay Lakes Road / Lane Avenue	12.4	B	14.6	B	12.4 / 14.6	B / B		26.1% / 28.3%		No
16. Otay Lakes Road / Fenton Street	8.3	A	15.7	B	8.3 / 15.7	A / B		30.1% / 36.0%		No
17. Otay Lakes Road / Hunte Parkway	26.5	C	24.4	C	23.7 / 23.4	C / C		27.0% / 36.6%		No
18. Otay Lakes Road / Woods Drive	16.0	B	13.4	B	14.3 / 13.4	B / B		47.7% / 63.4%		No
19. Otay Lakes Road / Lake Crest Drive	15.4	B	14.8	B	13.4 / 13.9	B / B		62.0% / 72.2%		No
20. Otay Lakes Road / Wueste Road*	15.5	C	43.6	**E**	9.2 / 9.1	A / A		86.1% / 89.5%		**Yes (Direct)**[1]
21. Otay Lakes Road / SR-94 (County)*	16.4	C	19.9	C	10.8 / 12.7	B / B	5.6 / 7.2		EBL: +65 / +44	No
22. Olympic Parkway / East Palomar Street	27.1	C	29.4	C	26.3 / 28.2	C / C		2.0% / 2.7%		No
23. Olympic Parkway / SR-125 SB Ramps	4.6	A	7.7	A	4.6 / 7.7	A / A	0.0 / 0.0	4.3% / 4.0%		No
24. Olympic Parkway / SR-125 NB Ramps	3.3	A	6.6	A	1.7 / 3.6	A / A	1.6 / 3.0	9.1% / 6.6%		No

TABLE 6.1
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (BUILDOUT) CONDITIONS

Intersection	Existing + Project (Buildout)				Existing		Impact Criteria by Jurisdiction			Significant Impact?
							Caltrans/ San Diego	Chula Vista	County	
	AM Peak Hour		PM Peak Hour		Avg. Delay (sec.) AM/PM	LOS AM/PM	Change in Delay (sec.) AM/PM	Project % of Entering Volume AM/PM	Phase I Traffic to Critical Movements AM/PM	
	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS						
25. Olympic Parkway / Eastlake Parkway	22.9	C	22.6	C	22.0 / 22.1	C / C		10.1% / 9.4%		No
26. Olympic Parkway / Hunte Parkway	21.6	C	22.4	C	19.6 / 20.0	B / C		16.2% / 16.2%		No
27. Olympic Parkway / Olympic Vista Road	18.7	B	19.0	B	18.7 / 19.0	B / B		31.8% / 33.3%		No
28. Olympic Parkway / Wueste Road	5.3	A	9.6	A	4.8 / 9.6	A / A		36.5% / 37.5%		No
29. Lake Crest Drive / Wueste Road	13.5	B	11.9	B	12.3 / 7.7	B / A		75.5% / 69.9%		No
30. Main Street / SR-125 SB Ramps	Does Not Exist									
31. Main Street / SR-125 NB Ramps	Does Not Exist									
32. Main Street / Eastlake Parkway	Does Not Exist									
33. Otay Valley Road / SR-125 SB Ramps	Does Not Exist									
34. Otay Valley Road / SR-125 NB Ramps	Does Not Exist									
35. Otay Mesa Road / La Media Road (SD)	48.7	D	40.7	D	45.0 / 38.3	D / D	8.5 / 7.0			No
36. Otay Mesa Road / SR-125 SB Ramps (SD)	1.8	A	1.5	A	1.7 / 1.5	A / A	0.2 / 1.1			No
37. Otay Mesa Road / SR-125 NB Ramps (SD)	0.4	A	1.1	A	0.4 / 1.1	A / A	0.1 / 0.7			No

TABLE 6.1
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (BUILDOUT) CONDITIONS

Intersection	Existing + Project (Buildout)				Existing		Impact Criteria by Jurisdiction			Significant Impact?
							Caltrans/ San Diego	Chula Vista	County	
	AM Peak Hour		PM Peak Hour		Avg. Delay (sec.) AM/PM	LOS AM/PM	Change in Delay (sec.) AM/PM	Project % of Entering Volume AM/PM	Phase I Traffic to Critical Movements AM/PM	
	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS						
38. Otay Mesa Road / Ellis Road (County)	Does Not Exist									
39. SR-94 / Melody Road (County)	13.3	B	17.7	C	13.3 / 17.7	B / C	0.0 / 0.0		EBL: +0 / +0	No
40. SR-94 / Maxfield Road (County)*	16.2	C	23.4	C	12.9 / 20.4	B / C	3.3 / 3.0		EBL: +0 / +0	No
41. SR-94 / Jefferson Road (County)	13.1	B	12.4	B	12.9 / 12.2	B / B	0.2 / 0.2		SBL: +6 / +14	No
42. Otay Lakes Road @ Project Driveway #1 (County)	7.7	A	6.6	A	Does Not Exist				EBL: +59 / +144	No
43. Otay Lakes Road @ Project Driveway #2[RA] (County)	7.6	A	14.9	B	Does Not Exist				EBL: +384 / +940	No
44. Otay Lakes Road @ Project Driveway #3[RA] (County)	3.6	A	3.8	A	Does Not Exist				EBL: +60 / + 148	No

Source: Chen Ryan Associates; March 2015

Notes:
Bold letter indicates unacceptable LOS E of F.
* For two-way stop controlled intersections, the delay shown is the worst delay experienced by any of the approaches.
[1] For purposes of comparison, a "project-specific" impact in the City of Chula Vista is comparable to a "direct" impact as defined by the County of San Diego.
RA = Roundabout. Rodel software is utilized for the peak hour operational analysis.

Roadway Segment Analysis

Tables 6.2A and **6.2B** display the Level of Service analysis results for key roadway segments under Existing Plus Project (Buildout) conditions in the City of Chula Vista and in the County of San Diego, respectively. As shown, five (5) roadway segments in the City of Chula Vista would operate at an unacceptable LOS D, E or F under Existing Plus Project (Buildout) conditions:

- Telegraph Canyon Rd, between Oleander Ave and Medical Center Dr (LOS E, City of CV) – Proposed buildout project trips would comprise 3.8% (less than 5%) of the total segment volume, and would add 2,196 ADT (more than 800 ADT). However, the intersections of Telegraph Canyon Road / Oleander Avenue and Telegraph Canyon Road / Medical Center Drive are both projected to operate at an acceptable LOS B during the peak hours. Thus, the project would not have a significant impact to this roadway segment.
- Otay Lakes Rd, between East H St and Telegraph Canyon Rd/Otay Lakes Rd (LOS D, City of CV) – Proposed buildout project trips would comprise 3.7% (less than 5%) of the total segment volume, and would add 1,098 ADT (more than 800 ADT). However, the intersections of East H Street / Otay Lakes Road and Telegraph Canyon Road / Otay Lakes Road/La Media Road are projected to operate at an acceptable LOS D during the peak hours. Thus, the project would not have a significant impact to this roadway segment.
- Otay Lakes Rd, between SR-125 SB Ramps and SR-125 NB Ramps (LOS D, City of CV) – Proposed buildout project trips would comprise 10.2% (more than 5%) of the total segment volume, and would also add 5,270 ADT (more than 800 ADT) to this roadway segment. However, the intersections of Otay Lakes Road / SR-125 SB Ramps and Otay Lakes Road / SR-125 NB Ramps are projected to operate at an acceptable LOS C during the peak hours. Thus, the project would not have a significant impact to this roadway segment.
- Otay Lakes Rd, between Lake Crest Dr and Wueste Rd (LOS F, City of CV) – Proposed buildout project trips would comprise 86.0% (more than 5%) of the total segment volume, and would also add 16,310 ADT (more than 800 ADT) to this roadway segment. Additionally, the intersection of Otay Lakes Road / Wueste Road is projected to operate at unacceptable LOS E during the PM peak hour, thus the project would have a significant project specific (direct) impact to this roadway segment.
- Otay Lakes Rd, between Wueste Rd and the City of Chula Vista/County boundary (LOS F, City of CV) – Proposed project trips would comprise 87.0% (more than 5%) of the total segment volume, and would also add 19,540 ADT (more than 800 ADT) to this roadway segment. Additionally, the intersection of Otay Lakes Road / Wueste Road is projected to operate at unacceptable LOS E during the PM peak hour, thus the project would have a significant project specific (direct) impact to this roadway segment.

Based upon the significant impact criteria described in Section 2.8, the addition of trips generated by the Buildout of the project, would have a significant impact to two (2) of the roadway segments analyzed.

TABLE 6.2A
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (BUILDOUT) CONDITIONS
(City of Chula Vista)

Roadway	Segment	Cross-Section	ADT	LOS Threshold (LOS C)	LOS w/ Project	Project Contribution ≥ 5%?	Project ADT > 800?	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
Proctor Valley Rd	Lane Ave to Hunte Pkwy	6-Ln w/ RM	15,033	50,000	A				No
Telegraph Canyon Rd	I-805 SB Ramps to I-805 NB Ramps	7-Ln w/ RM	56,125	70,000	B				No
	I-805 NB Ramps to Oleander Ave		61,811		C				No
	Oleander Ave to to Medical Center Dr	6-Ln w/ RM	57,972	50,000	**E**	3.8%	2,196	Yes	No
	Medical Center Dr to Paseo Ladera		49,901		C				No
	Paseo Ladera to Paseo Ranchero / Heritage Rd		47,039		C				No
	Paseo Ranchero / Heritage Rd to La Media Rd		38,569		B				No
Otay Lakes Rd	East H St to Telegraph Canyon Rd/Otay Lakes Rd	4-Ln w/ RM	30,010	30,000	**D**	3.7%	1,098	Yes	No
	La Media Rd to Rutgers Ave	6-Ln w/ RM	46,973	50,000	C				No
	Rutgers Ave to SR-125 SB Ramps		46,762		C				No
	SR-125 SB Ramps to SR-125 NB Ramps	6-Ln w/ RM	51,676	50,000	**D**	10.2%	5,270	Yes	No
	SR-125 NB Ramps to Eastlake Pkwy	7-Ln w/ RM	47,318	70,000	A				No

TABLE 6.2A
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (BUILDOUT) CONDITIONS
(City of Chula Vista)

Roadway	Segment	Cross-Section	ADT	LOS Threshold (LOS C)	LOS w/ Project	Project Contribution ≥ 5%?	Project ADT > 800?	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
Otay Lakes Rd	Eastlake Pkwy to Lane Ave	6-Ln w/ RM	33,959	50,000	A				No
	Lane Ave to Fenton St		27,615		A				No
	Fenton St to Hunte Pkwy		27,627		A				No
	Hunte Pkwy to Woods Dr		23,282		A				No
	Woods Dr to Lake Crest Dr		22,256		A				No
	Lake Crest Dr to Wueste Rd	2-Ln	18,464	7,500	**F**	85.6%	15,810	No	**Yes**
	Wueste Road to City of CV/County boundary		22,467		**F**	86.9%	19,540	No	**Yes**
Olympic Pkwy	La Media Rd to E Palomar St	6-Ln w/ RM	33,632	50,000	A				No
	E Palomar St to SR-125 SB Ramps		35,798		A				No
	SR-125 SB Ramps to SR-125 NB Ramps		39,691		B				No
	SR-125 NB Ramps to Eastlake Pkwy	8-Ln w/ RM	46,800	70,000	A				No
	Eastlake Pkwy to Hunte Pkwy	6-Ln w/ RM	21,339	50,000	A				No
	Hunte Pkwy to Olympic Vista Rd	4-Ln w/ RM	13,449	30,000	A				No
	East of Olympic Vista Rd		7,588		A				No
Lane Ave	Proctor Valley Rd to Otay Lakes Rd	4-Ln w/ TWLTL	11,682	22,000	A				No

TABLE 6.2A
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (BUILDOUT) CONDITIONS
(City of Chula Vista)

Roadway	Segment	Cross-Section	ADT	LOS Threshold (LOS C)	LOS w/ Project	Project Contribution ≥ 5%?	Project ADT > 800?	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
Hunte Pkwy	Proctor Valley Rd to Otay Lakes Rd	4-Ln w/ RM	7,367	30,000	A				No
	Otay Lakes Rd to Clubhouse Dr		14,410		A				No
	Clubhouse Dr to Olympic Pkwy	4-Ln w/ RM	11,009	30,000	A				No
	Olympic Pkwy to Eastlake Pkwy	6-Ln w/ RM	2,893	50,000	A				No

Source: Chen Ryan Associates; March 2015

Notes:
Bold letter indicates unacceptable LOS D, E or F.
RM = Raised Median.
TWLTL = Two-Way Left-Turn Lane.

TABLE 6.2B
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (BUILDOUT) CONDITIONS
(County of San Diego)

Roadway	Segment	Cross-Section	ADT	LOS Threshold (LOS D)	LOS w/ Project	LOS w/o Project	Significant Impact?
Otay Lakes Rd	City of CV/County boundary to Driveway #1	4-Ln w/ RM	22,467	27,000	C	B	No
	Driveway #1 to Driveway #2		20,717		B	B	No
	Driveway #2 to Driveway #3	2-Ln	7,099	10,900	C	B	No
	Driveway #3 to SR-94		5,347		C	B	No

Source: Chen Ryan Associates; March 2015

Note: Bold letter indicates unacceptable LOS E or F.

Freeway/State Highway Segment Analysis

The freeway/state highway segment Level of Service analysis was performed utilizing the methodology presented in Chapter 2.0. **Table 6.3** displays the resulting Level of Service for I-805 and SR-125 under Existing Plus Project (Buildout) conditions. As shown, all study I-805 freeway segments would continue to operate at an acceptable LOS D or better under Existing Plus Project (Buildout) conditions. The addition of trips generated by full development of the project would not cause any significant traffic impacts to study area freeway/state highway segments.

Two-Lane Highway Segment Analysis

Tables 6.4A and **6.4B** display two-lane highway Level of Service analysis results for SR-94 under Existing Plus Project (Buildout) conditions. This analysis was performed utilizing both the County of San Diego and Caltrans (same as *HCM 2000*) methodologies. The two-lane highway HCM analysis worksheets are included in **Appendix L**.

TABLE 6.3
FREEWAY/STATE HIGHWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (BUILDOUT) CONDITIONS

Freeway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	% of Heavy Vehicle	Volume (pc/h/ln)	V/C	LOS w/ Project	Change in V/C (compare to Existing)	Significant Impact?
I-805	Bonita Road to East H Street	208,000	7.1%	14,747	0.52	5M*	0.95	7.0%	1,678	0.699	C	0.009	No
	East H Street to Telegraph Canyon Road	193,000	7.1%	13,684	0.52	5M*	0.95	7.0%	1,558	0.649	C	0.009	No
	Telegraph Canyon Road to Olympic Parkway	151,200	7.1%	10,720	0.52	4M+1Aux*	0.95	7.0%	1,351	0.563	B	0.000	No
	Olympic Parkway to Main Street	141,700	7.1%	10,047	0.52	4M+1Aux*	0.95	7.0%	1,264	0.527	B	0.000	No
SR-125	SR-54 to Mt. Miguel Road	19,500	7.0%	1,365	0.58	2M	0.95	10.3%	443	0.185	A	0.019	No
	Mt Miguel Road to Proctor Valley Road	17,600	7.0%	1,232	0.58	2M	0.95	10.3%	398	0.166	A	0.014	No
	Proctor Valley Road to Otay Lakes Road	13,900	7.0%	973	0.58	2M	0.95	10.3%	310	0.129	A	0.009	No
	Otay Lakes Road to Olympic Parkway	5,100	7.0%	357	0.58	2M	0.95	10.3%	111	0.046	A	0.000	No
	Olympic Parkway to Birch Road	6,500	7.0%	455	0.58	2M	0.95	10.3%	144	0.060	A	0.018	No
	Birch Road to Main Street	6,800	7.0%	476	0.58	2M	0.95	10.3%	155	0.065	A	0.023	No
	Main Street to Otay Valley Road	6,800	7.0%	476	0.58	2M	0.95	10.3%	155	0.065	A	0.023	No
	Otay Valley Road to Lone Star Road	6,800	7.0%	476	0.58	2M	0.95	10.3%	155	0.065	A	0.023	No
	Lone Star Road to Otay Mesa Road	6,800	7.0%	476	0.58	2M	0.95	10.3%	155	0.065	A	0.023	No
	Otay Mesa Road to SR-905	Does Not Exist											

Source: Chen Ryan Associates; March 2015

Notes:
*2 new HOV lanes have been constructed very recently, however freeway ADT information is not available for these HOV lanes. The existing conditions analysis is based on pre HOV freeway geometrics and traffic volumes. This should represent the worst case scenario.
M = Mainline.
Aux = Auxiliary Lane.

TABLE 6.4A
2-LANE HIGHWAY SEGMENT LEVEL OF SERVICE RESULTS
COUNTY OF SAN DIEGO LOS CRITERIA
EXISTING PLUS PROJECT (BUILDOUT) CONDITIONS

Highway	Segment	LOS Threshold (LOS D)	ADT	LOS w/ Project	LOS w/o Project	Significant Impact?
SR-94	Lyons Valley Road to Jefferson Road	16,200	10,996	D or better	D or better	No
	Jefferson Road to Maxfield Road		9,488	D or better	D or better	No
	Maxfield Road to Melody Road		8,684	D or better	D or better	No
	Melody Road to Otay Lakes Road		8,045	D or better	D or better	No
	South of Otay Lakes Road		8,600	D or better	D or better	No

Source: Chen Ryan Associates; March 2015

TABLE 6.4B
2-LANE HIGHWAY SEGMENT LEVEL OF SERVICE RESULTS
CALTRANS AND HCM METHODOLOGY
EXISTING PLUS PROJECT (BUILDOUT) CONDITIONS

Highway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	%HV	Volume (pc/h/ln)	Speed (mph)	LOS w/ Project	LOS w/o Project	Significant Impact?
SR-94	Melody Road to Otay Lakes Road	8,405	8.9%	716	0.67	1	0.92	5.0%	547	48.4	C	C	No
	South of Otay Lakes Road	7,842	8.4%	655	0.67	1	0.96	5.0%	481	48.9	C	C	No

Source: Chen Ryan Associates; March 2015

As shown in Table 6.4A, SR-94, from Lyons Valley Road to south of Otay Lakes Road, would operate at an acceptable LOS D or better based on County of San Diego LOS criteria. The addition of trips generated by full development of the project would not cause any significant traffic impacts to SR-94 based on County of San Diego LOS criteria.

As shown in Table 6.4B, the segment of SR-94 from Melody Road to south of Otay Lakes Road would operate at an acceptable LOS C based on Caltrans/HCM methodology. The addition of trips generated by full development of the project would not cause any significant traffic impacts to SR-94 based on Caltrans/HCM two-lane highway analysis methodology. Note that the segment of SR-94 north of Melody Road was not analyzed since the proposed project would not add 50 or more peak hour trips in either direction of SR-94.

Ramp Intersection Capacity Analysis

Consistent with Caltrans requirements, the signalized freeway ramp intersections along I-805 at Telegraph Canyon Road and along SR-125 at various interchanges were analyzed under Existing Plus Project (Buildout) conditions using the ILV procedures as described in Chapter 2.0. ILV analysis results are displayed in **Table 6.5** and analysis worksheets for the Existing Plus Project (Buildout) conditions are provided in **Appendix M**.

TABLE 6.5
RAMP INTERSECTION CAPACITY ANALYSIS
EXISTING PLUS PROJECT (BUILDOUT) CONDITIONS

Ramp Intersection	Peak Hour	ILV / Hour	Description
I-805 SB Ramps / Telegraph Canyon Road	AM	1,410	*1200-1500: (At Capacity)*
	PM	1,751	*>1500: (Over Capacity)*
I-805 NB Ramps / Telegraph Canyon Road	AM	1,432	*1200-1500: (At Capacity)*
	PM	1,226	*1200-1500: (At Capacity)*
SR-125 SB Ramps / Otay Lakes Road	AM	998	*<1200: (Under Capacity)*
	PM	1,356	*1200-1500: (At Capacity)*
SR-125 NB Ramps / Otay Lakes Road	AM	944	*<1200: (Under Capacity)*
	PM	1,281	*1200-1500: (At Capacity)*
SR-125 SB Ramps / Olympic Parkway	AM	760	*<1200: (Under Capacity)*
	PM	1,060	*<1200: (Under Capacity)*
SR-125 NB Ramps / Olympic Parkway	AM	756	*<1200: (Under Capacity)*
	PM	1,136	*<1200: (Under Capacity)*
SR-125 SB Ramps / Main Street	AM	Does Not Exist	
	PM		
SR-125 NB Ramps / Main Street	AM	Does Not Exist	
	PM		

TABLE 6.5
RAMP INTERSECTION CAPACITY ANALYSIS
EXISTING PLUS PROJECT (BUILDOUT) CONDITIONS

Ramp Intersection	Peak Hour	ILV / Hour	Description
SR-125 SB Ramps / Otay Valley Road	AM	Does Not Exist	
	PM		
SR-125 SB Ramps / Otay Valley Road	AM	Does Not Exist	
	PM		
SR-125 SB Ramps / Otay Mesa Road	AM	614	*<1200: (Under Capacity)*
	PM	344	*<1200: (Under Capacity)*
SR-125 SB Ramps / Otay Mesa Road	AM	325	*<1200: (Under Capacity)*
	PM	679	*<1200: (Under Capacity)*

Source: Chen Ryan Associates; March 2015

As shown in the table, similar to Existing Conditions (Table 3.5), both I-805 ramp intersections at Telegraph Canyon Road would continue to operate at "At Capacity" and/or "Under Capacity", with the exception of the I-805 SB Ramps / Telegraph Canyon Road intersection which would operate at "Over Capacity" during the PM peak hour. All of the SR-125 ramp intersections within the study area would operate at "At Capacity" and/or "Under Capacity" during both the AM and PM peak hours under the Existing Plus Project (Buildout) conditions.

Ramp Metering Analysis

Table 6.6 displays the ramp metering analysis conducted at the I-805 NB On-Ramp at Telegraph Canyon Road under Existing Plus Project (Buildout) conditions. Similar to the Existing conditions, it is assumed that approximately 80% of the total arrival traffic would utilize the two non-HOV lanes.

TABLE 6.6
RAMP METERING ANALYSIS
EXISTING PLUS PROJECT (BUILDOUT) CONDITIONS

Location	Peak Hour	Demand[1] (veh/hr)	Meter Rate[2] (veh/hr)	Excess Demand[3] (veh/hr)	Delay w/ Project[4] (min)	Queue[5] (ft)	Delay w/o Project (min)	Significant Impact?
I-805 NB On-Ramp @ Telegraph Canyon Road	AM	1,964	1,824	140	4.6	2,025	1.8	No

Source: Chen Ryan Associates; March 2015

Notes:
1. Demand is the peak hour demand expected to use the on-ramp.
2. Meter Rate is the peak hour capacity expected to be processed through the ramp meter. This value was obtained from Caltrans.
3. Excess Demand = (Demand) – (Meter Rate) or zero, whichever is greater.
4. Delay = (Excess Demand / Meter Rate) X 60 min/hr.
5. Queue (Per Ramp Lane) = (Excess Demand) X 29 ft/veh/# of non-HOV lanes.

As shown in Table 6.6, AM peak hour demands at the NB On-Ramp would be greater than the capacity provided by the ramp meter under Existing Plus Project (Buildout) conditions. However, based upon SANTEC/ITE Guidelines, the projected delay of 4.6 minutes (less than 15 min.) would be acceptable. Therefore, the project would not result in any significant impact at this on-ramp.

Recommended Mitigation

This section identifies required mitigation measures for intersection and roadway facilities that would be significantly impacted by project-related traffic under Existing Plus Project (Buildout) conditions.

Intersections

The proposed project would have a direct impact on one (1) intersection in the City of Chula Vista. The following intersection improvements would be required to mitigate the identified traffic impact:

- *Otay Lakes Road / Wueste Road* – Signalization by the 1,500th ~~residential unit~~EDU would be required at this intersection to mitigate project impacts. Note that a westbound left-turn lane, a westbound through lane, as well as an additional eastbound through lane, would have already been constructed by the 910th ~~residential unit~~EDU as a part of the roadway mitigation. A traffic signal warrant was conducted, and based upon *MUTCD 2012 Figure 4C-103 (CA),* this intersection would satisfy both the "Minimum Vehicular Traffic" and "Interruption of Continuous Traffic" warrants. The signal warrant worksheet is provided in **Appendix N**.

Table 6.7 displays Level of Service analysis results for the mitigated intersection under Existing Plus Project Buildout conditions. Calculation worksheets for the intersection analysis are provided in **Appendix O**.

TABLE 6.7
MITIGATED INTERSECTION LEVEL OF SERVICE
EXISTING PLUS PROJECT (BUILDOUT) CONDITIONS

Intersection	Before Mitigation				After Mitigation			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Avg. Delay (Sec.)	LOS	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS
Otay Lakes Road / Wueste Road	15.5	C	43.6	**E**	8.4	A	8.7	A

Source: Chen Ryan Associates; March 2015

Note: Bold letter indicates unacceptable LOS E or F.

As shown in Table 6.7, after implementation of the identified improvements, the impacted intersection would operate at an acceptable LOS A during both the AM and PM peak hours.

The improvement identified above to the Otay Lakes Road / Wueste Road intersection is consistent with the City of Chula Vista's Circulation Element and would not conflict with the City's long-range and ultimate build-out plans or programs.

If implemented, the mitigation improvements would fully mitigate the Project's project specific (direct) impact to the intersection of Otay Lakes Road and Wueste Road. However, because the necessary improvements would be constructed within the City of Chula Vista and, therefore, are outside of the County's jurisdiction and control, the County cannot assure that the City will permit implementation of the improvements. Therefore, although mitigation in the form of road widening has been identified to reduce the corresponding impacts to less than significant, and the Project applicant would implement the improvements consistent with the mitigation requirements, for purposes of CEQA and this TIA, the impact to the intersection of Otay Lakes Road and Wueste Road is considered significant and unavoidable until such time as the City concurs with the mitigation. In addition, the City of Chula Vista does not consider impacts to its facility under the Existing Plus Project conditions to be realistic impacts when used in connection with a long-range development project such as the proposed Resort Village project, which is not anticipated to reach full buildout until approximately 2025. The analysis of the project's potential impacts as measured against the existing conditions baseline that follows is presented for disclosure, information and comparison purposes only for facilities in Chula Vista. The identification of the project's significant impacts, with recommended mitigation, will be based on the future year analyses that take into account cumulative traffic growth, as well as the changing roadway network and land uses that accompany a long-range development project such as this. Therefore the EDU trigger identified above is provided only for information purpose.

Roadway Segments

The proposed project would have a direct impact on two (2) roadway segment located in the City of Chula Vista under Existing Plus Project (Buildout) conditions. The following roadway improvements would be required to mitigate these impacts:

- Otay Lakes Road, between Lake Crest Drive and Wueste Road (City of CV) – widen from 2-lane to 4-lane (4-lane Major with Raised Median), including construction of an additional westbound left-turn lane by the 910th ~~residential unit~~EDU. This significantly impacted roadway segment would operate at LOS B with the roadway widening.

  The improvement to Otay Lakes Road identified above is consistent with the City of Chula Vista's Circulation Element. The Circulation Element identifies this segment as a 6-Lane Prime Arterial. Widening the segment from the current two-lane configuration to four lanes, as recommended by the mitigation measure, would not conflict with the City's long-range road widening plans (six lanes) because the mitigation improvements (widen from two to four lanes) do not foreclose or conflict with the City's ultimate build-out plans or programs.

  If implemented, the mitigation improvements would fully mitigate the Project's project-specific (direct) impacts to the segment of Otay Lakes Road between Lake Crest Drive and

Wueste Road. However, because the necessary improvements would be constructed within the City of Chula Vista and, therefore, are outside of the County's jurisdiction and control, the County cannot assure that the City will permit implementation of the improvements. Therefore, although mitigation in the form of road improvements has been identified to reduce the corresponding impacts to less than significant, and although the Project applicant would implement the improvements consistent with the mitigation requirements, for purposes of CEQA and this Draft EIR, the impacts to Otay Lakes Road between Lake Crest Drive and Wueste Road are considered significant and unavoidable until such time as the City concurs with the mitigation. In addition, the City of Chula Vista does not consider impacts to its facility under the Existing Plus Project conditions to be realistic impacts when used in connection with a long-range development project such as the proposed Resort Village project, which is not anticipated to reach full buildout until approximately 2025. The analysis of the project's potential impacts as measured against the existing conditions baseline that follows is presented for disclosure, information and comparison purposes only for facilities in Chula Vista. The identification of the project's significant impacts, with recommended mitigation, will be based on the future year analyses that take into account cumulative traffic growth, as well as the changing roadway network and land uses that accompany a long-range development project such as this. Therefore the EDU trigger identified above is provided only for information purpose.

- Otay Lakes Road, between Wueste Road and the City of Chula Vista/County boundary (City of CV) – widen from 2-lane to 4-lane by the 728th ~~residential unit~~EDU (as identified under the Existing Plus Project (Phase 1) scenario). This significantly impacted roadway segment would operate at LOS B with the roadway widening.

  The improvement to Otay Lakes Road identified above is consistent with the City of Chula Vista's Circulation Element. The Circulation Element identifies this segment as a 6-Lane Prime Arterial. Widening the segment from the current two-lane configuration to four lanes, as recommended by the mitigation measure, would not conflict with the City's long-range road widening plans (six lanes) because the mitigation improvements (widen from two to four lanes) do not foreclose or conflict with the City's ultimate build-out plans or programs.

  If implemented, the mitigation improvements would fully mitigate the Project's project specific (direct) impact to the segment of Otay Lakes Road, between Wueste Road and the City of Chula Vista/County boundary. However, because the necessary improvements would be constructed within the City of Chula Vista and, therefore, are outside of the County's jurisdiction and control, the County cannot assure that the City will permit implementation of the improvements. Although mitigation in the form of road widening has been identified to reduce the corresponding impacts to less than significant, and the Project applicant would implement the improvements consistent with the mitigation requirements, for purposes of CEQA and this TIA, the impact to Otay Lakes Road, between Wueste Road and the City of Chula Vista/County boundary is considered significant and unavoidable until such time as the City concurs with the mitigation. In addition, the City of Chula Vista does not consider impacts to its facility under the Existing Plus Project

conditions to be realistic impacts when used in connection with a long-range development project such as the proposed Resort Village project, which is not anticipated to reach full buildout until approximately 2025. The analysis of the project's potential impacts as measured against the existing conditions baseline that follows is presented for disclosure, information and comparison purposes only for facilities in Chula Vista. The identification of the project's significant impacts, with recommended mitigation, will be based on the future year analyses that take into account cumulative traffic growth, as well as the changing roadway network and land uses that accompany a long-range development project such as this. Therefore the EDU trigger identified above is provided only for information purpose.

Freeways/State Highways

None of the study area freeway/state highway facilities would be significantly impacted, and therefore, no mitigation measures would be required under Existing Plus Project (Buildout) conditions.

Two-Lane Highways

None of the study area two-lane highway facilities would be significantly impacted, and therefore no mitigation measures would be required under Existing Plus Project (Buildout) conditions.

Ramp Metering

The I-805 NB On-Ramp at Telegraph Canyon Road would not be significantly impacted, and therefore no mitigation measures would be required under Existing Plus Project (Buildout) conditions.

7.0 Cumulative Traffic Conditions

This section describes cumulative land development projects anticipated to generate additional traffic within the study area. Potential traffic impacts to the existing transportation network, due to the addition of cumulative projects and proposed project traffic, were also assessed.

7.1 Cumulative Project Traffic

SANDAG's Series 11 Year 2025 Transportation Model was utilized to forecast cumulative (Year 2025) traffic volumes. The most recent and City of Chula Vista approved model (developed for the Otay Ranch Village Two Comprehensive SPA Amendment project) was utilized as a starting point to ensure the accuracy of the modeling assumptions within the City's jurisdiction. Land use assumption for the Otay Ranch Village Two Comprehensive SPA Amendment project model was developed in coordination with City of Chula Vista's staff. This land use includes an estimated growth for all of the Otay Ranch villages, as well as the future university, the eastern urban center, and other developments. Year 2025 model land use assumption are provided in Appendix F.

Outside of Chula Vista, SANDAG Year 2025 land use assumptions were examined and updated to ensure that anticipated land development projects identified by both the County and City of San Diego in the vicinity of the proposed project were accurately reflected in the model. Field review was conducted by Chen Ryan staff to verify that cumulative projects fully occupied and operational as of May 2014 are not included as a part of the cumulative (year 2025) model, as their traffic would already be included in the Existing Conditions.

Table 7.1 displays the approved and pending project list in East Otay Mesa by the Year 2025, which was incorporated in the SANDAG transportation model.

TABLE 7.1
APPROVED / PENDING PROJECTS IN EAST OTAY MESA

No.	Project Name	Location	Description
County of San Diego			
1	National Enterprises Storage and Recycling Facility (MUP98-001)	East and west side of Alta Rd north of Old Otay Mesa Rd	The project proposes to develop areas for interim use including automobile storage, scrap and recycling operations, and wood and green material recycling, and will include temporary office trailers of 720 s.f. each and 200 employee parking spaces. Project would provide space for approximately 11,000 vehicles.
2	Travel Plaza Truck Stop (TPM 20414; MUP 98-024)	East side of Enrico Fermi Drive north of Airway Rd and south of Old Otay Mesa	Four parcels, ranging from 7.35 to 42.16 acres each. Full-service truck stop travel plaza. Driver facilities, restaurant, convenience store, service bays, fuel sales,

TABLE 7.1
APPROVED / PENDING PROJECTS IN EAST OTAY MESA

No.	Project Name	Location	Description
			122-room hotel, office building, parking.
3	Otay Tech Centre - Previously Sunroad Tech Centre (TM 5139)	Northeast of Otay Mesa Rd and Harvest Road	Technology business park and commercial retail on 289.5 gross acres.
4	Enrico Fermi Industrial (TM 5394)	Southwest corner of Old Otay Mesa Rd and Enrico Fermi Drive	79.37 acres of industrial development
5	Aron Construction Auto Auction Park (MUP00-012)	Northwest corner of Old Otay Mesa Rd and Alta Rd.	38.2 acres
6	Airway Business Centre-(Saeed Industrial TM5304)	North side of Airway Drive between Michael Faraday Drive and Pasea de las	35 acres
7	PG&E Subdivision/Otay Mesa Generating Plant (TPM 2057)	East of Alta Rd. btw Loop Rd and Energy Centre Way	Natural gas-fired electric generating plan
8	Otay Mesa Generating Plant Industrial Outlots	East of Alta Rd, btw Loop Rd and Energy Centre Way	30.60 acres of industrial uses
9	Otay Hills Mineral Extraction (MUP04-004/RP04-001)	Eastern extension of Old Otay Mesa, 2.5 miles northeast of Otay Mesa crossing	Hard rock quarry on 210 acres
10	Rowland Property (MUP 03-001)	Northeast corner of Old Otay Mesa Road and Enrico Fermi Drive	Auto-storage and wrecking yard located on 40.44 acres
11	Otay 310	South of Old Otay Mesa Rd, east of Alta Rd.	311 acres mixed industrial, rural residential and SR11
12	Correctional Facility (Proposed Project)	West of Alta Rd near existing prison facility	2,112 Bed Correctional Detention Facility
13	Otay Business Park (Paragon)	South of Airway Rd, east of Enrico Fermi Drive	2202.8 KSF Business Park on 161.6 gross acres
14	Otay Logistics Industrial Park	East of Enrico Fermi Dr, BTW Airway Rd & Siempre Viva Rd.	277 ksf of warehousing
15	California Crossing (40 acres Commercial)	East of SR-125, north of Otay Mesa Road, west of Harvest Rd.	28.50 net acres of Community Shopping Center
16	Pilot Travel Centre	North quadrant of Piper Ranch & Otay Mesa Rd.	Construction of a 10,000-sq. ft. commercial center including Wendy's restaurant and driver amenities, gas station and parking (71 car and 139 truck spaces). 65 employees (18 – 20 per shift).
17	Piper Otay Park	Northeast quadrant of Piper Ranch & Otay Mesa Rd	25 gross acres (19.8 net acres) of light industrial use.
18	Donovon Health Facility	480 Alta Road	15 bed facility with approx. 1,200 staff and 75-100 visitors anticipated per day
19	International Industrial Park (TM 5549)	The project site is located in the East Otay Mesa Specific Plan Area, part of the Otay Subregional Planning Area, within	133 acres of Technology/Business Park

TABLE 7.1
APPROVED / PENDING PROJECTS IN EAST OTAY MESA

No.	Project Name	Location	Description
		unincorporated San Diego County. Parcels 1-5 would be accessed via Vann Centre Blvd. Parcel 7-10 would take access off Enrico Fermi Road.	
20	RTX (S08-022).	Immediately south of Via de la Amistad, east of Enrico Fermi Drive	18.75 acres of Truck Park and Storage
21	Jamul Casino	Southwest quadrant of SR-94 / Melody Road	Casino (unique land use)
City of San Diego			
21	California Terraces	North of Otay Mesa Rd, off of Ocean View Hills Pkwy	Phase I = 644 MF dus, Phase II = 1585 dus, 2.4 acres commercial
22	La Media Truck Park site	Northeast corner of La Media Road & Lonestar	Industrial use (approx 70 acres)
23	Robinhood Ridge	West side of Otay Valley Road/Heritage Road north of Otay Mesa Road	3.8 acres of neighborhood commercial, 4.6 acres of light industrial
24	La Media Truck Park II	East side of La Media Road north of Windstock Street	40 acres
25	World Petrol III	North of Otay Mesa Rd, east of La Media	22 fuelling stations, 3632 sf convenience market, 2041 restaurant, 290 sf office
26	Ingalls Property	South of Vista Santo Domingo	13 SF dus, 24 townhomes, 106 apts, 19700 sf office, 20396 sf retail, 39450 industrial
27	Otay Corporate Centre N; Otay Corporate Centre S	North and south of Otay Mesa Rd, west of Heritage Rd.	industrial park
28	San Ysidro High School (Expansion)	Southwest corner of Airway Rd & Caliente Ave	High School for 814 students
29	Semi-Trailer Storage Facility (Planned Development permit 12083)	Southwest corner of Otay Mesa Road and Inovative Drive	8.02 net acres
30	Southwestern Junior College	North of Airway Rd, btw Britannia & La Media	500 Students Higher Education Center
31	Sunroad Otay Park (TM 91-0394)	South of Otay Mesa Road and west of La Media	1,337,000 square feet of Small Industrial Park, 79.3 acres
32	Esplande	Northeast of Airway Rd & La Media Road	1,337 SF dus on 77.6 Acres
33	Interstate Industrial Centre (TPM 98-0759)	East side of Piper Ranch Road, South of Otay Mesa Road	453,000 square feet of Warehousing
34	Handler Otay Mesa	South off Otay Mesa Rd, west of Corporate Centre Dr	mixed commercial/retail/office project
35	Pardee Commercial	Southeast corner of Otay Mesa Rd/Palm Ave	16 acre commercial

TABLE 7.1
APPROVED / PENDING PROJECTS IN EAST OTAY MESA

No.	Project Name	Location	Description
36	Candlelight Villas West	West side of Caliente Ave, south of San Ysidro High School	223 MF dus on 23 Acres
37	Southview	Southeast of Caliente Ave and Airway Rd.	553 MF dus
38	Candlelight	Southeast of Caliente Ave and Airway Rd.	435 MF dus
39	Brownfield Tech park	South of Otay Mesa Rd, west of Britannia Blvd.	741180 SF of business park on 50 acres
40	Las Californias	South of Siempre Viva Rd, btw Britannia & La Media	374,300 sq ft small industrial park, 305,90 sq ft large industrial park

Source: County of San Diego, City of San Diego, Chen Ryan Associates; March 2015

7.2 Cumulative (Year 2025) Roadway Network and Traffic Volumes

The Cumulative (Year 2025) roadway network was assumed to be identical to the existing plus project (buildout) network with the following exceptions:

- Completion of Heritage Road, between Olympic Parkway and Main Street including the signalization of the intersection of Heritage Road / Main Street. Heritage Road is identified as a Mitigation Measure for multiple projects within the City of Chula Vista including the Village Two Comprehensive SPA Amendment and the University Villages Project (identified as MM TCA-4 in the University Villages FEIR, SCH # 2013071077). It is also a Chula Vista Transportation Development Impact Fee (TDIF) facility (SMT 364 – Facility #57), and identified as a 6-lane Prime Arterial in the Chula Vista General Plan Circulation Plan – East.
- Signalization of the County intersection of SR-94 / Melody Road due to the completion of the Jamul Casino project (Final Tribal Environmental Evaluation – Jamul Indian Village Gaming Development Project / Jamul Indian Village Resolution No. 2013-03).
- Widening of Otay Lakes Road, between H Street and Telegraph Canyon Road from a 4-lane Major Road to a 6-lane Prime Arterial, consistent with the classification identified in the City's currently adopted General Plan Circulation Element. This improvement project (STM355 – Otay Lakes Road Widening) is included in the Chula Vista adopted FY 2012-13 through FY 2016-17 Capital Improvement Program (CIP) and will be funded by the Transportation Development Impact Fees.

Construct by the project for frontage and access:

- Project Driveway #1/Intersection #42 @ Otay Lakes Road – signalized T-intersection;
- Project Driveway #2/Intersection #43 @ Otay Lakes Road – roundabout; and
- Project Driveway #3/Intersection #43 @ Otay Lakes Road – roundabout.

The City of Chula Vista TDIF program was established in Chapter 3.54 of the City's Municipal Code and, specific to the area in the vicinity of the proposed Project was most recently updated in the *Eastern Transportation Development Impact Fee*, City of Chula Vista Public Works Department (September 2014) ("2014 TDIF Update"). Under the City's TDIF program, a development impact fee was established to pay for transportation improvements and facilities within the Eastern Territories of the City of Chula Vista. (Municipal Code section 3.54.010 (A); see also Cal Govt. Code section 66000 et seq.) The Eastern Territories generally means that area of the city located between Interstate 805 on the west, the city sphere of influence boundary on the east and northeast, the city boundary on the north, and the city's southern boundary on the south. (Municipal Code section 3.54.020 (G.)

Under the TDIF program, the fee is paid before the issuance of building permits "for each development project within the Eastern Territories of the City." (Municipal Code section 3.54.010; 2014 TDIF Update, p. 25.) In establishing the TDIF program, the City Council found that collection of the fees at the time of the building permit was "necessary to ensure that funds will be available for the construction of facilities concurrent with the need for those facilities and to ensure certainty in the capital facilities budgeting for the Eastern Territories." (Municipal Code section 3.54.010 (A); see also 2014 TDIF Update, p. 25.)

The Chula Vista TDIF has two main purposes: (1) to fund the construction of facilities needed to mitigate potential direct and cumulative impacts, and (2) to spread the costs associated with construction of the facilities equitably among the developing properties. (2014 TDIF Update, p. 2.) The TDIF is calculated by identifying the total cost of the road improvements to be constructed under the program, and dividing that number by the remaining development to be constructed within the TDIF "Area of Benefit." The recommended fee "is based on an equitable distribution of the estimated cost of the proposed program funding requirements, divided by the number of future EDUs [equivalent dwelling units] to be developed in the Area of Benefit." (2014 TDIF Update, p. 14.)

The Area of Benefit is "the area served by the proposed street projects" determined to be necessary to maintain an acceptable level of service on the City's circulation system as well as completing the city's General Plan Circulation Element east of I-805. (2014 TDIF Update, p. 6.) Importantly, the TDIF Area of Benefit does *not* include the Resort Village/Village 13 Project area. (2014 TDIF Update, Figure 1, Chula Vista Transportation Development Impact Fee Benefit Area.) Furthermore, the "remaining" development identified in the TDIF, which are those as yet unbuilt development projects upon which the TDIF is calculated, also does not include Village 13/Resort Village. (2014 TDIF Update, Table A, p. 9; see also p. 6.) Nonetheless, the projects that *are* included in the 2014 TDIF Update "ensure that the remaining streets in the city's General Plan are fully funded for construction." (2014 TDIF Update, p. 6.)

TDIF-type programs, like the City's, are typically established in such manner that development within each respective TDIF jurisdiction pays for those improvements necessary to accommodate traffic generated both within and outside the jurisdiction through payment of the applicable TDIF. Correspondingly, it is not contemplated that such development would pay TDIF-type fees in adjacent TDIF jurisdictions, even though the Project may cause or contribute to impacts in the

adjacent TDIF jurisdiction. Under this system, development within each respective jurisdiction that has adopted a TDIF-type program provides the necessary funding through payment of the TDIF for road improvements within its respective TDIF jurisdiction, while improvements in adjacent jurisdictions are funded by development in that jurisdiction.

Thus, in a manner similar to Chula Vista, the County has its own Transportation Impact Fee (TIF) program that provides funding for road improvements within the County of San Diego, and the Project applicant will pay the applicable County TIF as part of the County's approval process. (See EIR Mitigation Measures M-TR-11 and M-TR-12. For more information on the County's TIF program, please see *County of San Diego Guidelines for Determining Significance and Report Format and Content Requirements for Transportation and Traffic* (August 24, 2011), Section 2.0, pages 4-6.)

The Otay Ranch Mitigation Monitoring Program (MMP) is consistent with both the City and County fee programs. The MMP was adopted by the County Board of Supervisors on October 28, 1993 in connection with Otay Ranch General Plan Amendment (GPA) 92-04, and is based on the mitigation required to implement the Subregional Plan of the County Recommended Plan for Otay Ranch. (MMP, p. 1.)

In relevant part, the MMP provides: "To the extent that Otay Ranch contributes to the need for a facility outside of its boundaries, the Project shall contribute (at the level at which it impacts the facility) to the mitigation of the impact by participating in impact fee programs or other means identified at the Specific Plan or tentative map level." (MMP, p. 46.) Thus, the MMP recognizes that mitigation would take the form of payments to impact fee programs, as well as "other means."

In this case, to the extent the proposed project would result in significant impacts outside of the Otay Ranch boundaries, the TIA and EIR identify appropriate mitigation both in the form of TIF payments to the County and the installation of specified road improvements within and outside the County that once implemented would reduce the identified impacts to less than significant. (See, Mitigation Measures M-TR-1 through M-TR-12 of the FEIR.)

The Cumulative (Year 2025) roadway and intersection geometrics are displayed in **Figures 7-1A** and **7-1B**, respectively.

Figures 7-2A and **7-2B** show peak hour intersection and average daily roadway volumes for the study intersections and roadway segments, respectively, under Cumulative (Year 2025) conditions. Traffic volumes for the Cumulative (Year 2025) scenario were developed utilizing the SANDAG Series 11 Year 2025 transportation model as described in Section 7.1.

7.3 Cumulative (Year 2025) Traffic Conditions

Analyses were conducted using the methodologies described in Chapter 2.0. Intersection, roadway segment, and freeway/state highway Level of Service results are discussed in the following sections.

Intersection Analysis

Table 7.2 displays intersection Level of Service and average vehicle delay results under Cumulative (Year 2025) traffic conditions. Level of Service calculation worksheets for the Cumulative (Year 2025) traffic conditions are provided in **Appendix P**.

As shown in Table 7.2, all of the study area intersections would operate at acceptable LOS D or better during both the AM and PM peak hours under Cumulative (Year 2025) traffic conditions, with the exception of the following two (2) intersections:

- Otay Lakes Road / Wueste Road (unsignalized, City of CV): This intersection (#20) would operate at unacceptable LOS F during both the AM and PM peak hours with the addition of the project traffic. Based upon the impact criteria discussed in Section 2.8, the additional traffic generated by the buildout of the project would cause a project specific (direct) impact at this intersection since it would comprise 55.1% during the AM peak hour (more than 5%) and 65.6% during the PM peak hour (more than 5%) of the total entering volumes.
- Otay Lakes Road / SR-94 (unsignalized, County): This intersection (#21) would operate at unacceptable LOS E and F during the AM and PM peak hours, respectively. Based upon the impact criteria discussed in Section 2.8, the additional traffic generated by the cumulative projects and the buildout of the project would cause a cumulative impact at this intersection.

TABLE 7.2
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
CUMULATIVE (YEAR 2025) TRAFFIC CONDITIONS

Intersection	Cumulative (Year 2025) + Project (Buildout)				Cumulative (Year 2025) w/o Project		Impact Criteria by Jurisdiction			Significant Impact?
							Caltrans/ San Diego	Chula Vista	County	
	AM Peak Hour		PM Peak Hour							
	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS	Avg. Delay (sec.) AM/PM	LOS AM/PM	Change in Delay (sec.) AM/PM	Project % of Entering Volume AM/PM	Cumulative + Project Traffic to Critical Movements AM/PM	
1. East H Street / Otay Lakes Road	36.9	D	36.2	D	36.4 / 33.6	D / C		1.4% / 1.6%		No
2. Proctor Valley Road / Hunte Parkway	47.8	D	33.5	C	45.5 / 24.6	D / C		1.5% / 3.3%		No
3. Telegraph Canyon Road / I-805 SB Ramps	23.8	C	53.3	D	17.9 / 45.6	B / D	1.8 / 17.9	1.6% / 3.3%		No
4. Telegraph Canyon Road / I-805 NB Ramps	53.3	D	28.1	C	47.9 / 23.9	D / C	7.9 / 2.0	2.7% / 3.3%		No
5. Telegraph Canyon Road / Oleander Avenue	22.3	C	25.9	C	20.8 / 23.8	C / C		3.1% / 3.8%		No
6. Telegraph Canyon Road / Paseo Del Rey	36.6	D	35.8	D	34.8 / 35.4	C / D		3.8% / 4.6%		No
7. Telegraph Canyon Road / Medical Center Drive	15.3	B	20.0	B	14.8 / 18.0	B / B		3.6% / 4.5%		No
8. Telegraph Canyon Road / Paseo Ladera	52.7	D	39.9	D	50.0 / 37.6	D / D		3.8% / 5.2%		No
9. Telegraph Canyon Road / Paseo Ranchero/Heritage Road	39.5	D	51.1	D	37.8 / 46.1	D / D		3.7% / 4.1%		No
10. Telegraph Canyon Road / Otay Lakes Road/La Media Road	49.7	D	50.7	D	43.6 / 40.8	D / D		5.1% / 5.6%		No
11. Otay Lakes Road / Rutgers Avenue	16.6	B	15.7	B	15.6 / 14.8	B / B		8.3% / 8.3%		No

TABLE 7.2
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
CUMULATIVE (YEAR 2025) TRAFFIC CONDITIONS

Intersection	Cumulative (Year 2025) + Project (Buildout)				Cumulative (Year 2025) w/o Project		Impact Criteria by Jurisdiction			Significant Impact?
							Caltrans/ San Diego	Chula Vista	County	
	AM Peak Hour		PM Peak Hour							
	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS	Avg. Delay (sec.) AM/PM	LOS AM/PM	Change in Delay (sec.) AM/PM	Project % of Entering Volume AM/PM	Cumulative + Project Traffic to Critical Movements AM/PM	
12. Otay Lakes Road / SR-125 SB Ramps	6.5	A	11.0	B	6.1 / 9.9	A / A	0.4 / 1.1	11.5% / 11.7%		No
13. Otay Lakes Road / SR-125 NB Ramps	3.2	A	4.7	A	3.0 / 3.8	A / A	0.2 / 0.9	11.4% / 12.1%		No
14. Otay Lakes Road / Eastlake Parkway	39.5	D	36.0	D	32.2 / 31.8	C / C		11.3% / 11.5%		No
15. Otay Lakes Road / Lane Avenue	12.5	B	14.7	B	12.5 / 14.7	B / B		22.4% / 24.0%		No
16. Otay Lakes Road / Fenton Street	9.7	A	17.5	B	8.9 / 17.5	A / B		28.3% / 32.3%		No
17. Otay Lakes Road / Hunte Parkway	31.4	C	42.3	D	30.0 / 27.6	C / C		21.8% / 31.0%		No
18. Otay Lakes Road / Woods Drive	15.9	B	12.5	B	15.9 / 11.1	B / B		44.3% / 47.3%		No
19. Otay Lakes Road / Lake Crest Drive	25.8	C	52.0	D	14.9 / 14.9	B / B		56.8% / 53.3%		No
20. Otay Lakes Road / Wueste Road*	Overflow	**F**	Overflow	**F**	18.2 / 15.3	C / C		55.1% / 65.6%		**Yes (Direct)**[1]

TABLE 7.2
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
CUMULATIVE (YEAR 2025) TRAFFIC CONDITIONS

Intersection	Cumulative (Year 2025) + Project (Buildout)				Cumulative (Year 2025) w/o Project		Impact Criteria by Jurisdiction			Significant Impact?
							Caltrans/ San Diego	Chula Vista	County	
	AM Peak Hour		PM Peak Hour							
	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS	Avg. Delay (sec.) AM/PM	LOS AM/PM	Change in Delay (sec.) AM/PM	Project % of Entering Volume AM/PM	Cumulative + Project Traffic to Critical Movements AM/PM	
21. Otay Lakes Road / SR-94 (County)*	49.6	**E**	59.3	**F**	17.6 / 23.4	C / C	32.0 / 35.9		EBL: +65 / +44	**Yes (Cumulative)**
22. Olympic Parkway / East Palomar Street	27.7	C	33.9	C	27.7 / 31.3	C / C		2.6% / 3.1%		No
23. Olympic Parkway / SR-125 SB Ramps	5.4	A	6.4	A	5.4 / 6.4	A / A	0.0 / 0.0	5.3% / 4.9%		No
24. Olympic Parkway / SR-125 NB Ramps	6.2	A	11.4	B	5.5 / 8.0	A / A	0.7 / 3.4	6.0% / 7.2%		No
25. Olympic Parkway / Eastlake Parkway	34.7	C	36.7	D	32.4 / 33.8	C / C		7.8% / 7.8%		No
26. Olympic Parkway / Hunte Parkway	28.2	C	46.9	D	22.9 / 34.1	C / C		13.6% / 12.3%		No
27. Olympic Parkway / Olympic Vista Road	27.5	C	29.5	C	25.0 / 25.9	C / C		10.9% / 11.1%		No
28. Olympic Parkway / Wueste Road	7.7	A	6.0	A	7.7 / 6.0	A / A		45.4% / 47.6%		No
29. Lake Crest Drive / Wueste Road	24.2	C	18.0	B	12.4 / 10.6	B / B		39.1% / 36.6%		No
30. Main Street / SR-125 SB Ramps	Does Not Exist									
31. Main Street / SR-125 NB Ramps	Does Not Exist									

TABLE 7.2
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
CUMULATIVE (YEAR 2025) TRAFFIC CONDITIONS

Intersection	Cumulative (Year 2025) + Project (Buildout)				Cumulative (Year 2025) w/o Project		Impact Criteria by Jurisdiction			Significant Impact?
							Caltrans/ San Diego	Chula Vista	County	
	AM Peak Hour		PM Peak Hour							
	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS	Avg. Delay (sec.) AM/PM	LOS AM/PM	Change in Delay (sec.) AM/PM	Project % of Entering Volume AM/PM	Cumulative + Project Traffic to Critical Movements AM/PM	
32. Main Street / Eastlake Parkway	Does Not Exist									
33. Otay Valley Road / SR-125 SB Ramps	Does Not Exist									
34. Otay Valley Road / SR-125 NB Ramps	Does Not Exist									
35. Otay Mesa Road / La Media Road (SD)	38.4	D	46.3	D	37.2 / 41.4	D / D	1.2 / 4.9			No
36. Otay Mesa Road / SR-125 SB Ramps (SD)	13.1	B	12.0	B	11.7 / 11.2	B / B	1.4 / 0.8			No
37. Otay Mesa Road / SR-125 NB Ramps (SD)	3.2	A	9.8	A	2.6 / 8.8	A / A	0.6 / 1.0			No
38. Otay Mesa Road / Ellis Road (County)	29.4	C	28.2	C	26.2 / 24.3	C / C			EBL: +22 / +15	No
39. SR-94 / Melody Road (County)	7.7	A	10.8	B	7.3 / 10.5	A / B	0.4 / 0.3		EBL: +0 / +0	No
40. SR-94 / Maxfield Road (County)*	15.9	C	21.4	C	15.4 / 20.3	C / C	0.5 / 1.1		EBL: +0 / +0	No
41. SR-94 / Jefferson Road (County)	22.6	C	26.0	C	20.6 / 25.2	C / C	2.0 / 0.8		SBL: +6 / +14	No
42. Otay Lakes Road @ Project Driveway #1 (County)	13.9	B	12.5	B	Does Not Exist				EBL: +101 / +247	No

TABLE 7.2
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
CUMULATIVE (YEAR 2025) TRAFFIC CONDITIONS

Intersection	Cumulative (Year 2025) + Project (Buildout)				Cumulative (Year 2025) w/o Project		Impact Criteria by Jurisdiction			Significant Impact?
							Caltrans/ San Diego	Chula Vista	County	
	AM Peak Hour		PM Peak Hour		Avg. Delay (sec.) AM/PM	LOS AM/PM	Change in Delay (sec.) AM/PM	Project % of Entering Volume AM/PM	Cumulative + Project Traffic to Critical Movements AM/PM	
	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS						
43. Otay Lakes Road @ Project Driveway #2[RA] (County)	8.7	A	34.8	D	Does Not Exist				EBL: +370 /+ 956	No
44. Otay Lakes Road @ Project Driveway #3[RA] (County)	6.4	A	5.6	A	Does Not Exist				EBL: +19 / +47	No

Source: Chen Ryan Associates; March 2015

Notes:
Bold letter indicates unacceptable LOS E of F.
* For two-way stop controlled intersections, the delay shown is the worst delay experienced by any of the approaches.
[1] For purposes of comparison, a "project-specific" impact in the City of Chula Vista is comparable to a "direct" impact as defined by the County of San Diego.
RA = Roundabout. Rodel software is utilized for the peak hour operational analysis.

Roadway Segment Analysis

Tables 7.3A and **7.3B** display the Level of Service analysis results for the key roadway segments under Cumulative (Year 2025) traffic conditions in the City of Chula Vista and in the County of San Diego, respectively.

As shown in Tables 7.3A and 7.3B, the following eleven (11) roadway segments would operate at unacceptable LOS D (in Chula Vista only), E or F under Cumulative (Year 2025) traffic conditions:

- Telegraph Canyon Rd, between Oleander Ave and Medical Center Dr (LOS E, City of CV) – Proposed buildout project trips would comprise 3.6% (less than 5%) of the total segment volume, and would add 2,200 ADT (more than 800 ADT). However, the intersections of Telegraph Canyon Road / Oleander Avenue and Telegraph Canyon Road / Medical Center Drive are projected to operate at acceptable LOS D or better during the peak hours. Thus, the project would not have a significant impact to this roadway segment.
- Telegraph Canyon Rd, between Medical Center Dr and Paseo Ladera (LOS E, City of CV) – Proposed buildout project trips would comprise 4.2% (less than 5%) of the total segment volume, and would add 2,420 ADT (more than 800 ADT). However, the intersections of Telegraph Canyon Road / Medical Center Drive and Telegraph Canyon Road / Paseo Ladera are projected to operate at acceptable LOS D or better during the peak hours. Thus, the project would not have a significant impact to this roadway segment.
- Telegraph Canyon Rd, between Paseo Ladera and Paseo Ranchero/Heritage Rd (LOS E, City of CV) – Proposed buildout project trips would comprise 4.5% (less than 5%) of the total segment volume, and would add 2,630 ADT (more than 800 ADT). However, the intersections of Telegraph Canyon Road / Paseo Ladera and Telegraph Canyon Road / Paseo Ranchero/Heritage Road are projected to operate at acceptable LOS D during the peak hours. Thus, the project would not have a significant impact to this roadway segment.
- Telegraph Canyon Rd, between Paseo Ranchero/Heritage Rd and La Media Road (LOS D, City of CV) – Proposed buildout project trips would comprise 5.5% (more than 5%) of the total segment volume, and would add 3,070 ADT (more than 800 ADT). However, the intersections of Telegraph Canyon Road / Paseo Ranchero/Heritage Road and Telegraph Canyon Road / La Media Road are projected to operate at acceptable LOS D during the peak hours, thus. Thus, the project would not have a significant impact to this roadway segment.
- Otay Lakes Rd, between SR-125 SB Ramps and SR-125 NB Ramps (LOS D, City of CV) – Proposed buildout project trips would comprise 9.9% (more than 5%) of the total segment volume, and would add 5,270 ADT (more than 800 ADT). However, the intersections of Otay Lakes Road / SR-125 SB Ramps and Otay Lakes Road / SR-125 NB Ramps are projected to operate at acceptable LOS B or better during the peak hours. Thus, the project would not have a significant impact to this roadway segment.

TABLE 7.3A
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
CUMULATIVE (YEAR 2025) TRAFFIC CONDITIONS
(City of Chula Vista)

Roadway	Segment	Cross-Section	ADT	LOS Threshold (LOS C)	LOS w/ Project	Project Contribution ≥ 5%?	Project ADT > 800?	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
Proctor Valley Rd	Lane Ave to Hunte Pkwy	6-Ln w/ RM	31,080	50,000	A				No
Telegraph Canyon Rd	I-805 SB Ramps to I-805 NB Ramps	7-Ln w/ RM	59,580	70,000	B				No
	I-805 NB Ramps to Oleander Ave		64,100		C				No
	Oleander Ave to Medical Center Dr	6-Ln w/ RM	60,700	50,000	**E**	3.6%	2,200	Yes	No
	Medical Center Dr to Paseo Ladera		58,120		**E**	4.2%	2,420	Yes	No
	Paseo Ladera to Paseo Ranchero / Heritage Rd		58,830		**E**	4.5%	2,630	Yes	No
	Paseo Ranchero / Heritage Rd to La Media Rd		52,770		**D**	5.8%	3,070	Yes	No
Otay Lakes Rd	East H St to Telegraph Canyon Rd/Otay Lakes Rd	6-Ln w/ RM	33,200	30,000	A				No
	La Media Rd to Rutgers Ave		48,030	50,000	C				No
	Rutgers Ave to SR-125 SB Ramps		48,430		C				No
	SR-125 SB Ramps to SR-125 NB Ramps		52,970		**D**	9.9%	5,270	Yes	No
	SR-125 NB Ramps to Eastlake Pkwy	7-Ln w/ RM	54,530	70,000	A				No

TABLE 7.3A
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
CUMULATIVE (YEAR 2025) TRAFFIC CONDITIONS
(City of Chula Vista)

Roadway	Segment	Cross-Section	ADT	LOS Threshold (LOS C)	LOS w/ Project	Project Contribution ≥ 5%?	Project ADT > 800?	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
Otay Lakes Rd	Eastlake Pkwy to Lane Ave	6-Ln w/ RM	36,400	50,000	A				No
	Lane Ave to Fenton St		29,580		A				No
	Fenton St to Hunte Pkwy		28,800		A				No
	Hunte Pkwy to Woods Dr		27,910		A				No
	Woods Dr to Lake Crest Dr		31,410		A				No
	Lake Crest Dr to Wueste Rd	2-Ln	21,160	7,500	**F**	74.7%	15,810	No	**Yes (Direct)**
	Wueste Rd to City of CV/County boundary		25,540	7,500	**F**	76.5%	19,540	No	**Yes (Direct)**
Olympic Pkwy	La Media Rd to E Palomar St	6-Ln w/ RM	35,520	50,000	A				No
	E Palomar St to SR-125 SB Ramps		54,660		**D**	1.2%	880	Yes	No
	SR-125 SB Ramps to SR-125 NB Ramps		56,540		**E**	2.7%	1,760	Yes	No
	SR-125 NB Ramps to Eastlake Pkwy	8-Ln w/ RM	60,290	70,000	B				No
	Eastlake Pkwy to Hunte Pkwy	6-Ln w/ RM	38,050	50,000	B				No
	Hunte Pkwy to Olympic Vista Rd	4-Ln w/ RM	19,610	30,000	A				No
	East of Olympic Vista Rd		10,410		A				No
Lane Ave	Proctor Valley Rd to Otay Lakes Rd	4-Ln w/ TWLTL	19,380	22,000	C				No

TABLE 7.3A
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
CUMULATIVE (YEAR 2025) TRAFFIC CONDITIONS
(City of Chula Vista)

Roadway	Segment	Cross-Section	ADT	LOS Threshold (LOS C)	LOS w/ Project	Project Contribution ≥ 5%?	Project ADT > 800?	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
Hunte Pkwy	Proctor Valley Rd to Otay Lakes Rd	4-Ln w/ RM	13,800	30,000	A				No
	Otay Lakes Rd to Clubhouse Dr		18,510		A				No
	Clubhouse Dr to Olympic Pkwy		16,850		A				No
	Olympic Pkwy to Eastlake Pkwy	6-Ln w/ RM	19,080	50,000	A				No

Source: Chen Ryan Associates; March 2015

Notes:
Bold letter indicates unacceptable LOS D, E or F.
RM = Raised Median.
TWLTL = Two-Way Left-Turn Lane.

TABLE 7.3B
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
CUMULATIVE (YEAR 2025) TRAFFIC CONDITIONS
(County of San Diego)

Roadway	Segment	Cross-Section	ADT	LOS Threshold (LOS D)	LOS w/ Project	Significant Impact?
Otay Lakes Rd	City of CV/County boundary to Driveway #1	2-Ln	25,540	10,900	**F**	**Yes (Cumulative)**
	Driveway #1 to Driveway #2		23,790		**F**	**Yes (Cumulative)**
	Driveway #2 to Driveway #3	2-Ln	10,170	10,900	D	No
	Driveway #3 to SR-94		8,420		D	No

Source: Chen Ryan Associates; March 2015

Note: Bold letter indicates unacceptable LOS E or F.

- Otay Lakes Rd, between Lake Crest Dr and Wueste Rd (LOS F, City of CV) – Proposed buildout project trips would comprise 74.7% (more than 5%) of the total segment volume, and would add 15,810 ADT (more than 800 ADT). Additionally, the intersection Otay Lake Road / Wueste Road is projected to operate at unacceptable LOS F during the peak hours. Thus, the project would have a significant project specific (direct) impact to this roadway segment.
- Otay Lakes Rd, between Wueste Road and the City of Chula Vista/County boundary (LOS F, City of CV) – Proposed buildout project trips would comprise 76.5% (more than 5%) of the total segment volume, and would add 19,540 ADT (more than 800 ADT). Additionally, the intersection of Otay Lake Road / Wueste Road is projected to operate at unacceptable LOS F during the peak hours. Thus, the project would have a significant project specific (direct) impact to this roadway segment.
- Olympic Parkway, between East Palomar Street and SR-125 SB Ramps (LOS D, City of CV) – Proposed buildout project trips would comprise 1.2% (less than 5%) of the total segment volume, and would add 660 ADT (more than 800 ADT). However, the intersections of Olympic Parkway / East Palomar Street and Olympic Parkway / SR-125 SB Ramps are projected to operate at acceptable LOS C or better during the peak hours. Thus, the project would not have a significant impact to this roadway segment.
- Olympic Parkway, between SR-125 SB Ramps and SR-125 NB Ramps (LOS E, City of CV) – Proposed buildout project trips would comprise 2.7% (less than 5%) of the total segment volume, and would add 1,540 ADT (more than 800 ADT). However, the intersections of Olympic Parkway / SR-125 SB Ramps and Olympic Parkway / SR-125 NB Ramps are projected to operate at acceptable LOS B or better during the peak hours. Thus, the project would not have a significant impact to this roadway segment.
- Otay Lakes Rd, between the City of Chula Vista/County boundary and Project Driveway #1/Intersection #42 (LOS F, County) – Proposed buildout project would add more than 100 ADT to this failing 2-lane roadway segment. Thus, the project would have a significant cumulative impact to this roadway segment.
- Otay Lakes Rd, between Project Driveway #1/Intersection #~~ and~~42 and Driveway #2 (LOS F, County) – Proposed buildout project would add more than 100 ADT to this failing 2-lane roadway segment. Thus, the project would have a significant cumulative impact to this roadway segment.

Based upon the significant impact criteria in Section 2.8, the addition of trips generated by buildout of the project would cause impacts along the following roadway segments (project specific (direct) impact to two (2) roadway segment and cumulative impact to two (2) roadway segments):

Project Specific (Direct) Impact

- Otay Lakes Road, between Lake Crest Drive and Wueste Road (Chula Vista); and
- Otay Lakes Road, between Wueste Road and the City of Chula Vista/County boundary (Chula Vista).

Cumulative Impact

- Otay Lakes Road, between the City of Chula Vista/County boundary and Project Driveway #1/Intersection #42 (County); and
- Otay Lakes Road, between Project Driveway #1/Intersection #42 and Project Driveway #2/Intersection #43 (County).

It is important to note that as shown in Section 5.2 previously, the proposed project would cause a project specific/direct impact to the following segments along Otay Lakes Road under Existing Plus Project (Phase I) conditions:

- Otay Lakes Road, between Wueste Road and the City of Chula Vista/County boundary;
- Otay Lakes Road, between the City of Chula Vista/County boundary and Project Driveway #1/Intersection #42; and
- Otay Lakes Road, between Project Driveway #1/Intersection #42 and Driveway #2/Intersection #43.

The project would also cause a project specific (direct) impact to Otay Lakes Road, between Lake Crest Drive and Wueste Road under the Existing Plus Project (Buildout) conditions as described in Section 6.2.

Freeway/State Highway Segment Analysis

The freeway/state highway segment Level of Service analyses were performed utilizing the methodologies presented in Chapter 2.0. **Table 7.4** displays the resulting Level of Service for I-805 and SR-125 under Cumulative (Year 2025) traffic conditions.

As shown, all segments along I-805 and SR-125 would continue to operate at acceptable LOS D or better under Cumulative (Year 2025) traffic conditions with the exception of the following segment:

- I-805, between East H St and Telegraph Canyon Rd (LOS E) The project traffic would increase the V/C ratio by 0.006 (less than .01); therefore, the project does not have a significant impact to this freeway segment.

Based on significant impact criteria discussed in Section 2.8, the addition of trips generated by the buildout of the project would not cause any significant traffic impacts to study area freeway/state highway segments.

TABLE 7.4
FREEWAY/STATE HIGHWAY SEGMENT LEVEL OF SERVICE RESULTS
CUMULATIVE (YEAR 2025) TRAFFIC CONDITIONS

Freeway / State Highway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	% of Heavy Vehicle	Volume (pc/h/ln)	V/C	LOS w/ Project	Change in V/C (compare to 2025 Base)	Significant Impact?
I-805	Bonita Road to East H Street	292,000	7.8%	22,776	0.50	5M+1HOV	0.95	7.0%	2,148	0.90	D	0.006	No
	East H Street to Telegraph Canyon Road	308,300	7.8%	24,047	0.50	5M+1HOV	0.95	7.0%	2,268	0.95	**E**	0.006	No
	Telegraph Canyon Road to Olympic Parkway	238,100	7.1%	16,905	0.51	4M+1Aux +1HOV	0.95	7.0%	1,774	0.74	C	0.001	No
	Olympic Parkway to Main Street	235,700	7.1%	16,735	0.51	4M+1Aux +1HOV	0.95	7.0%	1,756	0.73	C	0.002	No
SR-125	SR-54 to Mt. Miguel Road	26,700	7.0%	1,869	0.60	2M	0.95	10.3%	658	0.27	A	0.021	No
	Mt Miguel Road to Proctor Valley Road	29,400	7.0%	2,058	0.60	2M	0.95	10.3%	725	0.30	A	0.013	No
	Proctor Valley Road to Otay Lakes Road	22,400	7.0%	1,568	0.60	2M	0.95	10.3%	552	0.23	A	0.013	No
	Otay Lakes Road to Olympic Parkway	28,100	7.0%	1,967	0.60	2M	0.95	10.3%	692	0.29	A	0.004	No
	Olympic Parkway to Birch Road	28,200	7.0%	1,974	0.60	2M	0.95	10.3%	695	0.29	A	0.023	No
	Birch Road to Main Street	46,200	7.0%	3,234	0.60	2M	0.95	10.3%	1,139	0.47	B	0.023	No
	Main Street to Otay Valley Road	46,200	7.0%	3,234	0.60	2M	0.95	10.3%	1,139	0.47	B	0.023	No
	Otay Valley Road to Lone Star Road	46,200	7.0%	3,234	0.60	2M	0.95	10.3%	1,139	0.47	B	0.023	No
	Lone Star Road to Otay Mesa Road	46,200	7.0%	3,234	0.60	2M	0.95	10.3%	1,139	0.47	B	0.023	No
	Otay Mesa Road to SR-905	12,000	7.0%	840	0.60	2M	0.95	10.3%	296	0.12	A	0.009	No

Source: Chen Ryan Associates; March 2015

Notes:
M = Mainline.
Aux = Auxiliary Lane.
HOV = High Occupancy Vehicle lane.

Two-Lane Highway Segment Analysis

The signalization of the SR-94/Melody Road intersection would result in intersection spacing less than one mile apart along the study portions of SR-94, requiring the following three (3) SR-94 segments to be analyzed utilizing the "Two-Lane Highways with Signalized Intersection Spacing *Under* One Mile" methodology. Under this methodology, Level of Service along the study portions of SR-94 will be determined by the intersection operations along the following segments:

- SR-94, between Lyons Valley Road and Jefferson Road;
- SR-94, between Jefferson Road and Maxfield Road; and
- SR-94, between Maxfield Road and Melody Road.

As shown previously in Table 7.4, all of the intersections (#42, #43 & #44) along the above segments of SR-94 are projected to operate at acceptable LOS D or better, thus, SR-94 between Lyons Valley Road and Melody Road (the three segments identified above) would operate at acceptable LOS under Cumulative (Year 2025) traffic conditions.

The segments of SR-94 between Melody Road and Otay Lakes Road, and south of Otay Lakes Road were analyzed utilizing the "Two-Lane Highways with Signalized Intersection Spacing *Over* One Mile" methodology as presented below.

Tables 7.5A and 7.5B display two-lane highway Level of Service analysis results for SR-94 under Cumulative (Year 2025) traffic conditions. This analysis was performed utilizing both the County of San Diego and Caltrans (same as HCM 2000) methodologies. The two-lane highway HCM analysis worksheets are included in **Appendix Q.**

As shown in Table 7.5A, the segment of SR-94, south of Otay Lakes Road would operate at an unacceptable LOS E under Cumulative (Year 2025) traffic conditions based on County of San Diego LOS criteria. The additional trips generated by the buildout of the project would cause a cumulative traffic impact at this location.

This segment was also analyzed utilizing the Caltrans/HCM methodologies, and the peak hour travel speeds were shown to results in LOS D (see Table 7.5B). Peak hour operations are considered to be a better indicator of the true roadway operating conditions, thus it was determined that no mitigation would be required along this particular SR-94 segment.

As shown in Table 7.5B, SR-94, from Melody Road to south of Otay Lakes Road, would operate at acceptable LOS D based on the Caltrans/HCM methodology. The addition of trips generated by the buildout of the project would not cause any significant traffic impacts to SR-94 based on Caltrans/HCM two-lane highway analysis methodology. Note that the segment of SR-94, north of Melody Road, was not analyzed using the Caltrans/HCM methodology as the proposed project would not add 50 or more peak hour trips in either direction along this segment of SR-94.

TABLE 7.5A
2-LANE HIGHWAY SEGMENT LEVEL OF SERVICE RESULTS
COUNTY OF SAN DIEGO LOS CRITERIA
CUMULATIVE (YEAR 2025) TRAFFIC CONDITIONS

Highway	Segment	LOS Threshold (LOS D)	ADT	LOS w/ Project	LOS w/o Project	Project ADT	Significant Impact?
SR-94	Melody Road to Otay Lakes Road	16,200	15,980	D or better	D or better	280	No
	South of Otay Lakes Road		21,080	**E**	**E**	370 (>325)	**Yes (Cumulative)**

Source: Chen Ryan Associates; March 2015

Note: Bold letter indicates unacceptable LOS E or F.

TABLE 7.5B
2-LANE HIGHWAY SEGMENT LEVEL OF SERVICE RESULTS
CALTRANS AND HCM METHODOLOGY
CUMULATIVE (YEAR 2025) TRAFFIC CONDITIONS

Highway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	%HV	Volume (pc/h/ln)	Speed (mph)	LOS w/ Project	LOS w/o Project	Significant Impact?
SR-94	Melody Road to Otay Lakes Road	15,980	8.9%	1,422	0.67	1	0.92	5.0%	1,099	42.4	D	D	No
	South of Otay Lakes Road	21,080	8.4%	1,730	0.67	1	0.96	5.0%	1,271	42.0	D	D	No

Source: Chen Ryan Associates; March 2015

Ramp Intersection Capacity Analysis

Consistent with Caltrans requirements, the signalized freeway ramp intersections along I-805 at Telegraph Canyon Road and along SR-125 at various interchanges were analyzed under Cumulative (Year 2025) traffic conditions using the ILV procedures as described in Chapter 2.0. ILV analysis results are displayed in **Table 7.6** and analysis worksheets are provided in **Appendix R**.

TABLE 7.6
RAMP INTERSECTION CAPACITY ANALYSIS
CUMULATIVE (YEAR 2025) TRAFFIC CONDITIONS

Ramp Intersection	Peak Hour	ILV / Hour	Description
I-805 SB Ramps / Telegraph Canyon Road	AM	1,416	*1200-1500: (At Capacity)*
	PM	1,612	*>1500: (Over Capacity)*
I-805 NB Ramps / Telegraph Canyon Road	AM	1,469	*1200-1500: (At Capacity)*
	PM	1,238	*1200-1500: (At Capacity)*
SR-125 SB Ramps / Otay Lakes Road	AM	885	*<1200: (Under Capacity)*
	PM	1,225	*1200-1500: (At Capacity)*
SR-125 NB Ramps / Otay Lakes Road	AM	955	*<1200: (Under Capacity)*
	PM	1,171	*<1200: (Under Capacity)*
SR-125 SB Ramps / Olympic Parkway	AM	954	*<1200: (Under Capacity)*
	PM	1,041	*<1200: (Under Capacity)*
SR-125 NB Ramps / Olympic Parkway	AM	921	*<1200: (Under Capacity)*
	PM	1,130	*<1200: (Under Capacity)*
SR-125 SB Ramps / Main Street	AM	Does Not Exist	
	PM		
SR-125 NB Ramps / Main Street	AM	Does Not Exist	
	PM		
SR-125 SB Ramps / Otay Valley Road	AM	Does Not Exist	
	PM		
SR-125 SB Ramps / Otay Valley Road	AM	Does Not Exist	
	PM		
SR-125 SB Ramps / Otay Mesa Road	AM	624	*<1200: (Under Capacity)*
	PM	740	*<1200: (Under Capacity)*
SR-125 SB Ramps / Otay Mesa Road	AM	432	*<1200: (Under Capacity)*
	PM	869	*<1200: (Under Capacity)*

Source: Chen Ryan Associates; March 2015

As shown in the table, both I-805 ramp intersections would continue to operate at "At Capacity" and/or "Under Capacity", with the exception of the I-805 SB Ramps / Telegraph Canyon Road intersection which would operate at "Over Capacity" during the PM peak hour. All of the SR-125 ramp intersections would operate at "At Capacity" and/or "Under Capacity" during both the AM and PM peak hours under Cumulative (Year 2025) traffic conditions.

Ramp Metering Analysis

Table 7.7 displays the ramp metering analysis conducted at I-805 NB on-Ramp at Telegraph Canyon Road under Cumulative (Year 2025) traffic conditions. Similar to the Existing conditions, it is assumed that approximately 80% of the total arrival traffic would utilize the two non-HOV lanes.

TABLE 7.7
RAMP METERING ANALYSIS
CUMULATIVE (YEAR 2025) TRAFFIC CONDITIONS

Location	Peak Hour	Demand[1] (veh/hr)	Meter Rate[2] (veh/hr)	Excess Demand[3] (veh/hr)	Delay w/ Project[4] (min)	Queue[5] (ft)	Delay w/o Project (min)	Significant Impact?
I-805 NB On-Ramp @ Telegraph Canyon Road	AM	1,952	1,824	128	4.2	1,850	2.9	No

Source: Chen Ryan Associates; March 2015

Notes:
1. Demand is the peak hour demand expected to use the on-ramp.
2. Meter Rate is the peak hour capacity expected to be processed through the ramp meter. This value was obtained from Caltrans.
3. Excess Demand = (Demand) – (Meter Rate) or zero, whichever is greater.
4. Delay = (Excess Demand / Meter Rate) X 60 min/hr.
5. Queue (Per Ramp Lane) = (Excess Demand) X 29 ft/veh/# of non-HOV lanes.

As shown in Table 7.7, the AM peak hour demand at the NB On-Ramp would be greater than the capacity provided by the ramp meter under Cumulative (Year 2025) traffic conditions. However, based upon SANTEC/ITE Guidelines, the projected delay of 4.2 minutes (less than 15 min.) would be acceptable. The proposed project would not result in any significant impact at this on-ramp.

Impact Significance and Mitigation

This section identifies required mitigation measures for intersection and roadway facilities that would be significantly impacted by project-related traffic under Cumulative (Year 2025) traffic conditions.

Intersections

The proposed project would have a project specific (direct) impact at one (1) intersection in the City of Chula Vista as follows:

- *Otay Lakes Road / Wueste Road* (project specific)

The following intersection improvements would be required to mitigate the identified traffic impact:

- *Otay Lakes Road / Wueste Road* (project specific) – Signalization by the ~~1,500th~~1,234th ~~residential unit~~EDU would be required at this intersection to mitigate project impacts. Note that a westbound left-turn lane, a westbound through lane, as well as an additional eastbound through lane, would have already been constructed by the ~~910th~~ ~~383rd~~384th ~~residential unit~~EDU as a part of the roadway mitigation. A traffic signal warrant was conducted, and based upon *MUTCD 2012 Figure 4C-103 (CA),* this intersection would satisfy both the "Minimum Vehicular Traffic" and "Interruption of Continuous Traffic" warrants. The signal warrant worksheet is provided in **Appendix S**.

  The improvement identified above to the Otay Lakes Road / Wueste Road intersection is consistent with the City of Chula Vista's Circulation Element and would not conflict with the City's long-range and ultimate build-out plans or programs.

  If implemented, the mitigation improvements would fully mitigate the Project's project specific (direct) impact to the intersection of Otay Lakes Road and Wueste Road. However, because the necessary improvements would be constructed within the City of Chula Vista and, therefore, are outside of the County's jurisdiction and control, the County cannot assure that the City will permit implementation of the improvements. Although mitigation in the form of road widening has been identified to reduce the corresponding impacts to less than significant, and the Project applicant would implement the improvements consistent with the mitigation requirements, for purposes of CEQA and this TIA, the impact to the intersection of Otay Lakes Road and Wueste Road is considered significant and unavoidable until such time as the City concurs with the mitigation.

The proposed project would also have a cumulative impact at one (1) intersection in the County of San Diego. The following intersection improvements would be required to mitigate the identified traffic impact:

- *Otay Lakes Road / SR-94* (Cumulative) – Signalization. A traffic signal warrant was conducted, and based upon *MUTCD 2012 Figure 4C-103 (CA),* this intersection would satisfy both the "Minimum Vehicular Traffic" and "Interruption of Continuous Traffic" warrants. The signal warrant worksheet is provided in Appendix S. This cumulatively impacted intersection would operate at LOS B or better during the peak hours with the traffic signal. However, Caltrans does not have a plan or program in place where the project applicant could pay its fair-share towards the cost of such improvements. Therefore, mitigation is infeasible and the impacts would remain significant and unavoidable.

Table 7.8 displays Level of Service analysis results for the mitigated intersection under Cumulative (Year 2025) traffic conditions. Calculation worksheets for the intersection analysis are provided in **Appendix T**.

TABLE 7.8
INTERSECTION LEVEL OF SERVICE WITH PROJECT MITIGATION
CUMULATIVE (YEAR 2025) TRAFFIC CONDITIONS

Intersection	Before Mitigation				After Mitigation			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Avg. Delay (Sec.)	LOS	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS
Otay Lakes Road / Wueste Road*	42.9	**E**	49.8	**E**	8.4	A	10.3	B
Otay Lakes Road / SR-94	49.6	**E**	59.3	**F**	8.2	A	10.6	B

Source: Chen Ryan Associates; March 2015

Note: Bold letter indicates unacceptable LOS E or F.

As shown in Table 7.8, after implementation of the identified improvements, the impacted intersections would operate at acceptable LOS D or better during both the AM and PM peak hours.

Roadway Segments

The following mitigation measures are proposed to reduce the significant Project impacts identified under Cumulative Year 2025 conditions to a less-than-significant level. ~~In this case, the mitigation measures under the Existing Plus Project (Phase I) scenario (widening of Otay Lakes Road, between Wueste Road and the City of Chula Vista/County Boundary to 4 lane by 728th residential unit), and mitigation measures under the Existing Plus Project (Buildout) scenario (widening of Otay Lakes Road, between Lake Crest Drive and Wueste Road to 4 lane by 910th residential unit) are substantively equivalent to the recommended mitigation measures under this scenario. Therefore, implementation of mitigation measures recommended under Existing Plus Project (Phase I) and Existing Plus Project (Buildout) would reduce the identified significant impacts such that it would not be necessary to also implement mitigation measures identified below.~~

The proposed project would have a direct impact at two (2) roadway segments within the City of Chula Vista. The following roadway improvement would be required to mitigate the identified traffic impacts:

- Otay Lakes Road, between Lake Crest Drive and Wueste Road (City of CV) – widen from 2 lanes to 4 lanes, including construction of an additional westbound left-turn lane by the ~~910th~~ 384th ~~residential unit~~EDU ~~(as identified under the Existing Plus Project (Buildout) scenario)~~. This significantly impacted roadway segment would operate at LOS B with the roadway widening.

  The improvement to Otay Lakes Road identified above is consistent with the City of Chula Vista's Circulation Element. The Circulation Element identifies this segment as a 6-Lane Prime Arterial. Widening the segment from the current two-lane configuration to four

lanes, as recommended by the mitigation measure, would not conflict with the City's long-range road widening plans (six lanes) because the mitigation improvements (widen from two to four lanes) do not foreclose or conflict with the City's ultimate build-out plans or programs.

If implemented, the mitigation improvements would fully mitigate the Project's project specific (direct) impact to the segment of Otay Lakes Road, between Lake Crest Drive and Wueste Road. However, because the necessary improvements would be constructed within the City of Chula Vista and, therefore, are outside of the County's jurisdiction and control, the County cannot assure that the City will permit implementation of the improvements. Although mitigation in the form of road widening has been identified to reduce the corresponding impacts to less than significant, and the Project applicant would implement the improvements consistent with the mitigation requirements, for purposes of CEQA and this TIA, the impact to Otay Lakes Road, between Lake Crest Drive and Wueste Road is considered significant and unavoidable until such time as the City concurs with the mitigation.

- Otay Lakes Road, between Wueste Road and the City of Chula Vista/County boundary (City of CV) – widen from 2 lanes to 4 lanes by the 384th ~~728th residential unit~~EDU ~~(as identified under the Existing Plus Project (Phase 1) scenario)~~. This significantly impacted roadway segment would operate at LOS C with the roadway widening.

  The improvement to Otay Lakes Road identified above is consistent with the City of Chula Vista's Circulation Element. The Circulation Element identifies this segment as a 6-Lane Prime Arterial. Widening the segment from the current two-lane configuration to four lanes, as recommended by the mitigation measure, would not conflict with the City's long-range road widening plans (six lanes) because the mitigation improvements (widen from two to four lanes) do not foreclose or conflict with the City's ultimate build-out plans or programs.

  If implemented, the mitigation improvements would fully mitigate the Project's project specific (direct) impact to the segment of Otay Lakes Road, between Wueste Road and the City of Chula Vista/County boundary. However, because the necessary improvements would be constructed within the City of Chula Vista and, therefore, are outside of the County's jurisdiction and control, the County cannot assure that the City will permit implementation of the improvements. Although mitigation in the form of road widening has been identified to reduce the corresponding impacts to less than significant, and the Project applicant would implement the improvements consistent with the mitigation requirements, for purposes of CEQA and this TIA, the impact to Otay Lakes Road, between Wueste Road and the City of Chula Vista/County boundary is considered significant and unavoidable until such time as the City concurs with the mitigation.

The proposed project would also have cumulative impacts at two (2) roadway segments in the County of San Diego. The following improvements would be required to mitigate the identified traffic impact:

- Otay Lakes Road, between ~~Wueste Road~~City of Chula Vista/County boundary and Project Driveway #1/Intersection #42 (County) – this roadway segment is included in the list of facilities included in the County's TIF Program and is classified as a Major Road (4.1B) in the County of San Diego General Plan Mobility Element. The project applicant proposes to change this roadway segment classification to a Boulevard (4.2A). Accordingly, the project applicant would be responsible for participating in an update to the TIF Program to reflect the change in classification. Subsequently, the project applicant would be responsible for complying with the updated TIF Program to mitigate for cumulative impacts.
- Otay Lakes Road, between Project Driveway #1/Intersection #42 and Driveway #2/Intersection #43 (County) – this roadway segment is included in the list of facilities included in the County's TIF Program and is classified as a Major Road (4.1B) in the County of San Diego General Plan Mobility Element. The project applicant proposes to change this roadway segment classification to a Boulevard (4.2A). Accordingly, the project applicant would be responsible for participating in an update to the TIF Program to reflect the change in classification. Subsequently, the project applicant would be responsible for complying with the updated TIF Program to mitigate for cumulative impacts.

As described in Section 5.2 and Section 6.2, the project includes mitigation to improve Otay Lakes Road in the County. This facility is identified by the TIF Program as a TIF eligible facility. As such, pursuant to the County TIF Program, the applicants would be entitled to credit against payment of the TIF, or for reimbursement through the TIF Program, for that work performed on Otay Lakes Road that is eligible for a TIF credit

Relative to the project's cumulative impacts above, the County TIF program provides a mechanism for mitigating the impacts created by future growth within the unincorporated area. The TIF is a fee program designed to facilitate compliance with the CEQA mandate that development projects mitigate their indirect, cumulative traffic impacts. The County TIF program fee requirement applies to all new development resulting in new/added traffic. The primary purpose of the TIF is twofold: (1) to fund the construction of identified roadway facilities needed to reduce, or mitigate, projected cumulative traffic impacts resulting from future development within the County; and (2) to allocate the costs of these roadway facilities proportionally among future developing properties based upon their individual cumulative traffic impacts.

TIF fees are deposited into local Community Planning Area accounts, regional accounts, and regional freeway ramp accounts. TIF funds are only used to pay for improvements to roadway facilities identified for inclusion in the TIF program, which includes both County roads and Caltrans highway facilities. TIF funds collected for a specific local or regional area must be spent in the same area. By ensuring TIF funds are spent for the specific roadway improvements

identified in the TIF program, the CEQA mitigation requirement is satisfied, and the Mitigation Fee Act nexus is met.

As part of the TIF program process, the transportation infrastructure needs are characterized as existing deficiencies, direct impacts of future development, or indirect (cumulative) impacts of future development. Existing roadway deficiencies are the responsibility of existing developed land uses and government agencies and cannot be addressed using impact fees. The TIF program is not intended to mitigate direct impacts which will continue to be the responsibility of individual development projects. The TIF program, therefore, is designed to address only the cumulative impacts associated with new growth.

Based on the individual area and regional TIF accounts and the incorporation of projected build-out traffic conditions into the adopted TIF Report, participation in the TIF Program is adequate mitigation for cumulative impacts on County roadways. The segments identified are within the County's jurisdiction are included in this TIF Program. Therefore, participation in the TIF Program constitutes adequate mitigation of the cumulative traffic impacts that would result from the project and with payment of the required fee, cumulative traffic impacts would be reduced to less than significant.

Freeways/State Highways

None of the study area freeway/state highway facilities would be significantly impacted, and therefore no mitigation measures would be required under Cumulative (Year 2015) traffic conditions.

Two-Lane Highways

The additional traffic generated by the buildout of the project would cause a cumulative traffic impact to SR-94, south of Otay Lakes Road. However, this segment was also analyzed utilizing the Caltrans/HCM methodologies and the peak hour travel speeds resulted in an LOS D along this segment of SR-94. Peak hour operations are considered to be a better indicator of the true roadway operating conditions, thus it was determined that no mitigation would be required at the subject SR-94 segment.

Ramp Metering

The I-805 NB On-Ramp at Telegraph Canyon Road would not be significantly impacted, therefore, no mitigation measures would be required under Cumulative (Year 2025) traffic conditions.

8.0 Future Year 2030 Traffic Conditions

This section provides a description of the Future Year 2030 traffic conditions with and without the proposed project. The following two (2) scenarios are discussed in this section:

- Future Year 2030 Base Conditions
- Future Year 2030 Base Plus Project (Buildout) Conditions

8.1 Future Year 2030 Roadway Network and Traffic Volumes

The most conservative and recent 2030 forecast model (SANDAG Series 11 Southbay2, dated 1/14/2013) was utilized for the future year analyses, as discussed in subsequent sections. This model run included the most recently adopted City of Chula Vista's Circulation Element, as well as on-going land use development projects (ie. University Villages and Village Two Comprehensive SPA Amendment). These projects are located in the southeastern portion of the City, and represent significant increases in land use density and intensity in comparison to the City's adopted General Plan. Note that the year 2030 forecast model (SANDAG Series 11 Southbay2, dated 1/14/2014) assumed the buildout of Otay Ranch Planning Area 17 in Traffic Analysis Zone 4135, which is expected to generate approximately 6,227 daily trips. However, with the adoption of the County of San Diego General Plan Update, the Planning Area 17 land use have been designated as 296 Single Family Residential, with the remaining of the planning area designated as Open Space. Based on the SANDAG's *Guide to Vehicular Traffic Generation Rates for the San Diego Region* (SANDAG, April 2002), it is estimated that the 296 Single Family Residential would generate 2,960 daily trips. Thus, the Planning Area 17 would generate fewer trips than those assumed in the 2030 forecast model discussed above. Therefore 3,267 daily trips were reduced from TAZ 4135, as well as the surrounding roadway network, to reflect the adopted Planning Area 17 land uses.

Figures 8-1A and **8-1B** display anticipated intersection and roadway geometrics for the study area under Future Year 2030 conditions. The future roadway network was based upon build-out of the City of Chula Vista and the County of San Diego General Plan Update Circulation Elements, with the proposed reclassification of Otay Lakes Road, between the City/County boundary (east of Wueste Road) and the planned Project Driveway #2 from a 4.1B Major Road with Raised Median to a 4.2A Boulevard with Raised Median.

<u>Assumed Improvements</u>

- Construction of Main Street, between Heritage Road and Eastlake Parkway - this segment of Main Street is included within the City's TDIF program and the first phase of the construction is included in the City's CIP Program for 2013-2016 (STM357 - #60A & #60B);
- Construction of Otay Valley Road, between Main Street and Eastlake Parkway – Otay Valley Road from Main Street to SR-125 western right-of-way (ROW), and Otay Valley Road from SR-125 eastern ROW to Eastlake Parkway is assumed to be constructed by the

University Villages Project for access and frontage (University Villages FEIR, 5.3-105 & 5.3-116, SCH # 2013071077); and

- Construction of two new interchanges along SR-125 at Main Street and Otay Valley Road – the SR-125/Main Street interchange (overpass and ramps) is included as part of the City of Chula Vista's TDIF program and was approved by the City Council on November 18, 2014 (STM-359 Facility #67). The SR-125/Otay Valley Road interchange (overpass and ramps) is included as part of the City of Chula Vista's TDIF program and was approved by the City Council on November 18, 2014 (STM-359 Facility #68).
- Widening of Otay Lakes Road, between Lake Crest Drive and Wueste Road to a 6-lane Prime Arterial – this segment of Otay Lakes Road is included in the City's Circulation Element as a 6-lane Prime Arterial, and is included in the City's TDIF program and was approved by the City Council on November 18, 2014 (STM-359 Facility #28B).
- Widening of Otay Lakes Road, between Wueste Road and to a 6-lane Prime Arterial – this segment of Otay Lakes Road is included in the City's Circulation Element as a 6-lane Prime Arterial. Based on information provided by the City of Chula Vista, it is anticipated that this segment of Otay Lakes Road would be included in the City's TDIF program by December of 2015.

The roadway segments and intersections assumptions described above are included in the City of Chula Vista General Plan Circulation Element, therefore, they are assumed to be constructed to their ultimate classifications by the Future Year 2030. In addition, the constructions of these facilities such as Main Street and Otay Valley Road are anticipated in the City of Chula Vista Eastern Transportation Development Impact Fee (TDIF) program. See City Municipal Code, Chapter 3.54).

Future intersection geometrics were developed by expanding the existing geometrics to match the planned roadway cross-sections.

Figures 8-2A and **8-2B** display projected peak hour intersection volumes and average daily roadway volumes under Future Year 2030 conditions.

8.2 Future Year 2030 Base Conditions

Level of Service analyses for the Future Year 2030 Base conditions were conducted using the methodologies described in Chapter 2.0. Intersection, roadway, and freeway/state highway Level of Service results are discussed below.

Intersection Analysis

Table 8.1 displays intersection Level of Service and average vehicle delay results for the key study area intersections under Future Year 2030 Base conditions. Level of Service calculation worksheets for the Year 2030 Base conditions are provided in **Appendix U**.

TABLE 8.1
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
FUTURE YEAR 2030 BASE CONDITIONS

Intersection	AM Peak Hour		PM Peak Hour	
	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS
1. East H Street / Otay Lakes Road	40.4	D	38.1	D
2. Proctor Valley Road / Hunte Parkway	28.2	C	38.0	D
3. Telegraph Canyon Road / I-805 SB Ramps	31.1	C	36.3	D
4. Telegraph Canyon Road / I-805 NB Ramps	49.9	D	35.2	D
5. Telegraph Canyon Road / Oleander Avenue	28.5	C	41.5	D
6. Telegraph Canyon Road / Paseo Del Rey	33.0	C	52.2	D
7. Telegraph Canyon Road / Medical Center Drive	17.9	B	22.4	C
8. Telegraph Canyon Road / Paseo Ladera	39.4	D	30.2	C
9. Telegraph Canyon Road / Paseo Ranchero/Heritage Road	44.7	D	40.2	D
10. Telegraph Canyon Road / Otay Lakes Road/La Media Road	36.5	D	36.6	D
11. Otay Lakes Road / Rutgers Avenue	13.1	B	12.7	B
12. Otay Lakes Road / SR-125 SB Ramps	4.4	A	8.0	A
13. Otay Lakes Road / SR-125 NB Ramps	4.5	A	4.3	A
14. Otay Lakes Road / Eastlake Parkway	39.3	D	39.0	D
15. Otay Lakes Road / Lane Avenue	19.3	B	22.7	C
16. Otay Lakes Road / Fenton Street	6.4	A	12.4	B
17. Otay Lakes Road / Hunte Parkway	27.3	C	26.2	C
18. Otay Lakes Road / Woods Drive	11.2	B	5.4	A
19. Otay Lakes Road / Lake Crest Drive	17.7	B	11.4	B
20. Otay Lakes Road / Wueste Road	4.7	A	8.4	A
21. Otay Lakes Road / SR-94 (County)	18.9	B	28.0	C
22. Olympic Parkway / East Palomar Street	30.1	C	54.0	D
23. Olympic Parkway / SR-125 SB Ramps	9.5	A	8.9	A
24. Olympic Parkway / SR-125 NB Ramps	8.4	A	5.9	A
25. Olympic Parkway / Eastlake Parkway	28.6	C	31.3	C
26. Olympic Parkway / Hunte Parkway	30.4	C	29.9	C
27. Olympic Parkway / Olympic Vista Road	26.2	C	23.3	C
28. Olympic Parkway / Wueste Road	15.1	B	12.6	B
29. Lake Crest Drive / Wueste Road	8.3	A	8.4	A
30. Main Street / SR-125 SB Ramps	13.2	B	18.0	B
31. Main Street / SR-125 NB Ramps	18.1	B	45.1	D
32. Main Street / Eastlake Parkway	34.7	C	52.7	D
33. Otay Valley Road / SR-125 SB Ramps	11.4	B	15.4	B

TABLE 8.1
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
FUTURE YEAR 2030 BASE CONDITIONS

Intersection	AM Peak Hour		PM Peak Hour	
	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS
34. Otay Valley Road / SR-125 NB Ramps	8.5	A	11.2	B
35. Otay Mesa Road / La Media Road (SD)	43.6	D	48.3	D
36. Otay Mesa Road / SR-125 SB Ramps (SD)	8.5	A	8.0	A
37. Otay Mesa Road / SR-125 NB Ramps (SD)	10.3	B	11.2	B
38. Otay Mesa Road / Ellis Road (County)	30.1	C	24.3	C
39. SR-94 / Melody Road (County)	9.6	A	12.6	B
40. SR-94 / Maxfield Road (County)*	15.8	C	22.9	C
41. SR-94 / Jefferson Road (County)	43.0	D	40.2	D
42. Otay Lakes Road @ Project Driveway #1 (County)	Does Not Exist			
43. Otay Lakes Road @ Project Driveway #2RA (County)	Does Not Exist			
44. Otay Lakes Road @ Project Driveway #3RA (County)	Does Not Exist			

Source: Chen Ryan Associates; March 2015

Notes:
* For one or two-way stop controlled intersections, the delay shown is the worst delay experienced by any of the approaches.
RA = Roundabout. Rodel software is utilized for the peak hour operational analysis.

As show in Table 8.1, all of the study area intersections would operate at acceptable LOS D or better under Future Year 2030 Base conditions.

Roadway Segment Analysis

Table 8.2A displays the Level of Service analysis results for key study area roadway segments within the City of Chula Vista under Future Year 2030 Base conditions.

TABLE 8.2A
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
FUTURE YEAR 2030 BASE CONDITIONS
(City of Chula Vista)

Roadway	Segment	Classification	Average Daily Traffic (ADT)	LOS Threshold (LOS C)	Level of Service (LOS)
Proctor Valley Rd	Lane Ave to Hunte Pkwy	6-Ln Prime	28,700	50,000	A
Telegraph Canyon Rd	I-805 SB Ramps to I-805 NB Ramps	7-Ln Expressway	51,300	70,000	A
	I-805 NB Ramps to Oleander Ave		58,400		B

TABLE 8.2A
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
FUTURE YEAR 2030 BASE CONDITIONS
(City of Chula Vista)

Roadway	Segment	Classification	Average Daily Traffic (ADT)	LOS Threshold (LOS C)	Level of Service (LOS)
Telegraph Canyon Rd	Oleander Ave to Medical Center Dr	6-Ln Prime	56,400	50,000	**E**
	Medical Center Dr to Paseo Ladera		56,300		**E**
	Paseo Ladera to Paseo Ranchero/ Heritage Rd		56,700		**E**
	Paseo Ranchero/Heritage Rd to La Media Rd		55,400		**D**
Otay Lakes Rd	East H St to Telegraph Canyon Rd/Otay Lakes Rd	6-Ln Prime	42,800	50,000	B
	La Media Rd to Rutgers Ave		46,700		C
	Rutgers Ave to SR-125 SB Ramps		42,600		B
	SR-125 SB Ramps to SR-125 NB Ramps		50,800		**D**
	SR-125 NB Ramps to Eastlake Pkwy	7-Ln Expressway	48,900	70,000	A
	Eastlake Pkwy to Lane Ave	6-Ln Prime	30,400	50,000	A
	Lane Ave to Fenton St		17,700		A
	Fenton St to Hunte Pkwy		16,800		A
	Hunte Pkwy to Woods Dr		13,200		A
	Woods Dr to Lake Crest Dr		13,000		A
	Lake Crest Dr to Wueste Rd		6,400		A
	Wueste Rd to City of CV/County Boundary		6,400		A
Olympic Pkwy	La Media Rd to E Palomar St	6-Ln Prime	25,900	50,000	A
	E Palomar St to SR-125 SB Ramps		46,500		C
	SR-125 SB Ramps to SR-125 NB Ramps	6-Ln Prime	48,300	50,000	C
	SR-125 NB Ramps to Eastlake Pkwy	8-Ln Expressway	50,900	70,000	**D**
	Eastlake Pkwy to Hunte Pkwy	6-Ln Prime	33,700	50,000	A
	Hunte Pkwy to Olympic Vista Rd	4-Ln Major	20,100	30,000	A
	East of Olympic Vista Rd		10,400		A
Main Street	SR-125 NB Ramps to Eastlake Pkwy/Otay Valley Rd	6-ln Gateway	53,200	61,200 (LOS D)	C

TABLE 8.2A
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
FUTURE YEAR 2030 BASE CONDITIONS
(City of Chula Vista)

Roadway	Segment	Classification	Average Daily Traffic (ADT)	LOS Threshold (LOS C)	Level of Service (LOS)
Lane Ave	Proctor Valley Rd to Otay Lakes Rd	4-Ln Class I Collector	20,200	22,000	C
Hunte Pkwy	Proctor Valley Rd to Otay Lakes Rd	4-Ln Major	11,300	30,000	A
	Otay Lakes Rd to Clubhouse Dr		17,800		A
	Clubhouse Dr to Olympic Pkwy		18,600		A
	Olympic Pkwy to Eastlake Pkwy	6-Ln Prime	23,500	50,000	A
Otay Valley Rd	La Media Rd to SR-125 SB Ramps	4-Ln Major	25,200	30,000	B
	SR-125 SB Ramps to SR-125 NB Ramps		28,100		C
	SR-125 NB Ramps to Main Street		29,700		C

Source: Chen Ryan Associates; March 2015

Note:
Bold letter indicates unacceptable LOS D, E or F.

As shown in Table 8.2A, the following six (6) study area roadway segments within the City of Chula Vista would operate at unacceptable LOS D or E under Future Year 2030 Base conditions:

- Telegraph Canyon Rd, between Oleander Ave and Medical Center Dr (LOS E)
- Telegraph Canyon Rd, between Medical Center Dr and Paseo Ladera (LOS E)
- Telegraph Canyon Rd, between Paseo Ladera and Paseo Ranchero/Heritage Rd (LOS E)
- Telegraph Canyon Rd, between Paseo Ranchero/Heritage Rd and La Media Rd (LOS D)
- Otay Lakes Road, between SR-125 NB Ramps and SR-125 SB Ramps (LOS D)
- Olympic Pkwy, between SR-125 NB Ramps and East Lake Pkwy (LOS D)

Table 8.2B displays the Level of Service analysis results for key study area roadway segments within the County of San Diego under Future Year 2030 Base conditions.

TABLE 8.2B
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
FUTURE YEAR 2030 BASE CONDITIONS
(County of San Diego)

Roadway	Segment	Classification	Average Daily Traffic (ADT)	LOS Threshold (LOS D)	Level of Service (LOS)
Otay Lakes Rd	City of CV/County boundary to Driveway #2	4.2A	6,400	27,000	A
	Driveway #2 to SR-94	2.1D	6,400	13,500	C

Source: Chen Ryan Associates; March 2015

As shown in Table 8.2B, Otay Lakes Road in the County of San Diego would operate at an acceptable LOS C or better under Future Year 2030 Base conditions.

Freeway/State Highway Segment Analysis

Table 8.3 displays freeway Level of Service analysis results for I-805 and SR-125 under Future Year 2030 Base conditions. The freeway/state highway segment Level of Service analysis was performed utilizing the methodologies presented in Chapter 2.0.

TABLE 8.3
FREEWAY/STATE HIGHWAY SEGMENT LEVEL OF SERVICE RESULTS
FUTURE YEAR 2030 BASE CONDITIONS

Freeway / State Highway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	%HV	Volume (pc/h/ln)	V/C	LOS
I-805	Bonita Road to East H Street	326,600	7.8%	25,475	0.50	5M+1HOV	0.95	1.7%	2,251	0.938	**E**
	East H Street to Telegraph Canyon Road	325,400	7.8%	25,381	0.50	5M+1HOV	0.95	1.9%	2,253	0.939	**E**
	Telegraph Canyon Road to Olympic Parkway	286,100	7.1%	20,284	0.51	4M+1Aux +1HOV	0.95	1.7%	1,996	0.832	D
	Olympic Parkway to Main Street	271,500	7.1%	19,249	0.51	4M+1Aux +1HOV	0.95	1.7%	1,890	0.788	C
SR-125	SR-54 to Mt. Miguel Road	34,600	7.0%	2,422	0.60	2M	0.95	10.3%	808	0.337	A
	Mt Miguel Road to Proctor Valley Road	29,100	7.0%	2,037	0.60	2M	0.95	10.3%	675	0.281	A
	Proctor Valley Road to Otay Lakes Road	33,600	7.0%	2,352	0.60	2M	0.95	10.3%	786	0.328	A

TABLE 8.3
FREEWAY/STATE HIGHWAY SEGMENT LEVEL OF SERVICE RESULTS
FUTURE YEAR 2030 BASE CONDITIONS

Freeway / State Highway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	%HV	Volume (pc/h/ln)	V/C	LOS
SR-125	Otay Lakes Road to Olympic Parkway	29,600	7.0%	2,072	0.60	2M	0.95	10.3%	686	0.286	A
	Olympic Parkway to Birch Road	38,500	7.0%	2,695	0.60	2M	0.95	10.3%	897	0.374	A
	Birch Road to Main Street	33,500	7.0%	2,345	0.60	2M	0.95	10.3%	775	0.323	A
	Main Street to Otay Valley Road	38,300	7.0%	2,681	0.60	2M	0.95	10.3%	885	0.369	A
	Otay Valley Road to Lone Star Road	51,000	7.0%	3,570	0.60	2M	0.95	10.3%	1,184	0.493	B
	Lone Star Road to Otay Mesa Road	89,200	7.0%	6,244	0.60	2M	0.95	10.3%	2,070	0.863	D
	Otay Mesa Road to SR-905	78,700	7.0%	5,509	0.60	2M	0.95	10.3%	1,826	0.761	C

Source: Chen Ryan Associates; March 2015

Notes:
M = Mainline.
Aux = Auxiliary Lane.
HOV = High Occupancy Vehicle lane.

As shown in Table 8.3, all study I-805 freeway segments would operate at an acceptable LOS D or better under Future Year 2030 Base conditions, with the exception of the following two (2) segments:

- I-805, between Bonita Road and East H St (LOS E); and
- I-805, between East H St and Telegraph Canyon Rd (LOS E).

All segments along SR-125 would operate at acceptable LOS D or better under Future Year 2030 Base conditions.

Two-Lane Highway Segment Analysis

The signalization of the SR-94/Melody Road intersection would result in intersection spacing less than one mile along the study portions of SR-94, which would require the following three (3) SR-94 segments to be analyzed utilizing the "Two-Lane Highways with Signalized Intersection Spacing *Under* One Mile" methodology. Under this methodology, LOS along SR-94 is determined by the intersection operations for those intersections falling along the following segments of this facility:

- SR-94, between Lyons Valley Road and Jefferson Road;

- SR-94, between Jefferson Road and Maxfield Road; and
- SR-94, between Maxfield Road and Melody Road.

As shown previously in Table 8.1, all of the intersections (#42, #43 & #44) along the above segments are projected to operate at acceptable LOS D or better, thus SR-94 between Lyons Valley Road and Melody Road (the three segments identified above), would operate at acceptable LOS under Future Year 2030 Base conditions.

The segments of SR-94, between Melody Road and Otay Lakes Road, and south of Otay Lakes Road were analyzed utilizing the "Two-Lane Highways with Signalized Intersection Spacing *Over* One Mile" methodology as presented below.

Tables 8.4A and **8.4B** display two-lane highway Level of Service analysis results for SR-94 under Future Year 2030 Base conditions. This analysis was performed utilizing both the County of San Diego and Caltrans (same as HCM 2000) methodologies as described in Chapter 2.0. The two-lane highway HCM analysis worksheets are included in **Appendix V**.

TABLE 8.4A
2-LANE HIGHWAY SEGMENT LEVEL OF SERVICE RESULTS
COUNTY OF SAN DIEGO LOS CRITERIA
FUTURE YEAR 2030 BASE CONDITIONS

Highway	Segment	LOS Threshold (LOS D)	ADT	LOS
SR-94	Melody Road to Otay Lakes Road	16,200	11,700	D or better
	South of Otay Lakes Road		20,600	**E**

Source: Chen Ryan Associates; March 2015

Note: Bold letter indicates unacceptable LOS E or F.

As shown above, the segment of SR-94, south of Otay Lakes Road is projected to operate at an unacceptable LOS E under Future Year 2030 Base conditions based on County of San Diego LOS criteria.

TABLE 8.4B
2-LANE HIGHWAY SEGMENT LEVEL OF SERVICE RESULTS
CALTRANS AND HCM METHODOLOGY
FUTURE YEAR 2030 BASE CONDITIONS

Highway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	%HV	Volume (pc/h/ln)	Speed (mph)	LOS
SR-94	Melody Road to Otay Lakes Road	11,700	8.90%	1,041	0.67	1	0.92	5.0%	798	44.8	D
	South of Otay Lakes Road	20,600	8.40%	1,730	0.67	1	0.96	5.0%	1,271	44.8	D

Source: Chen Ryan Associates; March 2015

As shown in Table 8.4B, the segment of SR-94, from Melody Road to south of Otay Lakes Road, would operate at acceptable LOS D under Future Year 2030 Base conditions based on Caltrans/HCM methodology. Note that the segment of SR-94, north of Melody Road, was not analyzed using the Caltrans/HCM methodology as the proposed project would not add 50 or more peak hour trips in either direction of SR-94.

Ramp Intersection Capacity Analysis

Consistent with Caltrans requirements, the signalized I-805 freeway ramp intersections at Telegraph Canyon Road and along SR-125 at various interchanges were analyzed under Future Year 2030 Base conditions using the ILV procedures as described in Chapter 2.0. ILV analysis results are displayed in **Table 8.5** and analysis worksheets for the Future Year 2030 Base conditions are provided in **Appendix W**.

TABLE 8.5
RAMP INTERSECTION CAPACITY ANALYSIS
FUTURE YEAR 2030 BASE CONDITIONS

Ramp Intersection	Peak Hour	ILV / Hour	Description
I-805 SB Ramps / Telegraph Canyon Road	AM	1,210	*1200-1500: (At Capacity)*
	PM	1,795	*>1500: (Over Capacity)*
I-805 NB Ramps / Telegraph Canyon Road	AM	1,580	*>1500: (Over Capacity)*
	PM	1,358	*1200-1500: (At Capacity)*
SR-125 SB Ramps / Otay Lakes Road	AM	908	*<1200: (Under Capacity)*
	PM	1,377	*1200-1500: (At Capacity)*
SR-125 NB Ramps / Otay Lakes Road	AM	912	*<1200: (Under Capacity)*
	PM	1,301	*1200-1500: (At Capacity)*
SR-125 SB Ramps / Olympic Parkway	AM	903	*<1200: (Under Capacity)*
	PM	1,275	*1200-1500: (At Capacity)*
SR-125 NB Ramps / Olympic Parkway	AM	929	*<1200: (Under Capacity)*
	PM	1,300	*1200-1500: (At Capacity)*
SR-125 SB Ramps / Main Street	AM	1,598	*>1500: (Over Capacity)*
	PM	1,367	*1200-1500: (At Capacity)*
SR-125 NB Ramps / Main Street	AM	1,215	*1200-1500: (At Capacity)*
	PM	1,490	*1200-1500: (At Capacity)*
SR-125 SB Ramps / Otay Valley Road	AM	323	*<1200: (Under Capacity)*
	PM	533	*<1200: (Under Capacity)*
SR-125 SB Ramps / Otay Valley Road	AM	335	*<1200: (Under Capacity)*
	PM	548	*<1200: (Under Capacity)*
SR-125 SB Ramps / Otay Mesa Road	AM	732	*<1200: (Under Capacity)*
	PM	772	*<1200: (Under Capacity)*

TABLE 8.5
RAMP INTERSECTION CAPACITY ANALYSIS
FUTURE YEAR 2030 BASE CONDITIONS

Ramp Intersection	Peak Hour	ILV / Hour	Description
SR-125 SB Ramps / Otay Mesa Road	AM	567	*<1200: (Under Capacity)*
	PM	920	*<1200: (Under Capacity)*

Source: Chen Ryan Associates; March 2015

As shown in the table, both I-805 ramp intersections would operate at "At Capacity" and/or "Under Capacity" during both the AM and PM peak hours. All of the SR-125 ramp intersections would operate at "At Capacity" and/or "Under Capacity" during both the AM and PM peak hours under Future Year 2030 Base conditions with the exception of the following intersections:

- I-805 SB Ramps/Telegraph Canyon Road (PM peak hour)
- I-805 NB Ramps/Telegraph Canyon Road (AM peak hour)
- SR-125 SB Ramps / Main Street – Over Capacity (AM peak hour)

Ramp Metering Analysis

Table 8.6 displays the ramp metering analysis conducted at the I-805 NB On-Ramp at Telegraph Canyon Road under Future Year 2030 Base conditions. Similar to the Existing conditions, it is assumed that approximately 80% of the total arrival traffic would utilize the two non-HOV lanes.

TABLE 8.6
RAMP METERING ANALYSIS
FUTURE YEAR 2030 BASE CONDITIONS

Location	Peak Hour	Demand[1] (veh/hr)	Meter Rate[2] (veh/hr)	Excess Demand[3] (veh/hr)	Delay[4] (min)	Queue[5] (ft)
I-805 NB On-Ramp @ Telegraph Canyon Road	AM	1,989	1,824	165	5.4	2,400

Source: Chen Ryan Associates; March 2015

Notes:
1. Demand is the peak hour demand expected to use the on-ramp.
2. Meter Rate is the peak hour capacity expected to be processed through the ramp meter. This value was obtained from Caltrans.
3. Excess Demand = (Demand) – (Meter Rate) or zero, whichever is greater.
4. Delay = (Excess Demand / Meter Rate) X 60 min/hr.
5. Queue = (Excess Demand) X 29 ft/veh.

As shown in Table 8.6, the AM peak hour demand at the NB On-Ramp would be greater than the capacity provided by the ramp meter under Future Year 2030 Base conditions. However, based upon SANTEC/ITE Guidelines, the projected delay of 5.4 minutes (less than 15 min.) would be acceptable.

8.3 Future Year 2030 Base Plus Project (Buildout) Conditions

This section provides an analysis of longer-term base traffic conditions with the addition of buildout of the project.

Intersection and roadway geometrics under Future Year 2030 Base Plus Project (Buildout) conditions were assumed to be identical to the Year 2030 Base conditions, ~~with the~~ with the construction of the three (3) project driveways for frontage and access, as follows:

- Project Driveway #1/Intersection #42 @ Otay Lakes Road – signalized T-intersection;
- Project Driveway #2/Intersection #43 @ Otay Lakes Road – roundabout; and
- Project Driveway #3/Intersection #44 @ Otay Lakes Road – roundabout.

~~addition of the three (3) project driveways, as follows:~~

~~Project Driveway #1 @ Otay Lakes Road – signalized T-intersection;~~
~~Project Driveway #2 @ Otay Lakes Road – roundabout; and~~
~~Project Driveway #3 @ Otay Lakes Road – roundabout.~~

Peak hour traffic volumes at the key study area intersections are displayed in **Figure 8-3A**, while average daily traffic volumes on study area roadway segments are displayed in **Figure 8-3B**.

Analyses were conducted using the methodologies described in Chapter 2.0. Intersection, roadway segment, and freeway/state highway Level of Service results are discussed in the following sections.

Intersection Analysis

Table 8.7 displays intersection Level of Service and average vehicle delay results under Future Year 2030 Base Plus Project (Buildout) conditions. Level of Service calculation worksheets for the Year 2030 Base Plus Project (Buildout) conditions are provided in **Appendix X**.

As shown in Table 8.7, all of the study area intersections would continue to operate at acceptable LOS D or better during both the AM and PM peak hours under Future Year 2030 Base Plus Project (Buildout) conditions.

Roadway Segment Analysis

Tables 8.8A and **8.8B** display the Level of Service analysis results for the key roadway segments under Future Year 2030 Base Plus Project (Buildout) conditions in the City of Chula Vista and in the County of San Diego, respectively.

As shown in Tables 8.8A and 8.8B, the following nine (9) roadway segments located in the City of Chula Vista would operate at unacceptable LOS D or E under Future Year 2030 Base Plus Project (Buildout) conditions:

- Telegraph Canyon Rd, between Oleander Ave and Medical Center Dr (LOS E) – Proposed buildout project trips would comprise 3.7% (less than 5%) of the total segment volume, and would add 2,200 ADT (more than 800 ADT). However, the intersections of Telegraph Canyon Road / Oleander Avenue and Telegraph Canyon Road / Medical Center Drive are projected to operate at acceptable LOS D or better during the peak hours; thus, the project would not have a significant impact to this roadway segment.

- Telegraph Canyon Rd, between Medical Center Dr and Paseo Ladera (LOS E) – Proposed buildout project trips would comprise 4.1% (less than 5%) of the total segment volume, and would add 2,420 ADT (more than 800 ADT). However, the intersections of Telegraph Canyon Road / Medical Center Drive and Telegraph Canyon Road / Paseo Ladera are projected to operate at acceptable LOS D or better during the peak hours. Thus, the project would not have a significant impact to this roadway segment.

TABLE 8.7
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
FUTURE YEAR 2030 BASE PLUS PROJECT (BUILDOUT) TRAFFIC CONDITIONS

Intersection	Future Year 2030 + Project (Buildout)				Future Year 2030 w/o Project		Impact Criteria by Jurisdiction			Significant Impact?
							Caltrans/ San Diego	Chula Vista	County	
	AM Peak Hour		PM Peak Hour		Avg. Delay (sec.) AM/PM	LOS AM/PM	Change in Delay (sec.) AM/PM	Project % of Entering Volume AM/PM	Project Traffic to Critical Movements AM/PM	
	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS						
1. East H Street / Otay Lakes Road	41.1	D	40.4	D	40.4 / 38.1	D / D		1.6% / 1.9%		No
2. Proctor Valley Road / Hunte Parkway	28.8	C	38.4	D	28.2 / 38.0	C / D		1.9% / 2.6%		No
3. Telegraph Canyon Road / I-805 SB Ramps	34.5	C	46.6	D	31.1 / 36.3	C / D	3.4 / 10.3	1.2% / 2.3%		No
4. Telegraph Canyon Road / I-805 NB Ramps	53.5	D	37.1	D	49.9 / 35.2	D / D	3.6 / 1.9	2.7% / 3.0%		No
5. Telegraph Canyon Road / Oleander Avenue	29.5	C	48.7	D	28.5 / 41.5	C / D		3.0% / 3.3%		No
6. Telegraph Canyon Road / Paseo Del Rey	33.0	C	52.4	D	33.0 / 52.2	C / D		3.2% / 3.6%		No
7. Telegraph Canyon Road / Medical Center Drive	18.7	B	25.7	C	17.9 / 22.4	B / C		3.2% / 4.2%		No
8. Telegraph Canyon Road / Paseo Ladera	41.3	D	32.0	C	39.4 / 30.2	D / C		3.8% / 5.4%		No
9. Telegraph Canyon Road / Paseo Ranchero/Heritage Road	46.8	D	43.3	D	44.7 / 40.2	D / D		3.4% / 4.4%		No
10. Telegraph Canyon Road / Otay Lakes Road/La Media Road	40.9	D	41.5	D	36.5 / 36.6	D / D		4.8% / 6.1%		No
11. Otay Lakes Road / Rutgers Avenue	13.4	B	12.7	B	13.1 / 12.7	B / B		8.9% / 10.8%		No

TABLE 8.7
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
FUTURE YEAR 2030 BASE PLUS PROJECT (BUILDOUT) TRAFFIC CONDITIONS

Intersection	Future Year 2030 + Project (Buildout)				Future Year 2030 w/o Project		Impact Criteria by Jurisdiction			Significant Impact?
							Caltrans/ San Diego	Chula Vista	County	
	AM Peak Hour		PM Peak Hour							
	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS	Avg. Delay (sec.) AM/PM	LOS AM/PM	Change in Delay (sec.) AM/PM	Project % of Entering Volume AM/PM	Project Traffic to Critical Movements AM/PM	
12. Otay Lakes Road / SR-125 SB Ramps	5.0	A	10.1	B	4.4 / 8.0	A / A	0.6 / 2.1	10.1% / 9.8%		No
13. Otay Lakes Road / SR-125 NB Ramps	4.5	A	5.0	A	4.5 / 4.3	A / A	0.0 / 0.7	10.9% / 10.5%		No
14. Otay Lakes Road / Eastlake Parkway	44.1	D	41.4	D	39.3 / 39.0	D / D		11.2% / 10.9%		No
15. Otay Lakes Road / Lane Avenue	19.3	B	22.7	C	19.3 / 22.7	B / C		20.6% / 22.2%		No
16. Otay Lakes Road / Fenton Street	6.4	A	12.4	B	6.4 / 12.4	A / B		24.6% / 30.1%		No
17. Otay Lakes Road / Hunte Parkway	31.9	C	34.4	C	27.3 / 26.2	C / C		25.7% / 34.2%		No
18. Otay Lakes Road / Woods Drive	11.2	B	5.4	A	11.2 / 5.4	B / A		40.6% / 51.8%		No
19. Otay Lakes Road / Lake Crest Drive	17.7	B	11.4	B	17.7 / 11.4	B / B		42.5% / 51.4%		No
20. Otay Lakes Road / Wueste Road	6.6	A	12.7	B	4.7 / 8.4	A / A		55.5% / 59.6%		No
21. Otay Lakes Road / SR-94 (County)*	24.6	C	42.1	D	18.9 / 28.0	B / C	5.7 / 14.1		EBL: +65 / +44	No
22. Olympic Parkway / East Palomar Street	30.5	C	54.0	D	30.1 / 54.0	C / D		1.7% / 1.7%		No
23. Olympic Parkway / SR-125 SB Ramps	9.6	A	8.9	A	9.5 / 8.9	A / A	0.1 / 0.0	2.5% / 2.1%		No
24. Olympic Parkway / SR-125 NB Ramps	8.5	A	6.6	A	8.4 / 5.9	A / A	0.1 / 0.7	2.6% / 2.5%		No

TABLE 8.7
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
FUTURE YEAR 2030 BASE PLUS PROJECT (BUILDOUT) TRAFFIC CONDITIONS

Intersection	Future Year 2030 + Project (Buildout)				Future Year 2030 w/o Project		Impact Criteria by Jurisdiction			Significant Impact?
							Caltrans/ San Diego	Chula Vista	County	
	AM Peak Hour		PM Peak Hour		Avg. Delay (sec.) AM/PM	LOS AM/PM	Change in Delay (sec.) AM/PM	Project % of Entering Volume AM/PM	Project Traffic to Critical Movements AM/PM	
	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS						
25. Olympic Parkway / Eastlake Parkway	29.3	C	32.7	C	28.6 / 31.3	C / C		3.4% / 3.4%		No
26. Olympic Parkway / Hunte Parkway	31.3	C	32.3	C	30.4 / 29.9	C / C		12.1% / 13.2%		No
27. Olympic Parkway / Olympic Vista Road	26.2	C	23.3	C	26.2 / 23.3	C / C		7.0% / 8.1%		No
28. Olympic Parkway / Wueste Road	15.1	B	12.9	B	15.1 / 12.6	B / B		20.5% / 21.9%		No
29. Lake Crest Drive / Wueste Road	11.3	B	10.5	B	8.3 / 8.4	A / A		17.0% / 18.6%		No
30. Main Street / SR-125 SB Ramps	13.2	B	18.0	B	13.2 / 18.0	B / B		0.6% / 0.8%		No
31. Main Street / SR-125 NB Ramps	18.1	B	45.8	D	18.1 / 45.1	B / D		0.7% / 0.8%		No
32. Main Street / Eastlake Parkway	35.4	D	52.7	D	34.7 / 52.7	C / D		5.1% / 6.1%		No
33. Otay Valley Road / SR-125 SB Ramps	11.4	B	15.5	B	11.4 / 15.4	B / B		4.6% / 2.5%		No
34. Otay Valley Road / SR-125 NB Ramps	9.1	A	12.2	B	8.5 / 11.2	A / B		9.1% / 8.0%		No
35. Otay Mesa Road / La Media Road (SD)	44.6	D	48.3	D	43.6 / 48.3	D / D	1.0 / 0.0			No
36. Otay Mesa Road / SR-125 SB Ramps (SD)	9.4	A	8.5	A	8.5 / 8.0	A / A	0.9 / 0.5			No
37. Otay Mesa Road / SR-125 NB Ramps (SD)	10.4	B	11.5	B	10.3 / 11.2	B / B	0.1 / 0.3			No

TABLE 8.7
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
FUTURE YEAR 2030 BASE PLUS PROJECT (BUILDOUT) TRAFFIC CONDITIONS

Intersection	Future Year 2030 + Project (Buildout)				Future Year 2030 w/o Project		Impact Criteria by Jurisdiction			Significant Impact?
							Caltrans/ San Diego	Chula Vista	County	
	AM Peak Hour		PM Peak Hour		Avg. Delay (sec.) AM/PM	LOS AM/PM	Change in Delay (sec.) AM/PM	Project % of Entering Volume AM/PM	Project Traffic to Critical Movements AM/PM	
	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS						
38. Otay Mesa Road / Ellis Road (County)	32.0	C	26.1	C	30.1 / 24.3	C / C	1.9 / 1.8		EBL: +11 / +7	No
39. SR-94 / Melody Road (County)	9.7	A	13.2	B	9.6 / 12.6	A / B	0.1 / 0.6		EBL: +0 / +0	No
40. SR-94 / Maxfield Road (County)*	16.3	C	24.3	C	15.8 / 22.9	C / C	0.5 / 1.4		EBL: +0 / +0	No
41. SR-94 / Jefferson Road (County)	45.5	D	40.2	D	43.0 / 40.2	D / D	2.5 / 0.0		SBL: +6 / +14	No
42. Otay Lakes Road @ Project Driveway #1 (County)	12.3	B	15.6	B	Does Not Exist				EBL: +59 / +144	No
43. Otay Lakes Road @ Project Driveway #2[RA] (County)	8.8	A	34.7	D	Does Not Exist				EBL: +378 / +926	No
44. Otay Lakes Road @ Project Driveway #3[RA] (County)	6.9	A	6.6	A	Does Not Exist				SBL: +59 / +144	No

Source: Chen Ryan Associates; March 2015

Notes:
Bold letter indicates unacceptable LOS E of F.
* For two-way stop controlled intersections, the delay shown is the worst delay experienced by any of the approaches.
RA = Roundabout. Rodel software is utilized for the peak hour operational analysis.

TABLE 8.8A
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
FUTURE YEAR 2030 BASE PLUS PROJECT (BUILDOUT) CONDITIONS
(City of Chula Vista)

Roadway	Segment	Classification	ADT	LOS Threshold (LOS C)	LOS w/ Project	Project Contribution ≥ 5%?	Project ADT > 800?	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
Proctor Valley Rd	Lane Ave to Hunte Pkwy	6-Ln Prime	29,600	50,000	A				No
Telegraph Canyon Rd	I-805 SB Ramps to I-805 NB Ramps	7-Ln Expressway	52,200	70,000	A				No
	I-805 NB Ramps to Oleander Ave		60,600		B				No
	Oleander Ave to Medical Center Dr	6-Ln Prime	58,600	50,000	**E**	3.8%	2,200	Yes	No
	Medical Center Dr to Paseo Ladera		58,700		**E**	4.1%	2,420	Yes	No
	Paseo Ladera to Paseo Ranchero/Heritage Rd		59,300		**E**	4.4%	2,630	Yes	No
	Paseo Ranchero/Heritage Rd to La Media Rd		58,500		**E**	5.2%	3,070	Yes	No
Otay Lakes Rd	East H St to Telegraph Canyon Rd/Otay Lakes Rd	6-Ln Prime	43,900	50,000	C				No
	La Media Rd to Rutgers Ave		51,500		**D**	9.4%	4,830	Yes	No
	Rutgers Ave to SR-125 SB Ramps		47,400		C				No
	SR-125 SB Ramps to SR-125 NB Ramps		56,100		**D**	9.4%	5,270	Yes	No
	SR-125 NB Ramps to Eastlake Pkwy	7-Ln Expressway	55,900	70,000	B				No

TABLE 8.8A
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
FUTURE YEAR 2030 BASE PLUS PROJECT (BUILDOUT) CONDITIONS
(City of Chula Vista)

Roadway	Segment	Classification	ADT	LOS Threshold (LOS C)	LOS w/ Project	Project Contribution ≥ 5%?	Project ADT > 800?	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
Otay Lakes Rd	Eastlake Pkwy to Lane Ave	6-Ln Prime	38,300	50,000	B				No
	Lane Ave to Fenton St		26,500		A				No
	Fenton St to Hunte Pkwy		25,820		A				No
	Hunte Pkwy to Woods Dr		26,820		A				No
	Woods Dr to Lake Crest Dr		27,740		A				No
	Lake Crest Dr to Wueste Rd		22,160		A				No
	Wueste Rd to City of CV/County boundary		25,860		A				No
Olympic Pkwy	La Media Rd to E Palomar St	6-Ln Prime	26,100	50,000	A				No
	E Palomar St to SR-125 SB Ramps		46,700		C				No
	SR-125 SB Ramps to SR-125 NB Ramps		48,500		C				No
	SR-125 NB Ramps to Eastlake Pkwy	8-Ln Expressway	51,100	70,000	**D**	0.4%	220	Yes	No
	Eastlake Pkwy to Hunte Pkwy	6-Ln Prime	35,200	50,000	A				No
	Hunte Pkwy to Olympic Vista Rd	4-Ln Major	23,600	30,000	B				No
	East of Olympic Vista Rd		13,900		A				No
Main Street	SR-125 NB Ramps to Eastlake Pkwy/Otay Valley Rd	6-ln Gateway	54,900	61,200 (LOS D)	**D**	3.1%	1,700	Yes	No
Lane Ave	Proctor Valley Rd to Otay Lakes Rd	4-Ln Class I Collector	21,100	22,000	C				No

TABLE 8.8A
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
FUTURE YEAR 2030 BASE PLUS PROJECT (BUILDOUT) CONDITIONS
(City of Chula Vista)

Roadway	Segment	Classification	ADT	LOS Threshold (LOS C)	LOS w/ Project	Project Contribution ≥ 5%?	Project ADT > 800?	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
Hunte Pkwy	Proctor Valley Rd to Otay Lakes Rd	4-Ln Major	12,400	30,000	A				No
	Otay Lakes Rd to Clubhouse Dr		21,300		A				No
	Clubhouse Dr to Olympic Pkwy		21,400		A				No
	Olympic Pkwy to Eastlake Pkwy	6-Ln Prime	27,900	50,000	A				No
Otay Valley Rd	La Media Rd to SR-125 SB Ramps	4-Ln Major	26,700	30,000	C				No
	SR-125 SB Ramps to SR-125 NB Ramps		29,600		C				No
	SR-125 NB Ramps to Main Street		31,500		**D**	0.4%	220	Yes	No

Source: Chen Ryan Associates; March 2015

Note:
Bold letter indicates unacceptable LOS D, E or F.

TABLE 8.8B
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
FUTURE YEAR 2030 BASE PLUS PROJECT (BUILDOUT) CONDITIONS
(County of San Diego)

Roadway	Segment	Cross-Sections	ADT	LOS Threshold (LOS D)	LOS w/ Project	LOS w/o Project	Significant Impact?
Otay Lakes Rd	City of CV/County boundary to Driveway #1	4.2A	25,860	27,000	D	A	No
	Driveway #1 to Driveway #2		24,060		C	A	No
	Driveway #2 to Driveway #3	2.1D	10,500	13,500	D	C	No
	Driveway #3 to SR-94		8,850		D	C	No

Source: Chen Ryan Associates; March 2015

- Telegraph Canyon Rd, between Paseo Ladera and Paseo Ranchero/Heritage Rd (LOS E) – Proposed buildout project trips would comprise 4.4% (less than 5%) of the total segment volume, and would add 2,630 ADT (more than 800 ADT). However, the intersections of Telegraph Canyon Road / Paseo Ladera and Telegraph Canyon Road / Paseo Ranchero/Heritage Road are projected to operate at acceptable LOS D or better during the peak hours. Thus, the project would not have a significant impact to this roadway segment.
- Telegraph Canyon Rd, between Paseo Ranchero/Heritage Rd and La Media Rd (LOS E) – Proposed buildout project trips would comprise 5.2% (more than 5%) of the total segment volume, and would add 3,070 ADT (more than 800 ADT). However, the intersections of Telegraph Canyon Road / Paseo Ranchero/Heritage Road and Telegraph Canyon Road / La Media Road are projected to operate at acceptable LOS D or better during the peak hours. Thus, the project would not have a significant impact to this roadway segment.
- Otay Lakes Road, between La Media Road and Rutger Avenue (LOS D) – Proposed buildout project trips would comprise 9.4% (more than 5%) of the total segment volume, and would add 4,830 ADT (more than 800 ADT). However, the intersections of Otay Lakes Road / La Media Road and Otay Lakes Road / Rutger Avenue are projected to operate at acceptable LOS D or better during the peak hours. Thus, the project would not have a significant impact to this roadway segment.
- Otay Lakes Road, between SR-125 SB Ramps and SR-125 NB Ramps (LOS D) – Proposed buildout project trips would comprise 9.4% (more than 5%) of the total segment volume, and would add 5,270 ADT (more than 800 ADT). However, the intersections of Otay Lakes Road / SR-125 SB Ramps and Otay Lakes Road / SR-125 NB Ramps are projected to operate at acceptable LOS B or better during the peak hours. Thus, the project would not have a significant impact to this roadway segment.
- Olympic Pkwy, between SR-125 NB Ramps and Eastlake Pkwy (LOS D) – Proposed buildout project trips would comprise 0.4% (less than 5%) of the total segment volume, and would add 220 ADT (less than 800 ADT). Additionally, the intersections of Olympic Parkway / East Palomar Street and Olympic Parkway / SR-125 SB Ramps are projected to operate at acceptable LOS D or better during the peak hours. Thus, the project would not have a significant impact to this roadway segment.
- Otay Valley Road, between SR-125 NB Ramps and Main Street (LOS D) – Proposed buildout project trips would comprise 0.4% (less than 5%) of the total segment volume, and would add 220 ADT (less than 800 ADT). Additionally, the intersections of Otay Valley Road / SR-125 NB Ramps and Main Street / Otay Valley Road/Eastlake Pkwy are projected to operate at acceptable LOS D or better during the peak hours. Thus, the project would not have a significant impact to this roadway segment.
- Main Street, between SR-125 NB Ramps and Eastlake Pkwy (LOS D) – Proposed buildout project trips would comprise 3.1% (less than 5%) of the total segment volume, and would add 1,700 ADT (more than 800 ADT). However, the intersections of Main Street / SR-125 NB Ramps and Main Street / Eastlake Parkway are projected to operate at acceptable LOS D or better during the peak hours. Thus, the project would not have a significant impact to this roadway segment.

Based upon the significant impact criteria in Section 2.8, the addition of the project traffic would not cause a significantly impact to any of the studied roadway segments.

All roadway segments within the County of San Diego study area are projected to operate at acceptable LOS D or better under Future Year 2030 Base Plus Project conditions.

Freeway/State Highway Segment Analysis

The freeway/state highway segment Level of Service analyses were performed utilizing the methodologies presented in Chapter 2.0. **Table 8.9** displays the resulting Level of Service for I-805 and SR-125 under Future Year 2030 Base Plus Project (Buildout) conditions.

As shown in the table, all segments along I-805 and SR-125 would continue to operate at acceptable LOS D or better under Future Year 2030 Base Plus Project (Buildout) condition, with the exception of the following two (2) segments:

- I-805, between Bonita Road and East H St (LOS E) - The project traffic would increase the V/C ratio by 0.009 (less than .01); therefore, the project does not have a significant impact to this freeway segment.
- I-805, between East H St and Telegraph Canyon Rd (LOS E) - The project traffic would increase the V/C ratio by 0.004 (less than .01); therefore, the project does not have a significant impact to this freeway segment.

TABLE 8.9
FREEWAY/STATE HIGHWAY SEGMENT LEVEL OF SERVICE RESULTS
FUTURE YEAR 2030 BASE PLUS PROJECT (BUILDOUT) CONDITIONS

Freeway / State Highway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	% of Heavy Vehicle	Volume (pc/h/ln)	V/C	LOS w/ Project	Change in V/C (compare to 2030 w/o project)	Significant Impact?
I-805	Bonita Road to East H Street	328,700	7.8%	25,639	0.50	5M+1HOV	0.95	1.7%	2,272	0.947	**E**	0.009	No
	East H Street to Telegraph Canyon Road	327,500	7.8%	25,545	0.50	5M+1HOV	0.95	1.9%	2,263	0.943	**E**	0.004	No
	Telegraph Canyon Road to Olympic Parkway	286,300	7.1%	20,299	0.51	4M+1Aux+ 1HOV	0.95	1.7%	1,996	0.832	D	0.000	No
	Olympic Parkway to Main Street	271,500	7.1%	19,249	0.51	4M+1Aux+ 1HOV	0.95	1.7%	1,890	0.788	C	0.000	No
SR-125	SR-54 to Mt. Miguel Road	35,500	7.0%	2,485	0.60	2M	0.95	10.3%	830	0.346	A	0.009	No
	Mt Miguel Road to Proctor Valley Road	30,900	7.0%	2,163	0.60	2M	0.95	10.3%	719	0.300	A	0.018	No
	Proctor Valley Road to Otay Lakes Road	34,900	7.0%	2,443	0.60	2M	0.95	10.3%	808	0.337	A	0.009	No
	Otay Lakes Road to Olympic Parkway	30,800	7.0%	2,156	0.60	2M	0.95	10.3%	719	0.300	A	0.014	No
	Olympic Parkway to Birch Road	38,900	7.0%	2,723	0.60	2M	0.95	10.3%	908	0.378	A	0.005	No
	Birch Road to Main Street	33,900	7.0%	2,373	0.60	2M	0.95	10.3%	786	0.328	A	0.005	No
	Main Street to Otay Valley Road	38,700	7.0%	2,709	0.60	2M	0.95	10.3%	897	0.374	A	0.005	No
	Otay Valley Road to Lone Star Road	51,700	7.0%	3,619	0.60	2M	0.95	10.3%	1,206	0.503	B	0.009	No

TABLE 8.9
FREEWAY/STATE HIGHWAY SEGMENT LEVEL OF SERVICE RESULTS
FUTURE YEAR 2030 BASE PLUS PROJECT (BUILDOUT) CONDITIONS

Freeway / State Highway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	% of Heavy Vehicle	Volume (pc/h/ln)	V/C	LOS w/ Project	Change in V/C (compare to 2030 w/o project)	Significant Impact?
SR-125	Lone Star Road to Otay Mesa Road	90,700	7.0%	6,349	0.60	2M	0.95	10.3%	2,103	0.876	D	0.014	No
	Otay Mesa Road to SR-905	80,200	7.0%	5,614	0.60	2M	0.95	10.3%	1,859	0.775	C	0.014	No

Source: Chen Ryan Associates; March 2015

Note:
Bold letter indicates unacceptable LOS E or F.

Two-Lane Highway Segment Analysis

The signalization of the SR-94/Melody Road intersection would result in intersection spacing less than one mile along the study portions of SR-94, which would require the following three (3) SR-94 segments to be analyzed utilizing the "Two-Lane Highways with Signalized Intersection Spacing *Under* One Mile" methodology. Under this methodology, the LOS for this type of facility is determined by the intersection operations of those intersections falling along the following segments of SR-94:

- SR-94, between Lyons Valley Road and Jefferson Road;
- SR-94, between Jefferson Road and Maxfield Road; and
- SR-94, between Maxfield Road and Melody Road.

As shown previously in Table 8.7, all of the intersections (#42, #43 & #44) along the above segments are projected to operate at acceptable LOS D or better, thus SR-94 between Lyons Valley Road and Melody Road (the three segments identified above), would operate at acceptable LOS under Future Year 2030 Base Plus Project (Buildout) conditions.

The segments of SR-94 between Melody Road and Otay Lakes Road and south of Otay Lakes Road were analyzed utilizing the "Two-Lane Highways with Signalized Intersection Spacing *Over* One Mile" methodology as presented below.

Tables 8.10A and **8.10B** display two-lane highway Level of Service analysis results for SR-94 under Future Year 2030 Base Plus Project (Buildout) conditions. This analysis was performed utilizing both the County of San Diego and Caltrans (same as HCM 2000) methodologies. The two-lane highway HCM analysis worksheets are included in **Appendix Y**.

As shown in Table 8.10A, the segment of SR-94, south of Otay Lakes Road would operate at an unacceptable LOS E under Future Year 2030 Base Plus Project (Buildout) conditions based on County of San Diego LOS criteria. The additional trips generated by buildout of the project would contribute to a cumulative traffic impact at this location. However, this segment was also analyzed (see Table 8.10B) utilizing the Caltrans/HCM methodologies and the peak hour travel speeds were calculated to be at LOS D. Peak hour operations are considered to be a better indicator of the true roadway operating conditions. Thus, it was determined that no mitigation would be required at the subject SR-94 segment.

As shown in Table 8.10B, SR-94, from Melody Road to south of Otay Lakes Road, would operate at acceptable LOS D based on Caltrans/HCM methodology. The addition of trips generated by buildout of the project would not cause any significant traffic impacts to SR-94 based on Caltrans/HCM 2-lane highway analysis methodology. The segment of SR-94, north of Melody Road, was not analyzed using the Caltrans/HCM methodology as the proposed project would not add 50 or more peak hour trips in either direction of SR-94.

TABLE 8.10A
2-LANE HIGHWAY SEGMENT LEVEL OF SERVICE RESULTS
COUNTY OF SAN DIEGO LOS CRITERIA
FUTURE YEAR 2030 BASE PLUS PROJECT (BUILDOUT) CONDITIONS

Highway	Segment	LOS Threshold (LOS D)	ADT	LOS w/ Project	LOS w/o Project	Project ADT	Significant Impact?
SR-94	Melody Road to Otay Lakes Road	16,200	12,800	D or better	D or better	880	No
	South of Otay Lakes Road		21,480	**E**	**E**	880	**Yes (Cumulative)**

Source: Chen Ryan Associates; March 2015

Note:
Bold letter indicates unacceptable LOS E or F.

TABLE 8.10B
2-LANE HIGHWAY SEGMENT LEVEL OF SERVICE RESULTS
CALTRANS AND HCM METHODOLOGY
FUTURE YEAR 2030 BASE PLUS PROJECT (BUILDOUT) CONDITIONS

Highway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	% HV	Volume (pc/h/ln)	Speed (mph)	LOS w/ Project	LOS w/o Project	Significant Impact?
SR-94	Melody Road to Otay Lakes Road	12,800	8.9%	1,139	0.67	1	0.92	5.0%	871	44.8	D	D	No
	South of Otay Lakes Road	21,480	8.4%	1,739	0.67	1	0.96	5.0%	1,277	44.1	D	D	No

Source: Chen Ryan Associates; March 2015

Ramp Intersection Capacity Analysis

Consistent with Caltrans requirements, the signalized freeway ramp intersections along I-805 at Telegraph Canyon Road and along SR-125 at various interchanges were analyzed under Future Year 2030 Base Plus Project (Buildout) conditions using the ILV procedures as described in Chapter 2.0. ILV analysis results are displayed in **Table 8.11** and analysis worksheets for the Future Year 2030 Base Plus Project (Buildout) conditions are provided in **Appendix Z**.

TABLE 8.11
RAMP INTERSECTION CAPACITY ANALYSIS
FUTURE YEAR 2030 BASE PLUS PROJECT (BUILDOUT) CONDITIONS

Ramp Intersection	Peak Hour	ILV / Hour	Description
I-805 SB Ramps / Telegraph Canyon Road	AM	1,416	*1200-1500: (At Capacity)*
	PM	1,865	*>1500: (Over Capacity)*
I-805 NB Ramps / Telegraph Canyon Road	AM	1,629	*>1500: (Over Capacity)*
	PM	1,238	*1200-1500: (At Capacity)*
SR-125 SB Ramps / Otay Lakes Road	AM	1,016	*<1200: (Under Capacity)*
	PM	1,545	*>1500: (Over Capacity)*
SR-125 NB Ramps / Otay Lakes Road	AM	1,025	*<1200: (Under Capacity)*
	PM	1,447	*1200-1500: (At Capacity)*
SR-125 SB Ramps / Olympic Parkway	AM	924	*<1200: (Under Capacity)*
	PM	1,304	*1200-1500: (At Capacity)*
SR-125 NB Ramps / Olympic Parkway	AM	966	*<1200: (Under Capacity)*
	PM	1,351	*1200-1500: (At Capacity)*
SR-125 SB Ramps / Main Street	AM	1,603	*>1500: (Over Capacity)*
	PM	1,380	*1200-1500: (At Capacity)*
SR-125 NB Ramps / Main Street	AM	1,225	*1200-1500: (At Capacity)*
	PM	1,502	*>1500: (Over Capacity)*
SR-125 SB Ramps / Otay Valley Road	AM	350	*<1200: (Under Capacity)*
	PM	569	*<1200: (Under Capacity)*
SR-125 SB Ramps / Otay Valley Road	AM	370	*<1200: (Under Capacity)*
	PM	594	*<1200: (Under Capacity)*
SR-125 SB Ramps / Otay Mesa Road	AM	776	*<1200: (Under Capacity)*
	PM	819	*<1200: (Under Capacity)*
SR-125 SB Ramps / Otay Mesa Road	AM	590	*<1200: (Under Capacity)*
	PM	1,004	*<1200: (Under Capacity)*

Source: Chen Ryan Associates; March 2015

As shown in the table, all of the SR-125 and I-805 ramp intersections would operate at "At Capacity" and/or "Under Capacity" during both the AM and PM peak hours under Future Year 2030 Plus Project (Buildout) conditions with the exception of the following intersections:

- I-805 SB Ramps/Telegraph Canyon Road (PM peak hour)
- I-805 NB Ramps/Telegraph Canyon Road (AM peak hour)
- SR-125 SB Ramps / Otay Lakes Road (PM peak hour)
- SR-125 SB Ramps / Main Street (AM peak hour)
- SR-125 NB Ramps / Main Street (PM peak hour)

Ramp Metering Analysis

Table 8.12 displays the ramp metering analysis conducted at the I-805 NB On-Ramp at Telegraph Canyon Road under Future Year 2030 Base Plus Project (Buildout) conditions. Similar to the Existing conditions, it is assumed that approximately 80% of the total arrival traffic would utilize the two non-HOV lanes.

TABLE 8.12
RAMP METERING ANALYSIS
FUTURE YEAR 2030 BASE PLUS PROJECT (BUILDOUT) CONDITIONS

Location	Peak Hour	Demand[1] (veh/hr)	Meter Rate[2] (veh/hr)	Excess Demand[3] (veh/hr)	Delay w/ Project[4] (min)	Queue[5] (ft)	Delay w/o Project (min)	Significant Impact?
I-805 NB On-Ramp @ Telegraph Canyon Road	AM	2,097	1,824	273	8.9	3,950	5.4	No

Source: Chen Ryan Associates; March 2015

Notes:
1. Demand is the peak hour demand expected to use the on-ramp.
2. Meter Rate is the peak hour capacity expected to be processed through the ramp meter. This value was obtained from Caltrans.
3. Excess Demand = (Demand) – (Meter Rate) or zero, whichever is greater.
4. Delay = (Excess Demand / Meter Rate) X 60 min/hr.
5. Queue (Per Ramp Lane) = (Excess Demand) X 29 ft/veh/# of non-HOV lanes.

As shown in Table 8.12, the AM peak hour demand at the NB On-Ramp would be greater than the capacity provided by the ramp meter under the Future Year 2030 Base Plus Project (Buildout) traffic conditions. However, based upon SANTEC/ITE Guidelines, the projected delay of 8.9 minutes (less than 15 min.) would be acceptable. The proposed project would not result in any significant impact at this on-ramp.

Impact Significance and Mitigation

This section identifies required mitigation measures for intersection and roadway facilities that would be significantly impacted by project-related traffic under Future Year 2030 Base Plus Project (Buildout) conditions.

Intersections

None of the study area intersections would be significantly impacted, and therefore no mitigation measures would be required under Future Year 2030 Base Plus Project (Buildout) conditions.

Roadway Segments

None of the study area roadway segments would be significantly impacted, and therefore no mitigation measures would be required under Future Year 2030 Base Plus Project (Buildout) conditions.

Freeways/State Highways

None of the study area freeway/state highway facilities would be significantly impacted, and therefore no mitigation measures would be required under Future Year 2030 Base Plus Project (Buildout) conditions.

Two-Lane Highways

The additional trips generated by buildout of the project would cause a cumulative traffic impact to SR-94, south of Otay Lakes Road. However, this segment was also analyzed utilizing the Caltrans/HCM methodologies and the peak hour travel speeds were calculated at LOS D (Table 8.10B). Peak hour operations are considered to be a better indicator of the true roadway operating conditions, thus it was determined that no impact would occur and no mitigation would be required at the subject SR-94 segment, south of Otay Lakes Road.

Ramp Metering

The I-805 NB On-Ramp at Telegraph Canyon Road would not be significantly impacted, therefore no mitigation measures would be required under Future Year 2030 Base Plus Project (Buildout) conditions.

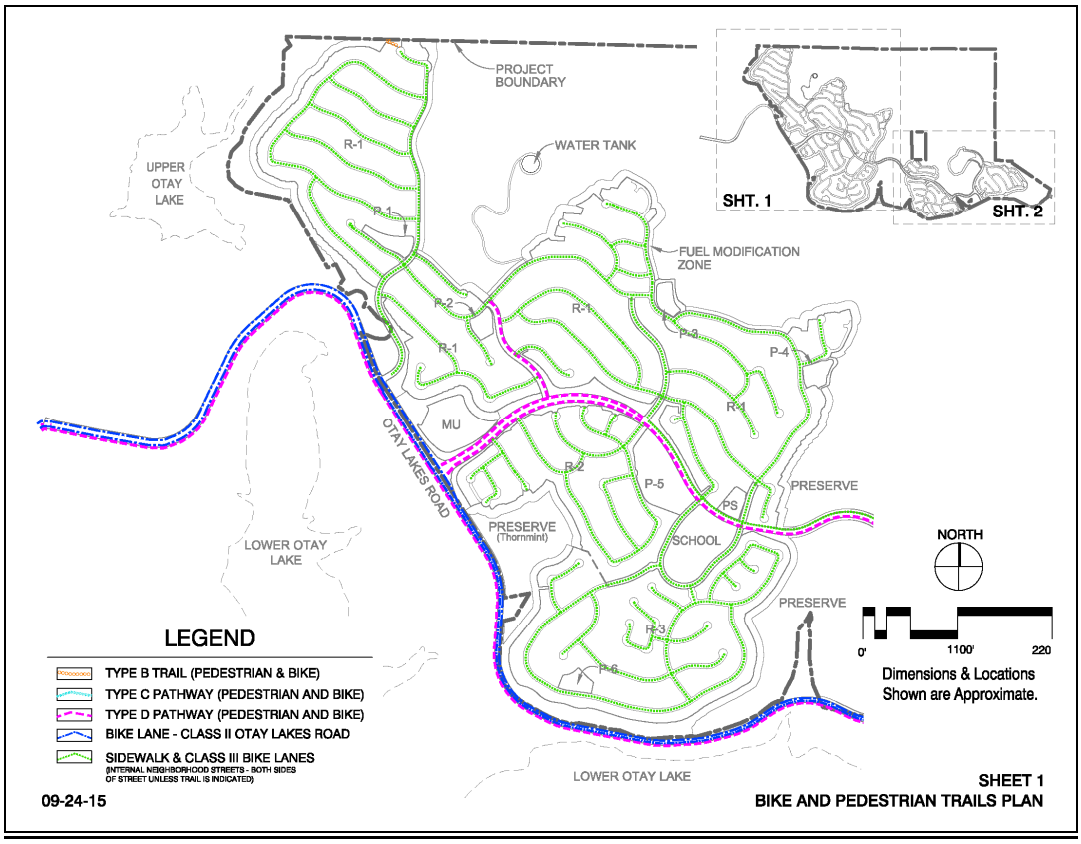
~~9.3~~8.4 Transportation Demand Management Program

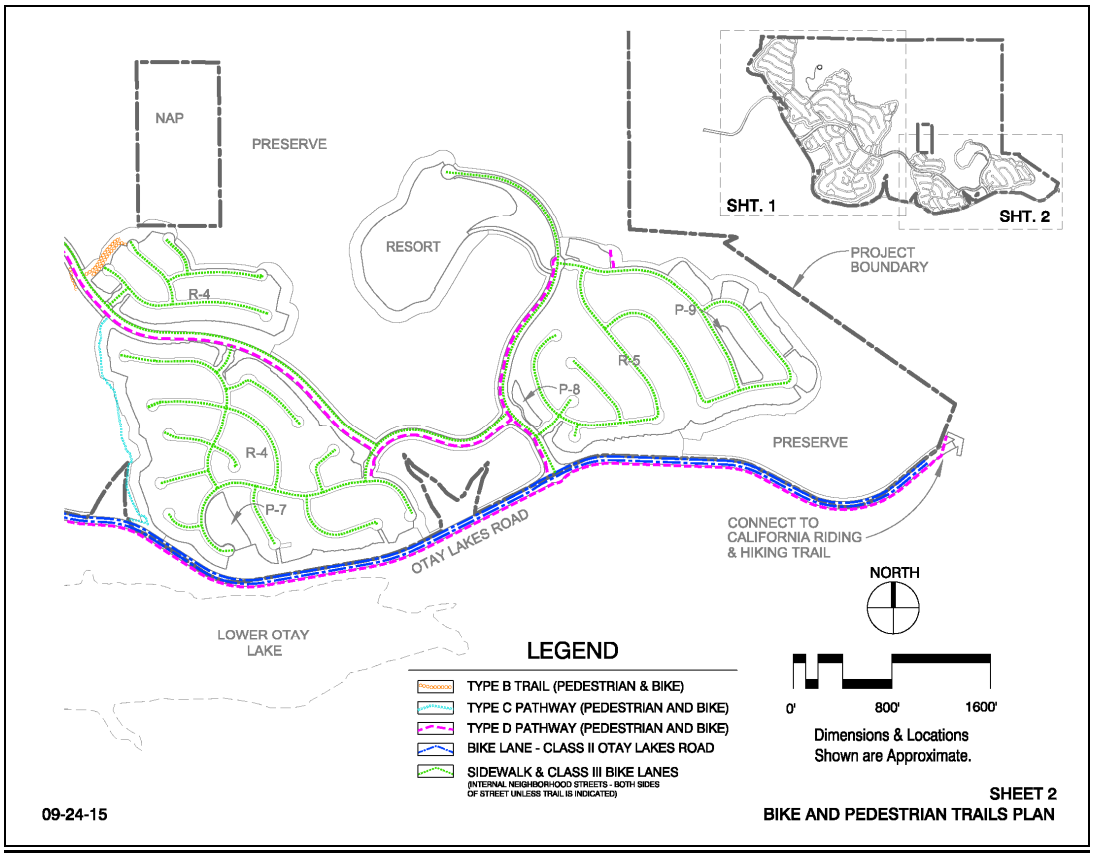
To reduce vehicle generated trips to the extent feasible, the project applicant proposes implementation of a Transportation Demand Management (TDM) program to reduce vehicle trips in favor of alternative modes of transportation. The TDM program will facilitate increased opportunities for transit, bicycling, and pedestrian travel. The project applicant shall incorporate the following measures as part of the project design and development, consistent with the identified triggers~~, to the satisfaction of the Director of Development Services~~:

- Implement pedestrian circulation improvements to improve the internal pedestrian circulation and encourage the usage of public transportation (~~concurrent with the approval of improvement plans for each village).~~when available).

- Implement bicycle circulation improvements to improve internal bicycle circulation and encourage the usage of bicycles ~~(concurrent with the approval of improvement plans for each village)~~.
- Participate in car sharing and bike sharing programs through HOA noticing, should such programs become available.
- Promote Carpool/Vanpool programs by providing preferential parking for carpools and vanpools ~~(concurrent with the approval of site plans for each village core)~~.
- Promote available websites providing transportation options for residents and businesses (concurrent with issuance of certificate of occupancy).
- Create and distribute a "new resident" information packet addressing alternative modes of transportation ~~(concurrent with issuance of certificate of occupancy)~~.
- Promote programs to encourage workplace peak hour trip reduction, including staggered work hours, regional ride-matching services, and telecommuting ~~(concurrent with issuance of certificate of occupancy)~~.
- Orient buildings to the main street or activity area, such that they are not separated from the street by vast parking areas or fences, thereby encouraging pedestrian traffic. ~~(concurrent with the approval of site plans for each village core).~~
- Where transit is available on-site, participate in providing the necessary transit facilities, such as bus pads, shelters, signs, lighting, and trash receptacles ~~(concurrent with the approval of improvement plans for each village)~~.
- Coordinate with the MPO as to the future siting of transit stops/stations within the project site ~~(concurrent with the approval of improvement plans, and/or site plans, for each village)~~.
- The proposed Project will provide a "school pool" program through its coordination the local school district and SANDAG. Relatedly, dedicated parking space for the "school pool" program will be provided in the Village Core area.
- The proposed Project's HOA shall be required to coordinate with the local school district and partner with the on-site elementary school in order to create a "walking school bus program" for neighborhood students to safely walk to and from school. The project applicants also shall coordinate with the local school district to encourage the provision of bicycle storage facilities at the on-site elementary school.

The following ~~three (3~~two (2) figures display the proposed Trails and Bike Plans for the proposed project~~Village 3N, 8E and 10, respectively~~.


PROJECT BOUNDARY
WATER TANK
UPPER OTAY LAKE
SHT. 1
SHT. 2
FUEL MODIFICATION ZONE
R-1
R-2
R-3
P-3
P-4
MU
OTAY LAKES ROAD
P-5
P-6
PRESERVE
PRESERVE (Thornmint)
SCHOOL
LOWER OTAY LAKE
NORTH
0'
1100'
220
Dimensions & Locations Shown are Approximate.
LEGEND
TYPE B TRAIL (PEDESTRIAN & BIKE)
TYPE C PATHWAY (PEDESTRIAN AND BIKE)
TYPE D PATHWAY (PEDESTRIAN AND BIKE)
BIKE LANE - CLASS II OTAY LAKES ROAD
SIDEWALK & CLASS III BIKE LANES
(INTERNAL NEIGHBORHOOD STREETS - BOTH SIDES OF STREET UNLESS TRAIL IS INDICATED)
09-24-15
SHEET 1
BIKE AND PEDESTRIAN TRAILS PLAN


NAP
PRESERVE
RESORT
SHT. 1
SHT. 2
PROJECT BOUNDARY
R-4
P-9
R-5
P-8
PRESERVE
P-7
OTAY LAKES ROAD
CONNECT TO CALIFORNIA RIDING & HIKING TRAIL
LOWER OTAY LAKE
NORTH
0'
800'
1600'
Dimensions & Locations Shown are Approximate.
LEGEND
TYPE B TRAIL (PEDESTRIAN & BIKE)
TYPE C PATHWAY (PEDESTRIAN AND BIKE)
TYPE D PATHWAY (PEDESTRIAN AND BIKE)
BIKE LANE - CLASS II OTAY LAKES ROAD
SIDEWALK & CLASS III BIKE LANES
(INTERNAL NEIGHBORHOOD STREETS - BOTH SIDES OF STREET UNLESS TRAIL IS INDICATED)
09-24-15
SHEET 2
BIKE AND PEDESTRIAN TRAILS PLAN

9.0 Findings and Recommendations

This chapter provides a summary of the key findings and study recommendations, including the Level of Service results and traffic mitigation requirements associated with the various scenarios. Specific recommendations related to mitigation of the project traffic impacts on intersection, roadway and freeway/state highway segments are summarized.

9.1 Summary of Intersection Analyses

Table 9.1 displays intersection Level of Service results for each of the analyzed scenarios. For those study area intersections which would be significantly impacted by the proposed project, mitigated Level of Service results are provided in parentheses.

TABLE 9.1
SUMMARY OF INTERSECTION PEAK HOUR LEVEL OF SERVICE RESULTS

Intersection	Existing		Existing Plus Project (Phase I)		Existing Plus Project (Buildout)		Cumulative (Year 2025)		2030 Base		2030 Base Plus Project (Buildout)	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1. East H Street / Otay Lakes Road	C	C	D	C	C	C	D	D	D	D	D	D
2. Proctor Valley Road / Hunte Parkway	B	B	B	B	B	B	D	C	C	D	C	D
3. Telegraph Canyon Road / I-805 SB Ramps	B	D	B	D	C	D	C	D	C	D	C	D
4. Telegraph Canyon Road / I-805 NB Ramps	C	B	C	B	C	B	D	C	D	D	D	D
5. Telegraph Canyon Road / Oleander Avenue	B	B	B	B	B	B	C	C	C	D	C	D
6. Telegraph Canyon Road / Paseo Del Rey	B	C	B	C	B	C	D	D	C	D	C	D
7. Telegraph Canyon Road / Medical Center Drive	B	B	B	B	B	B	B	B	B	C	B	C
8. Telegraph Canyon Road / Paseo Ladera	C	C	C	C	D	C	D	D	D	C	D	C

TABLE 9.1
SUMMARY OF INTERSECTION PEAK HOUR LEVEL OF SERVICE RESULTS

Intersection	Existing		Existing Plus Project (Phase I)		Existing Plus Project (Buildout)		Cumulative (Year 2025)		2030 Base		2030 Base Plus Project (Buildout)	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
9. Telegraph Canyon Road / Paseo Ranchero/Heritage Road	C	C	C	C	C	C	D	D	D	D	D	D
10. Telegraph Canyon Road / Otay Lakes Road/La Media Road	C	C	C	C	C	C	D	D	D	D	D	D
11. Otay Lakes Road / Rutgers Avenue	B	B	B	B	B	B	B	B	B	B	B	B
12. Otay Lakes Road / SR-125 SB Ramps	A	A	A	A	A	A	A	B	A	A	A	B
13. Otay Lakes Road / SR-125 NB Ramps	A	A	A	A	A	A	A	A	A	A	A	A
14. Otay Lakes Road / Eastlake Parkway	C	C	C	C	C	C	D	D	D	D	D	D
15. Otay Lakes Road / Lane Avenue	B	B	B	B	B	B	B	B	B	C	B	C
16. Otay Lakes Road / Fenton Street	A	B	A	B	A	B	A	B	A	B	A	B
17. Otay Lakes Road / Hunte Parkway	C	C	C	C	C	C	C	D	C	C	C	C
18. Otay Lakes Road / Woods Drive	B	B	B	B	B	B	B	B	B	A	B	A
19. Otay Lakes Road / Lake Crest Drive	B	B	B	B	B	B	C	D	B	B	B	B
20. Otay Lakes Road / Wueste Road*	A	A	B	C	C	**E**	**F**	**F**	A	A	A	B
21. Otay Lakes Road / SR-94 (County)*	B	B	C	C	C	C	**E**	**F**	B	C	C	D
22. Olympic Parkway / East Palomar Street	C	C	C	C	C	C	C	C	C	D	C	D
23. Olympic Parkway / SR-125 SB Ramps	A	A	A	A	A	A	A	A	A	A	A	A
24. Olympic Parkway / SR-125 NB Ramps	A	A	A	A	A	A	A	B	A	A	A	A
25. Olympic Parkway / Eastlake Parkway	C	C	C	C	C	C	C	D	C	C	C	C

TABLE 9.1
SUMMARY OF INTERSECTION PEAK HOUR LEVEL OF SERVICE RESULTS

Intersection	Existing		Existing Plus Project (Phase I)		Existing Plus Project (Buildout)		Cumulative (Year 2025)		2030 Base		2030 Base Plus Project (Buildout)	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
26. Olympic Parkway / Hunte Parkway	B	C	C	C	C	C	C	D	C	C	C	C
27. Olympic Parkway / Olympic Vista Road	B	B	B	B	B	B	C	C	C	C	C	C
28. Olympic Parkway / Wueste Road	A	A	A	A	A	A	A	A	B	B	B	B
29. Lake Crest Drive / Wueste Road	B	A	C	B	B	B	C	B	A	A	B	B
30. Main Street / SR-125 SB Ramps	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	B	B	B	B
31. Main Street / SR-125 NB Ramps	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	B	D	B	D
32. Main Street / Eastlake Parkway	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	C	D	D	D
33. Otay Valley Road / SR-125 SB Ramps	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	B	B	B	B
34. Otay Valley Road / SR-125 NB Ramps	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	A	B	A	B
35. Otay Mesa Road / La Media Road	D	D	D	D	D	D	D	D	D	D	D	D
36. Otay Mesa Road / SR-125 SB Ramps	A	A	A	A	A	A	B	B	A	A	A	A
37. Otay Mesa Road / SR-125 NB Ramps	A	A	A	A	A	A	A	A	B	B	B	B
38. Otay Mesa Road / Ellis Road	DNE	DNE	DNE	DNE	DNE	DNE	C	C	C	C	C	C
39. SR-94 / Melody Road (County)	B	C	B	C	B	C	A	B	A	B	A	B
40. SR-94 / Maxfield Road (County)*	B	C	C	C	C	C	C	C	C	C	C	C
41. SR-94 / Jefferson Road (County)	B	B	B	B	B	B	C	C	D	D	D	D
42. Otay Lakes Road @ Project Driveway #1	DNE	DNE	DNE	DNE	A	A	B	B	DNE	DNE	B	B

TABLE 9.1
SUMMARY OF INTERSECTION PEAK HOUR LEVEL OF SERVICE RESULTS

Intersection	Existing		Existing Plus Project (Phase I)		Existing Plus Project (Buildout)		Cumulative (Year 2025)		2030 Base		2030 Base Plus Project (Buildout)	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
43. Otay Lakes Road @ Project Driveway #2[RA]	DNE	DNE	A	A	A	B	A	D	DNE	DNE	A	D
44. Otay Lakes Road @ Project Driveway #3[RA]	DNE	DNE	DNE	DNE	A	A	A	A	DNE	DNE	A	A

Source: Chen Ryan Associates; March 2015

Notes:
N/A = Not Analyzed.
DNE = Does Not Exist.
(X): LOS after mitigation.
Bold letter indicates unacceptable LOS E of F.
* For two-way stop controlled intersections, the delay shown is the worst delay experienced by any of the approaches.
RA = Roundabout. Rodel software is utilized for the peak hour operational analysis.

As shown in Table 9.1, the following key study area intersections are projected to operate at an unacceptable LOS E or F during the AM/PM peak hours under each of the analyzed timeframes:

Existing Conditions – None.

Existing Plus Project (Phase I) Conditions – None.

Existing Plus Project (Buildout) Conditions

- Otay Lakes Road / Wueste Road (LOS E – PM peak hour)

Cumulative (Year 2025) Traffic Conditions

- Otay Lakes Road / Wueste Road (LOS F – AM & PM peak hour)
- Otay Lakes Road / SR-94 (LOS E – AM peak hour & LOS F PM peak hour)

Future Year 2030 Base Conditions – None.

Future Year 2030 Base Plus Project (Buildout) Conditions – None.

9.2 Summary of Roadway Segment Analyses

Tables 9.2A and **9.2B** display roadway segment Level of Service results for each of the study scenarios analyzed, for the City of Chula Vista and the County of San Diego, respectively.

TABLE 9.2A
SUMMARY OF ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
(City of Chula Vista)

Roadway	Segment	Existing	Existing Plus Project (Phase I)	Existing Plus Project (Buildout)	Cumulative (Year 2025)	2030 Base	2030 Base plus Project (Buildout)
Proctor Valley Rd	Lane Ave and Hunte Pkwy	A	A	A	A	A	A
Telegraph Canyon Rd	I-805 SB Ramps to I-805 NB Ramps	B	B	B	B	A	A
	I-805 NB Ramps to Oleander Ave	B	B	C	C	B	B
	Oleander Ave to Medical Center Dr	**D**	**E**	**E**	**E**	**E**	**E**
	Medical Center Dr to Paseo Ladera	C	C	C	**E**	**E**	**E**
	Paseo Ladera to Paseo Ranchero / Heritage Rd	C	C	C	**E**	**E**	**E**
	Paseo Ranchero/Heritage Rd to La Media Rd	A	A	B	**D**	**D**	**E**
Otay Lakes Rd	East H St to Telegraph Canyon Rd/Otay Lakes Rd	C	C	**D**	A	B	C
	La Media Rd to Rutgers Ave	B	C	C	C	C	**D**
	Rutgers Ave to SR-125 SB Ramps	B	C	C	C	B	C
	SR-125 SB Ramps to SR-125 NB Ramps	C	C	**D**	**D**	**D**	**D**
	SR-125 NB Ramps to Eastlake Pkwy	A	A	A	B	A	B
	Eastlake Pkwy to Lane Ave	A	A	A	A	A	B
	Lane Ave to Fenton St	A	A	A	A	A	A
	Fenton St to Hunte Pkwy	A	A	A	A	A	A
	Hunte Pkwy to Woods Dr	A	A	A	A	A	A
	Woods Dr to Lake Crest Dr	A	A	A	A	A	A
	Lake Crest Dr to Wueste Rd	A	**E**	A	**F**	A	A
	Wueste Rd to City of CV/County boundary	A	**F**	**F**	**F**	A	A

TABLE 9.2A
SUMMARY OF ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
(City of Chula Vista)

Roadway	Segment	Existing	Existing Plus Project (Phase I)	Existing Plus Project (Buildout)	Cumulative (Year 2025)	2030 Base	2030 Base plus Project (Buildout)
Olympic Pkwy	La Media Rd to E Palomar St	A	A	A	A	A	A
	E Palomar St to SR-125 SB Ramps	A	A	A	**D**	C	C
	SR-125 SB Ramps to SR-125 NB Ramps	B	B	B	**E**	C	C
	SR-125 NB Ramps to Eastlake Pkwy	A	A	A	B	**D**	**D**
	Eastlake Pkwy to Hunte Pkwy	A	A	A	B	A	A
	Hunte Pkwy to Olympic Vista Rd	A	A	A	A	A	B
	East of Olympic Vista Rd	A	A	A	A	A	A
Main Street	SR-125 NB Ramps to Eastlake Pkwy/Otay Valley Rd	A	A	A	C	C	**D**
Lane Ave	Proctor Valley Rd and Otay Lakes Rd	A	A	A	A	C	C
Hunte Pkwy	Proctor Valley Rd to Otay Lakes Rd	A	A	A	A	A	A
	Otay Lakes Rd to Clubhouse Dr	A	A	A	A	A	A
	Clubhouse Dr to Olympic Pkwy	A	A	A	A	A	A
	Eastlake Pkwy/Otay Valley Rd to Olympic Pkwy	A	A	A	A	A	A
Otay Valley Road	La Media Rd and SR-125 SB Ramps	DNE	DNE	DNE	DNE	B	C
	SR-125 SB Ramps and SR-125 NB Ramps	DNE	DNE	DNE	DNE	C	C
	SR-125 NB Ramps and Main Street	DNE	DNE	DNE	DNE	C	**D**

Source: Chen Ryan Associates; March 2015

Notes:
Bold letter indicates unacceptable LOS D, E, or F.
DNE = Does Not Exist.

TABLE 9.2B
SUMMARY OF ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
(County of San Diego)

Roadway	Segment	Existing	Existing Plus Project (Phase I)	Existing Plus Project (Buildout)	Cumulative (Year 2025)	2030 Base	2030 Base plus Project (Buildout)
Otay Lakes Rd	City of CV/County boundary to Driveway #1	B	**E**	C	**F**	A	D
	Driveway #1 to Driveway #2	B	**E**	B	**F**	A	C
	Driveway #2 to Driveway #3	B	C	C	D	C	D
	Driveway #3 to SR-94	B	C	C	D	C	D

Source: Chen Ryan Associates; March 2015

Note:
Bold letter indicates unacceptable LOS E or F.

As shown in Tables 9.2A and 9.2B, the following key study area roadway segments currently operate and are projected to operate at an unacceptable LOS D (for Chula Vista ONLY), E or F under each of the analyzed timeframes:

Existing Conditions

- Telegraph Canyon Rd, between Oleander Ave and Medical Center Dr (LOS D, City of CV)

Existing Plus Project (Phase I) Conditions

- Telegraph Canyon Rd, between Oleander Ave and Medical Center Dr (LOS E, City of CV)
- Otay Lakes Rd, between Lake Crest Dr and Wueste Rd (LOS E, City of CV)
- Otay Lakes Rd, between Wueste Rd and the City of Chula Vista/County boundary (LOS F, City of CV)
- Otay Lakes Rd, between the City of Chula Vista/County boundary and Project Driveway #1/Intersection #42 (LOS F, County)
- Otay Lakes Rd, between Project Driveway #1/Intersection #42 and Driveway #2 (LOS F, County)

Existing Plus Project (Buildout) Conditions

- Otay Lakes Rd, between Lake Crest Dr and Wueste Rd (LOS F, City of CV)
- Otay Lakes Rd, between Wueste Rd and the City of Chula Vista/County boundary (LOS F, City of CV)
- Telegraph Canyon Rd, between Oleander Ave and Medical Center Dr (LOS E, City of CV)
- Otay Lakes Rd, between East H St and Telegraph Canyon Rd/Otay Lakes Rd (LOS D, City of CV)
- Otay Lakes Rd, between SR-125 SB Ramps and SR-125 NB Ramps (LOS D, City of CV)

Cumulative (Year 2025) Traffic Conditions

- Telegraph Canyon Rd, between Oleander Ave and Medical Center Dr (LOS E, City of CV)
- Telegraph Canyon Rd, between Medical Center Dr and Paseo Ladera (LOS E, City of CV)
- Telegraph Canyon Rd, between Paseo Ladera and Paseo Ranchero/Heritage Rd (LOS E, City of CV)
- Telegraph Canyon Rd, between Paseo Ranchero/Heritage Rd and La Media Rd (LOS D, City of CV)
- Otay Lakes Rd, between SR-125 SB Ramps and SR-125 NB Ramps (LOS D, City of CV)
- Otay Lakes Rd, between Lake Crest Dr and Wueste Rd (LOS F, City of CV)
- Olympic Pkwy, between E Palomar St and SR-125 SB Ramps (LOS D, City of CV)
- Olympic Pkwy, between SR-125 SB Ramps and SR-125 NB Ramps (LOS E, City of CV)
- Otay Lakes Rd, between Lake Crest Dr and Wueste Rd (LOS F, City of CV)
- Otay Lakes Rd, between Wueste Rd and the City of Chula Vista/County boundary (LOS F, City of CV)
- Otay Lakes Rd, between the City of Chula Vista/County boundary and Project Driveway #1/Intersection #42 (LOS F, County)
- Otay Lakes Rd, between Project Driveway #1/Intersection #42 and Driveway #2/Intersection #43 (LOS F, County)

Future Year 2030 Base Conditions

- Telegraph Canyon Rd, between Oleander Ave and Medical Center Dr (LOS E, City of CV)
- Telegraph Canyon Rd, between Medical Center Dr and Paseo Ladera (LOS E, City of CV)
- Telegraph Canyon Rd, between Paseo Ladera and Paseo Ranchero/Heritage Rd (LOS E, City of CV)
- Telegraph Canyon Rd, between Paseo Ranchero/Heritage Rd and La Media Rd (LOS D, City of CV)
- Otay Lakes Rd, between SR-125 SB Ramps and SR-125 NB Ramps (LOS D, City of CV)
- Olympic Pkwy, between SR-125 NB Ramps and Eastlake Parkway (LOS D, City of CV)

Future Year 2030 Base Plus Project (Buildout) Conditions

- Telegraph Canyon Rd, between Oleander Ave and Medical Center Dr (LOS E, City of CV)
- Telegraph Canyon Rd, between Medical Center Dr and Paseo Ladera (LOS E, City of CV)
- Telegraph Canyon Rd, between Paseo Ladera and Paseo Ranchero/Heritage Rd (LOS E, City of CV)
- Telegraph Canyon Rd, between Paseo Ranchero/Heritage Rd and La Media Rd (LOS E, City of CV)
- Otay Lakes Rd, between La Media Road and Rutger Avenue (LOS D, City of CV)
- Otay Lakes Rd, between SR-125 SB Ramps and SR-125 NB Ramps (LOS D, City of CV)
- Olympic Pkwy, between SR-125 NB Ramps and Eastlake Parkway (LOS D, City of CV)

- Main Street, between SR-125 NB Ramps and Eastlake Pkwy (LOS D, City of CV)
- Otay Valley Road, between SR-125 NB Ramps and Main Street (LOS D, City of CV)

9.3 Summary Freeway/State Highway Analyses

Table 9.3 displays freeway and state highway Level of Service results for each of the analyzed scenarios.

TABLE 9.3
SUMMARY OF FREEWAY/STATE HIGHWAY SEGMENT LEVEL OF SERVICE RESULTS

Freeway	Segment	Existing	Existing Plus Project (Phase I)	Existing Plus Project (Buildout)	Cumulative (Year 2025)	2030 Base	2030 Base plus Project (Buildout)
I-805	Bonita Road to East H Street	C	C	C	D	**E**	**E**
	East H Street to Telegraph Canyon Road	C	C	C	**E**	**E**	**E**
	Telegraph Canyon Road to Olympic Parkway	B	B	B	C	D	D
	Olympic Parkway to Main Street	B	B	B	C	D	D
SR-125	SR-54 to Mt. Miguel Rd	A	A	A	A	A	A
	Mt Miguel Road to Proctor Valley Road	A	A	A	A	A	A
	Proctor Valley Road to Otay Lakes Road	A	A	A	A	A	A
	Otay Lakes Road to Olympic Parkway	A	A	A	A	A	A
	Olympic Parkway to Birch Road	A	A	A	A	A	A
	Birch Road to Main Street	A	A	A	B	A	A
	Main Street to Otay Valley Road	A	A	A	B	A	A
	Otay Valley Road to Lone Star Road	A	A	A	B	B	B
	Lone Star Road to Otay Mesa Road	A	A	A	B	D	D
	Otay Mesa Road to SR-905	DNE	DNE	DNE	A	C	C

Source: Chen Ryan Associates; March 2015

Notes:
Bold letter indicates unacceptable LOS E or F.
DNE = Does Not Exist.

As shown, the following freeway/state highway segments are projected to operate at an unacceptable LOS E or F under each of the analyzed timeframes:

Existing Conditions – None.

Existing Plus Project (Phase I) Conditions – None.

Existing Plus Project (Buildout) Conditions – None.

Cumulative (Year 2025) Traffic Conditions

- I-805, between East H St and Telegraph Canyon Rd (LOS E)

Future Year 2030 Base Conditions

- I-805, between Bonita Road and H St (LOS E)
- I-805, between East H St and Telegraph Canyon Rd (LOS E)

Future Year 2030 Base Plus Project (Buildout) Conditions

- I-805, between Bonita Road and H St (LOS E)
- I-805, between East H St and Telegraph Canyon Rd (LOS E)

9.4 Summary of Two-Lane Highway Analysis

Tables 9.4 and **9.5** display two-lane highway SR-94 Level of Service results for each of the analyzed scenarios utilizing both the County LOS Criteria and Caltrans/HCM methodology, respectively.

TABLE 9.4
SUMMARY OF 2-LANE HIGHWAY SEGMENT LEVEL OF SERVICE RESULTS
COUNTY OF SAN DIEGO LOS CRITERIA

Highway	Segment	Existing	Existing Plus Project (Phase I)	Existing Plus Project (Buildout)	Cumulative (Year 2025)	2030 Base	2030 Base plus Project (Buildout)
SR-94	Lyons Valley Road to Jefferson Road	D or better	D or better	D or better	D or better*	D or better*	D or better*
	Jefferson Road to Maxfield Road	D or better	D or better	D or better	D or better*	D or better*	D or better*
	Maxfield Road to Melody Road	D or better	D or better	D or better	D or better*	D or better*	D or better*
	Melody Road to Otay Lake Road	D or better	D or better	D or better	D or better	D or better	D or better
	South of Otay Lakes Road	D or better	D or better	D or better	**E**	**E**	**E**

Source: Chen Ryan Associates; March 2015

Notes:
Bold letter indicates unacceptable LOS E or F.
*The signalization of SR-94/Melody Road intersection under Cumulative (Year 2025) conditions would result in intersection spacing to be under one mile which would require these segments to be analyzed utilizing the "2-Lane Highways with Signalized Intersection Spacing *Under* One Mile" methodology, with the LOS for this type of facility to be determined by the intersection operations along highway SR-94. Since the intersections of SR-94/Jefferson Road, SR-94/Maxfield Road, and SR-94/Melody Road are projected to operate at LOS D or better, these highway segments would operate LOS D or better.

TABLE 9.5
SUMMARY OF 2-LANE HIGHWAY SEGMENT LEVEL OF SERVICE RESULTS
CALTRANS AND HCM METHODOLOGY

Highway	Segment	Existing	Existing Plus Project (Phase I)	Existing Plus Project (Buildout)	Cumulative (Year 2025)	2030 Base	2030 Base plus Project (Buildout)
SR-94	North of Otay Lakes Road	C	C	C	D	D	D
	South of Otay Lakes Road	C	C	C	D	D	D

Source: Chen Ryan Associates; March 2015

As shown, the highway segment of SR-94, south of Otay Lakes Road would operate at an unacceptable LOS E under the near-term and future scenarios utilizing the County of San Diego LOS Criteria. However, peak hour operations are considered to be a better indicator of the true roadway operating conditions. Since this segment is projected to operate at acceptable levels utilizing the Caltrans/HCM methodologies (peak hour travel speeds were calculated at LOS D, see Table 9.5), it was determined that no mitigation would be required at the subject SR-94 segment (south of Otay Lakes Road).

9.5 Summary of Freeway Ramp Intersection Capacity Analysis

Table 9.6 displays freeway ramp intersection capacity analysis Level of Service results for each of the scenarios analyzed.

TABLE 9.6
SUMMARY OF RAMP INTERSECTION CAPACITY ANALYSIS

Ramp Intersection	Peak Hour	Existing	Existing Plus Project (Phase I)	Existing Plus Project (Buildout)	Cumulative (Year 2025)	2030 Base	2030 Base plus Project (Buildout)
I-805 SB Ramps / Telegraph Canyon Road	AM	At	At	At	At	At	At
	PM	Over	Over	Over	Over	Over	Over
I-805 NB Ramps / Telegraph Canyon Road	AM	At	At	At	At	Over	Over
	PM	Under	At	At	At	At	At
SR-125 SB Ramps / Otay Lakes Road	AM	Under	Under	Under	Under	Under	Under
	PM	Under	At	At	At	At	Over
SR-125 NB Ramps / Otay Lakes Road	AM	Under	Under	Under	Under	Under	Under
	PM	Under	Under	At	Under	At	At
SR-125 SB Ramps / Olympic Parkway	AM	Under	Under	Under	Under	Under	Under
	PM	Under	Under	Under	Under	At	At
SR-125 NB Ramps / Olympic Parkway	AM	Under	Under	Under	Under	Under	Under
	PM	Under	Under	Under	Under	At	At

TABLE 9.6
SUMMARY OF RAMP INTERSECTION CAPACITY ANALYSIS

Ramp Intersection	Peak Hour	Existing	Existing Plus Project (Phase I)	Existing Plus Project (Buildout)	Cumulative (Year 2025)	2030 Base	2030 Base plus Project (Buildout)
SR-125 SB Ramps / Main Street	AM	DNE	DNE	DNE	DNE	Over	Over
	PM	DNE	DNE	DNE	DNE	At	At
SR-125 NB Ramps / Main Street	AM	DNE	DNE	DNE	DNE	At	At
	PM	DNE	DNE	DNE	DNE	At	Over
SR-125 SB Ramps / Otay Valley Road	AM	DNE	DNE	DNE	DNE	Under	Under
	PM	DNE	DNE	DNE	DNE	Under	Under
SR-125 SB Ramps / Otay Valley Road	AM	DNE	DNE	DNE	DNE	Under	Under
	PM	DNE	DNE	DNE	DNE	Under	Under
SR-125 SB Ramps / Otay Mesa Road	AM	Under	Under	Under	Under	Under	Under
	PM	Under	Under	Under	Under	Under	Under
SR-125 NB Ramps / Otay Mesa Road	AM	Under	Under	Under	Under	Under	Under
	PM	Under	Under	Under	Under	Under	Under

Source: Chen Ryan Associates; March 2015

Notes:
Under = <1200, Under Capacity
At = 1200-1500, At Capacity
Over = >1500, Over Capacity
DNE = Does Not Exist

As shown, all other freeway ramp intersections currently operate and would continue to operate at "Under" or "At Capacity" under any of the analyzed timeframes with the following exceptions:

Existing Conditions

- I-805 SB Ramps/Telegraph Canyon Road (PM)

Existing Plus Project (Phase I) Conditions

- I-805 SB Ramps/Telegraph Canyon Road (PM)

Existing Plus Project (Buildout) Conditions

- I-805 SB Ramps/Telegraph Canyon Road (PM)

Cumulative (Year 2025) Traffic Conditions

- I-805 SB Ramps/Telegraph Canyon Road (PM)

Future Year 2030 Base Conditions

- I-805 SB Ramps/Telegraph Canyon Road (PM)
- I-805 NB Ramps/Telegraph Canyon Road (AM)
- SR-125 SB Ramps / Main Street – Over Capacity (AM)

Future Year 2030 Base Plus Project (Buildout) Conditions

- I-805 SB Ramps/Telegraph Canyon Road (PM)
- I-805 NB Ramps/Telegraph Canyon Road (AM)
- SR-125 SB Ramps / Otay Lakes Road – Over Capacity (PM)
- SR-125 SB Ramps / Main Street – Over Capacity (AM)
- SR-125 NB Ramps / Main Street – Over Capacity (PM)

9.6 Summary of Ramp Metering Analysis

Table 9.7 displays ramp metering analysis results for each of the scenarios analyzed. As shown, the I-805 NB On-Ramp at Telegraph Canyon Road currently operates and would continue to operate at acceptable delays under all of the study scenarios.

TABLE 9.7
SUMMARY OF RAMP METERING ANALYSIS

Location	Peak Hour	Delay (min.)					
		Existing	Existing Plus Project (Phase I)	Existing Plus Project (Buildout)	Cumulative (Year 2025)	2030 Base	2030 Base plus Project (Buildout)
I-805 NB On-Ramp @ Telegraph Canyon Road	AM	1.8	3.2	4.6	4.2	5.4	8.9

Source: Chen Ryan Associates; March 2015

9.7 Summary of Significant Project Impacts and Mitigation Recommendations

Based upon significant impact criteria discussed in Section 2.8, **Table 9.8** summarizes identified significant project-related impacts and recommended mitigation to intersections, roadway segments, freeway/state highway segments, as well as two-lane highway segments under each of the scenarios analyzed. In addition, mitigation implementation triggers by ~~residential unit~~EDU number for each of the study timeframes are also specified in the table and included in **Appendix AA**.

TABLE 9.8
SUMMARY OF SIGNIFICANT IMPACTS AND MITIGATION MEASURES

Location	Existing Plus Project (Phase I)	Existing Plus Project (Buildout)	Cumulative (Year 2025)	2030 Base Plus Project (Buildout)
Intersection				
Otay Lakes Road / Wueste Road (Chula Vista)	None	**Project Specific (Direct) Impact** Signalization by the 1,500th ~~residential unit~~EDU (EDU)[1]	**Project Specific (Direct) Impact** Signalization by the ~~1,500th~~ 1,234th ~~residential unit~~EDU (EDU)[2]	None

TABLE 9.8
SUMMARY OF SIGNIFICANT IMPACTS AND MITIGATION MEASURES

Location	Existing Plus Project (Phase I)	Existing Plus Project (Buildout)	Cumulative (Year 2025)	2030 Base Plus Project (Buildout)
Otay Lakes Road / SR-94	None	None	**Cumulative Impact** Caltrans Facility – Significant and Unavoidable impact	None
Roadway Segment				
Otay Lakes Rd, between Lake Crest Dr and Wueste Rd (Chula Vista)	None	**Project Specific (Direct) Impact** Widen from 2-lanes to 4-lane Major with Raised Median by the 910th ~~residential unit~~EDU ~~(EDU)~~[1][2]	**Project Specific (Direct) Impact** Widen from 2-lanes to 4-lane Major with Raised Median by the 384th ~~910th residential unit~~EDU ~~(EDU)~~[2]	None
Otay Lakes Rd, between Wueste Rd and City of CV/County boundary (Chula Vista)	**Project Specific (Direct) Impact** Widen from 2-lanes to 4-lane Major with Raised Median by the 728th ~~residential unit~~EDU ~~(EDU)~~[1][2]	**Project Specific (Direct) Impact** Widen from 2-lanes to 4-lane Major with Raised Median by the 728th ~~residential unit~~EDU ~~(EDU)~~[1][2]	**Project Specific (Direct) Impact** Widen from 2-lanes to 4-lane Major with Raised Median by the ~~728th~~ 384th ~~residential unit~~EDU ~~(EDU)~~[2]	None
Otay Lakes Rd, between City of CV/County boundary and Project Driveway #1/Intersection #42 (County)	**Direct Impact** widen from 2-lanes to 4.2A by the 896th ~~residential unit~~EDU	None	**Cumulative Impact** TIF Payment*	None
Otay Lakes Rd, between Project Driveway #1 and Driveway #2/Intersection #42 (County)	**Direct Impact** widen from 2-lanes to 4.2A by the 896th ~~residential unit~~EDU	None	**Cumulative Impact** TIF Payment*	None
Freeway/State Highway Segment				
None				
2-Ln Highway Segment				
SR-94, south of Otay Lakes Road	None	None	None	None

Source: Chen Ryan Associates; March 2015

Notes:
EDU = Equivalent Dwelling Units

[1] The City of Chula Vista does not consider impacts to its facility under the Existing Plus Project conditions to be realistic impacts when used in connection with a long-range development project such as the proposed Resort Village project, which is not anticipated to reach full buildout until approximately 2025. Therefore, the mitigation trigger identified above is provided for informational purpose only.
~~as shown in section 5.2, this roadway segment will be constructed to a 4-lane roadway as a mitigation measure for a direct impact by the 896th residential unit.~~

[2] as shown in section 5.2 and section 6.2, these improvements are consistence with the City of Chula Vista's Circulation Element. If implemented, these mitigation improvements would fully mitigate the Project's project-specific (direct) impacts. However, because the necessary improvements would be constructed within the City of Chula Vista and, therefore, are outside of the County's jurisdiction and control, the County cannot assure

that the City will permit implementation of the improvements. Therefore, although mitigation in the form of road improvements has been identified to reduce the corresponding impacts to less than significant, and although the Project applicant would implement the improvements consistent with the mitigation requirements, for purposes of CEQA and this Draft EIR, these impacts are considered significant and unavoidable until such time as the City concurs with the mitigation.
*See Section 7.3, "Impact Significance and Mitigation" for detailed discussion.

The following summarizes the significant project related impacts by jurisdiction and by facility type:

City of Chula Vista

Intersections

Existing Plus Project (Phase I) – None.

Existing Plus Project (Buildout)

- A project specific (direct) impact would occur at the Otay Lakes Road / Wueste Road intersection since the intersection is projected to operate at LOS F, and the project trips would comprise more 86.1% during the AM peak hour (more than 5%) and 89.5% (more than 5%) of the total entering volumes.

Cumulative (Year 2025)

- A project specific (direct) impact would occur at the Otay Lakes Road / Wueste Road intersection since the intersection is projected to operate at LOS F, and the project trips would comprise 55.1% during the AM peak hour (more than 5%) and 65.6% during the PM peak hour (more than 5%) of the total entering volumes.

Future Year 2030 Base Plus Project (Buildout) – None.

Roadways

Existing Plus Project (Phase I) - A project specific (direct) impact would occur under the Existing Plus Project (Phase I) conditions along one (1) roadway segment within the City of Chula Vista:

- Otay Lakes Road, between Wueste Road and the City of Chula Vista/County boundary - since the volume to capacity ratio indices LOS F on this roadway segment, the project trips would comprise 75.0% (more than 5%) of the total segment volume, and would add 7,970 ADT (more than 800 ADT) to this roadway segment. Thus the project would cause a direct impact to this roadway segment.

Existing Plus Project (Buildout) - A project specific (direct) impact would occur under the Existing Plus Project (Buildout) conditions along two (2) roadway segment within the City of Chula Vista:

- Otay Lakes Road, between Lake Crest Drive and Wueste Road - since the volume to capacity ratio indices LOS F on this roadway segment, the project trips would comprise 85.6% (more than 5%) of the total segment volume, and would add 15,810 ADT (more than 800 ADT) to this roadway segment. Thus the project would cause a project specific (direct) impact to this roadway segment.

- Otay Lakes Road, between Wueste Road and the City of Chula Vista/County boundary - since the volume to capacity ratio indices LOS F on this roadway segment, the project trips would comprise 86.9% (more than 5%) of the total segment volume, and would add 19,540 ADT (more than 800 ADT) to this roadway segment. Thus the project would cause a project specific (direct) impact to this roadway segment.

Cumulative (Year 2025) - A project specific (direct) impact would occur under the Cumulative (Year 2025) Base Plus Project (Buildout) conditions along two (2) roadway segment within the City of Chula Vista:

- Otay Lakes Road, between Lake Crest Drive and Wueste Road - since the volume to capacity ratio indices LOS F on this roadway segment, the project trips would comprise 74.7% (more than 5%) of the total segment volume, and would add 15,810 ADT (more than 800 ADT) to this roadway segment. Thus the project would cause a project specific (direct) impact to this roadway segment.

- Otay Lakes Road, between Wueste Road and the City of Chula Vista/County boundary - since the volume to capacity ratio indices LOS F on this roadway segment, the project trips would comprise 78.5% (more than 5%) of the total segment volume, and would add 19,540 ADT (more than 800 ADT) to this roadway segment. Thus the project would cause a project specific (direct) impact to this roadway segment.

Future Year 2030 Base Plus Project (Buildout) - None.

Freeways / State Highways

No direct or cumulative project impacts would occur under any of the study scenarios for the study area freeway/state highway facilities within the City of Chula Vista.

Two-Lane Highways

No two-lane highway was analyzed within the City of Chula Vista.

County of San Diego

Intersections

Existing Plus Project (Phase I) – None.

Existing Plus Project (Buildout) – None.

Cumulative (Year 2025)

- Otay Lakes Road / SR-94 (unsignalized): This intersection (#21) would operate at an unacceptable LOS E and F during the AM and PM peak hours, respectively. Based upon

the impact criteria discussed in Section 2.8, the additional traffic generated by the cumulative projects and the buildout of the project would cause a cumulative impact at this intersection.

Future Year 2030 Base Plus Project (Buildout) – None.

Roadways

Existing Plus Project (Phase I) – A direct impact would occur along two roadway segments within the County of San Diego (Otay Lakes Road, between Wueste Road and Project Driveway #1/Intersection #42 & between Project Driveway #1/Intersection #42 and Project Driveway #2/Intersection #43) since the volume to capacity ratios indicate LOS F on these roadway segments, and the project adds more than 100 ADT to both segments.

Existing Plus Project (Buildout) – None.

Cumulative (Year 2025) - A cumulative impact would occur along two roadway segments within the County of San Diego (Otay Lakes Road, between Wueste Road and Project Driveway #1/Intersection #42 & between Project Driveway #1/Intersection #42 and Project Driveway #2/Intersection #43) since the volume to capacity ratios indicate LOS E on these roadway segments, and the project adds more than 100 ADT to both segments.

Future Year 2030 Base Plus Project (Buildout) – None.

Freeways / State Highways

No freeway/state highway was analyzed within the County of San Diego.

Two-Lane Highways

Existing Plus Project (Phase I)

- No project impacts would occur under Existing Plus Project conditions within the County of San Diego since SR-94 would operate at LOS D or better utilizing both the County LOS Criteria and Caltrans/HCM analysis methodology within the study area.

Existing Plus Project (Buildout)

- No project impacts would occur under Existing Plus Project conditions within the County of San Diego since SR-94 would operate at LOS D or better utilizing both the County LOS Criteria and Caltrans/HCM analysis methodology within the study area.

Cumulative (Year 2025)

- The highway segment of SR-94, south of Otay Lakes Road, would operate at an unacceptable LOS E under this scenario utilizing the County of San Diego LOS Criteria. However, peak hour operations are considered to be a better indicator of the true

roadway operating conditions. Since this segment is projected to operate at an acceptable levels utilizing the Caltrans/HCM methodologies (peak hour travel speeds were calculated at LOS D), it was determined that no impacts would occur and no mitigation measures would be required at the subject SR-94 segment (south of Otay Lakes Road).

Future Year 2030 Base Plus Project

- The highway segment of SR-94, south of Otay Lakes Road would operate at an unacceptable LOS E under this scenario utilizing the County of San Diego LOS Criteria. However, peak hour operations are considered to be a better indicator of the true roadway operating conditions. Since this segment is projected to operate at an acceptable levels utilizing the Caltrans/HCM methodologies (peak hour travel speeds were calculated at LOS D), it was determined that no impacts would occur and no mitigation measures would be required at the subject SR-94 segment (south of Otay Lakes Road).

Other Cumulative Impacts

San Diego County/Otay Subregion

While the project does not result in any other cumulative impacts in the study area in San Diego County, the County requires all new projects to participate in the Traffic Impact Fee (TIF) Program. As such, the proposed project will participate in the County TIF program/ordinance as described in Section 2.2 of the *County of San Diego Guidelines for Determining Significance and Report Format and Content Requirements – Transportation and Traffic* dated February 19, 2010. The identified project TIF responsibility will contribute to mitigation for local cumulative impacts within the Otay Subregion and regional cumulative impacts within the South TIF region. Otay Lakes Road is an identified TIF-eligible facility. Improvements to Otay Lakes Road identified as mitigation for the proposed project would be eligible for credits under the TIF program.

10.0 Parking Analysis

This Chapter discusses the proposed project's potential impacts to parking capacity, which are determined relative to compliance with applicable County zoning requirements. The following describes the County's parking requirements for each of the project's proposed land uses and the amount of parking to be provided by the project:

- Single-Family Residential – The County Zoning Ordinance requires two parking spaces per dwelling unit, plus one additional space for every ten dwelling units. The project will provide on-site parking for each lot in the single-family residential areas as per the County requirement.

- Mixed-Use – The County Zoning Ordinance requires the following number of parking spaces for residential and commercial uses:

    - Multi-Family Residential
        - 1.5 parking spaces per dwelling unit (0-2 bedrooms)
        - 2 parking spaces per dwelling unit ($\geq$3 bedrooms)
        - 1 additional parking space per every 5 dwelling units for guest parking
    - Commercial (less than 25,000 SF)
        - 5 parking spaces per 1,000 SF

    The project will provide the required number of parking spaces, which may be adjusted relative to the above requirements to account for the shared parking potential between residential and the commercial uses.

- Resort Hotel – The County Zoning Ordinance requires one parking space per guest unit, plus eight additional spaces for a Resort with between 101 and 300 guest units. The project will provide the County required number of parking spaces on-site.

- Elementary School – The County requirement for an elementary school is one space per employee, with five visitor parking spaces. The proposed project would reserve the school site, which would be developed by the Chula Vista Elementary School District. The school district would be responsible for ensuring applicable parking requirements are met.

- Neighborhood Park – The County does not currently have a specific parking requirement for neighborhood parks. The Conceptual Layout for the Neighborhood Park (P-5) includes 26 on-site parking spaces. In addition, approximately 280 on-street parking spaces are available to serve any overflow parking needs associated with the Neighborhood Park within the Village Core.

- Pocket Parks – The County does not currently have a specific parking requirement for pocket parks. On-street parking spaces will be provided at each pocket park. Off street

parking spaces will not be provided at the eight pocket parks in order to encourage residents to walk to these parks.

- Village Core On-Street Parking – At the request of County Department of Public Works (DPW) and Department of Parks and Recreation (DPR), Hunsaker and Associates has prepared an on-street parking exhibit for the Village Core (along Strada Piazza and down around the school). Approximately 280 on-street parking spaces will be available to serve the neighborhood park and overflow parking at the elementary school. Thus, adequate parking is provided for the Village Core.

In summary, the proposed project would provide adequate parking per the County Zoning Ordinance and would not result in potentially significant impacts.

11.0 Plan-to-Plan Analysis

This chapter provides a qualitative plan-to-plan analysis assessing potential impacts to the County's General Plan Circulation Element roadways within the proposed project study area due to the changes in development land use, density, and/or intensity.

In the existing General Plan (adopted on August 3rd, 2011), the project site is shown as Specific Plan Area. The Otay SRP is the controlling land use document for the Otay Ranch project area. The Otay SRP depicts Village 13 as a Specialty Village, composed of a mixed of single and multi-family homes, an 800-room resort, commercial uses and a golf course. This adopted plan would generate a total of 30,461 daily trips for the proposed project site and a breakdown of the trip generation is displayed in **Table 11.1** below.

TABLE 11.1
PROJECT TRIP GENERATION IN THE EXISTING GP

Land Use	Quantity	Trip Generation Rate	Daily Trips
Single Family Residential	530 DU	10 / Unit	5,300
Multi-Family Residential	1,408 DU	8 / Unit	11,264
Resort	800 Rooms	8 / Room	6,400
Commercial	40,000 SF	120 / KSF	4,800
School	10.0 Acres	90 / Acre	900
Parks	16.4 Acres	5 / Acre	82
Golf Course / Driving Range	141.5 Acres	7 / Acre	910
		70 / Acre	805
Total			**30,461**

Source: The Otay Ranch Company

Note:
* A 300 Vehicular Trips / Acre trip generation rate was extracted from the County of San Diego / SANDAG Series 11 General Plan Update land use file.

When compared to the current Resort Village proposal of 27,191 daily trips (as displayed in Table 4.1), the previously analyzed project would generate approximately 3,270 additional daily trips. Since the proposed project would generate fewer project trips (about 11% fewer), the revisions to the proposed project land uses would not create any impacts to the current General Plan Mobility Element.

12.0 Site Access and On-Site Circulation

This chapter presents an assessment of transportation facilities providing access to the proposed project. It also recommends functional classifications for all roadways internal to the project.

12.1 Site Access

The project is located in the County of San Diego, along the eastern segments of Otay Lakes Road, just north of the Lower Otay Reservoir and east of SR-125. Site access is proposed via three (3) driveways off of Otay Lakes Road.

Based upon review of the project site utilization plan and conditions in the field, the following comments on site access are offered:

- The sight distance at each of the driveways is adequate and driveway locations are acceptable given appropriate driveway control.

- The proposed geometry at each of the project driveways is displayed in Figure 8-1A. Project Driveway #1/Intersection #42 would be signalized while driveways #2/Intersection #43 and #3/Intersection #44 would be roundabout controlled. Based on the analyses in the previous sections, all three driveways would operate at acceptable Levels of Service. Project Driveway #1/Intersection #42 will be constructed by the 926th EDU, Project Driveway #2/Intersection #45 will be constructed by the 1st EDU, and Project Driveway #3//Intersection #44 will be constructed by the 1,729th EDU.

- Otay Lakes Road will be constructed as a 4-lane (County's 4.2A Public Road Classification) roadway from Wueste Road to the second project driveway, as proposed by the project; and a 2-lane (County's 2.1D Public Road Classification) roadway from the second driveway to SR-94, as designated in the County of San Diego General Plan Update.

12.2 On-Site Circulation

Based upon buildout of the proposed project land uses and trip generation as shown in Table 4.1, ADT volumes were estimated for the internal roadway segments within the project site. Project trips were distributed and assigned to the internal roadway system based on the location and characteristics of the proposed land uses. **Figure 12-1** displays the resulting internal roadway ADT for the Resort Village.

Table 12.1 displays recommended roadway classifications and resulting Level of Service for the Resort Village internal roadway segments. LOS D is considered acceptable for local internal roadways within Otay Ranch.

As shown, all of the analyzed internal roadway segments within the project would operate at acceptable LOS D or better under buildout conditions with the recommended roadway

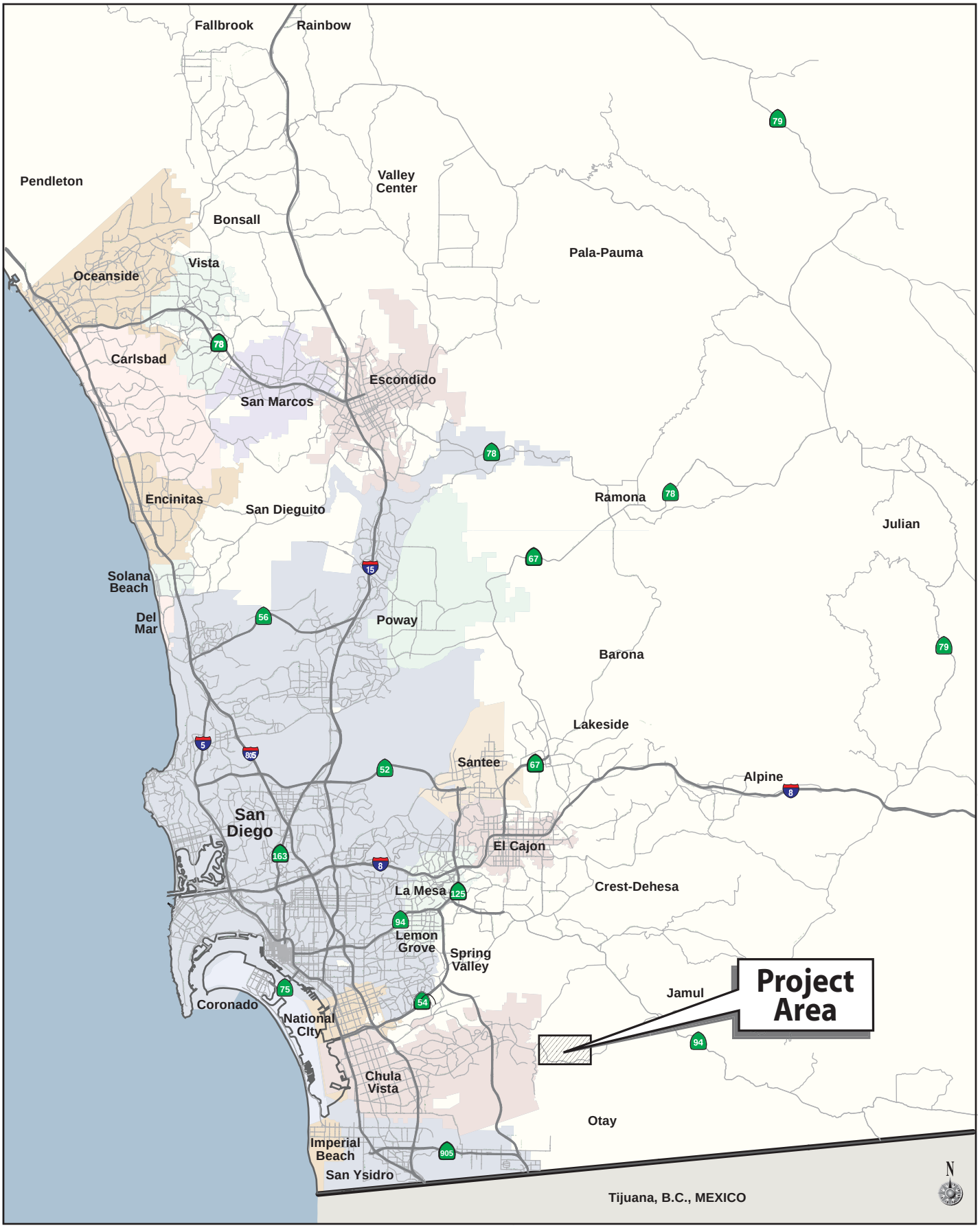
classifications. Residential collectors are estimated to operate within their design capacities, respectively.

TABLE 12.1
RESORT VILLAGE INTERNAL ROADWAY SEGMENT PERFORMANCE

Internal Roadway	Estimated ADT	Recommended Classification	LOS D Threshold	LOS
"A"	13,500	4.2A	27,000	C
"B"	11,800	2.2B	13,500	D
"C"	9,600	2.2E	10,900	D
"D"	5,900	2.3C	10,900	D
"E"	5,400	2.3C	10,900	D
"F"	2,700	Residential Collector	Design Capacity – LOS C @ 4,500	C or better
"G"	3,100	Residential Collector	Design Capacity – LOS C @ 4,500	C or better
"H"	2,800	Residential Collector	Design Capacity – LOS C @ 4,500	C or better
"I"	2,300	Residential Collector	Design Capacity – LOS C @ 4,500	C or better
"J"	1,100	Residential Collector	Design Capacity – LOS C @ 4,500	C or better
"K"	4,600	2.3C	7,000	D
"L"	6,200	2.3C	7,000	D

Source: Chen Ryan Associates; March 2015

Graphics



SOURCE: Chen Ryan; June 2014

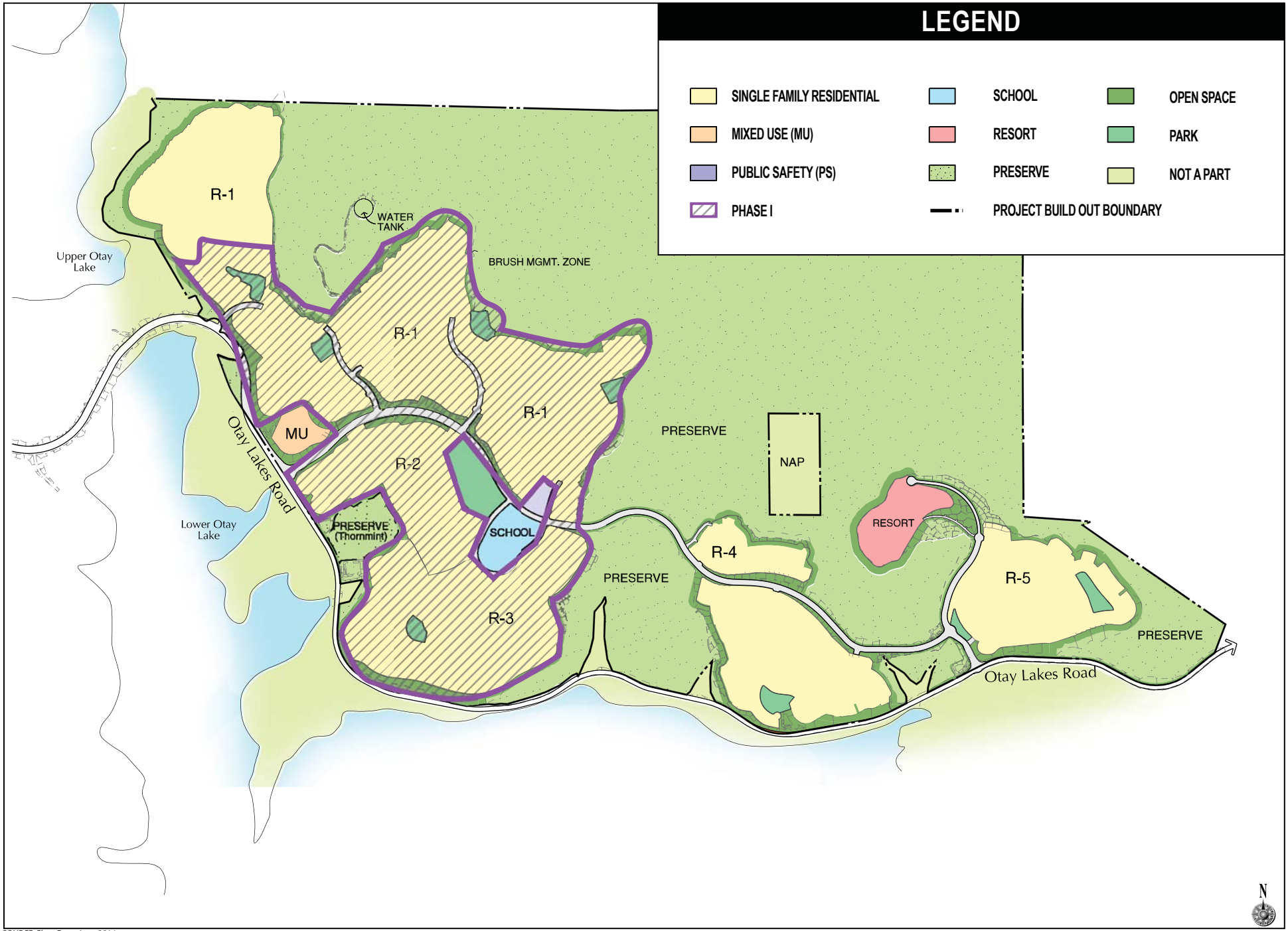
Figure 1-1
Project Regional Location

OTAY RANCH Resort Village CHEN RYAN

SOURCE:Chen Ryan; June 2014

Figure 1-2
Project Study Area

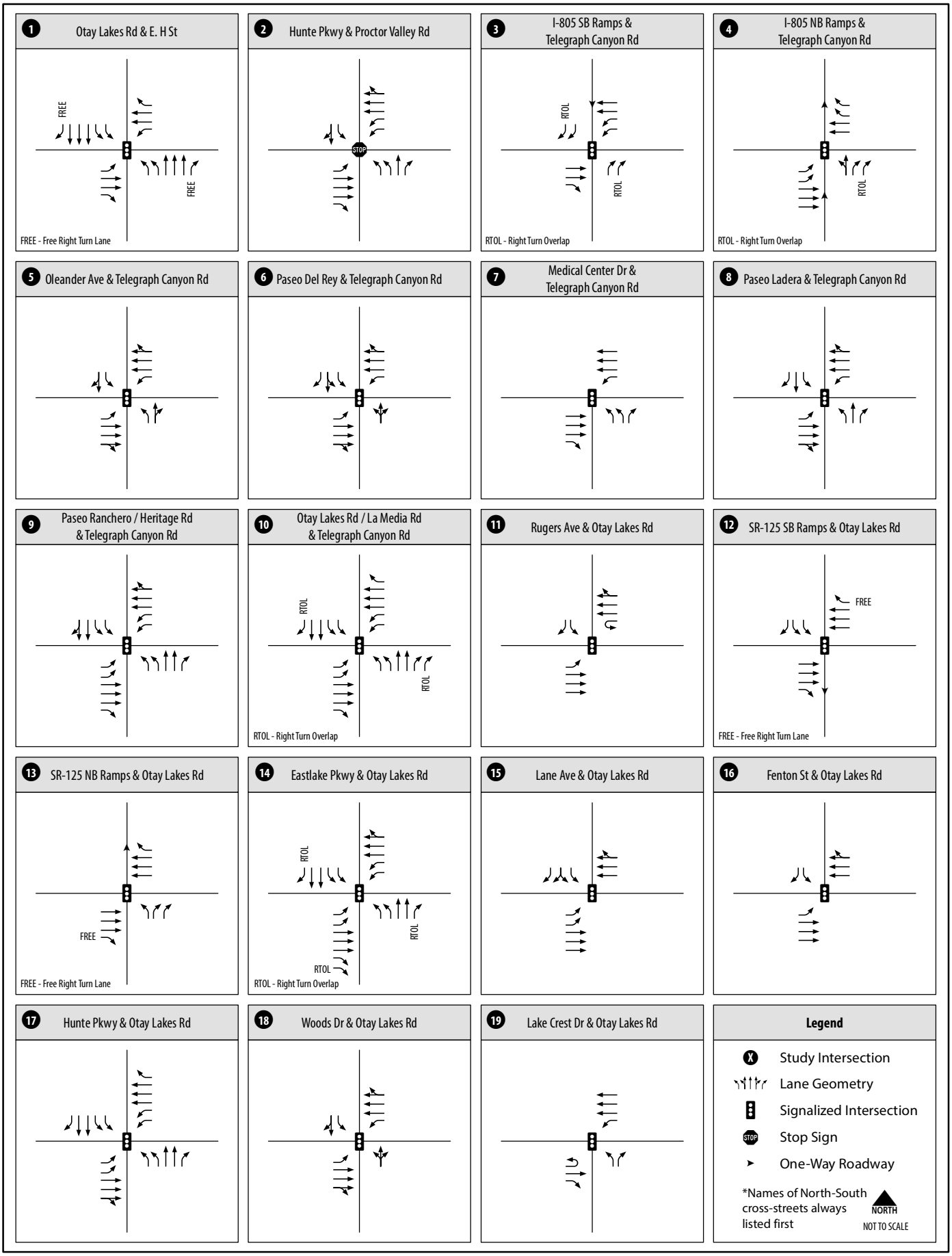
OTAY RANCH Resort Village CHEN RYAN



SOURCE: Chen Ryan; June 2014

OTAY RANCH *Resort Village* CHEN RYAN

Figure 1-3
Project Site Plan

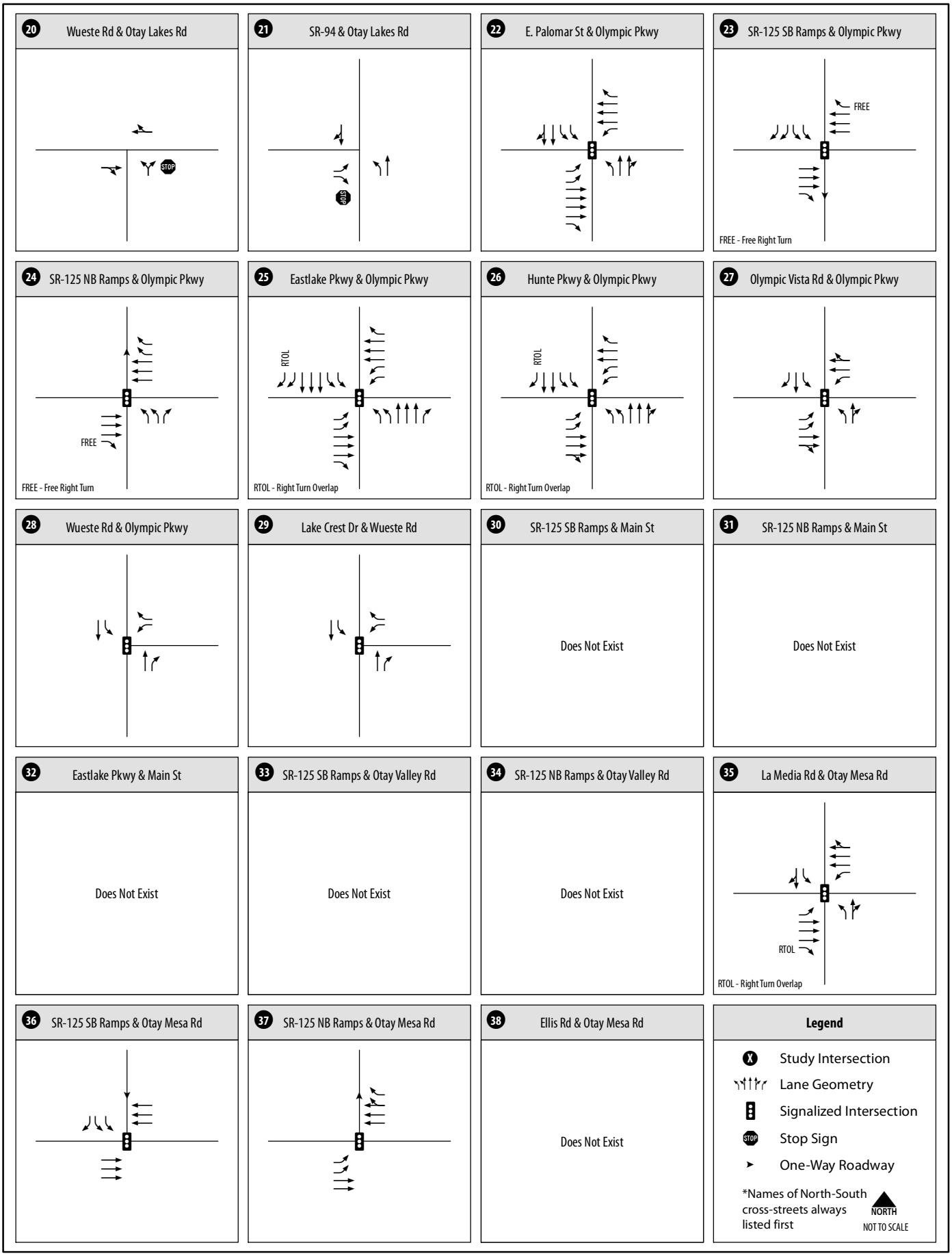


Source: Chen Ryan; June 2014

Resort Village CHEN RYAN

Figure 3-1A

Intersection Geometrics - Existing Conditions (Intersections 1-19)



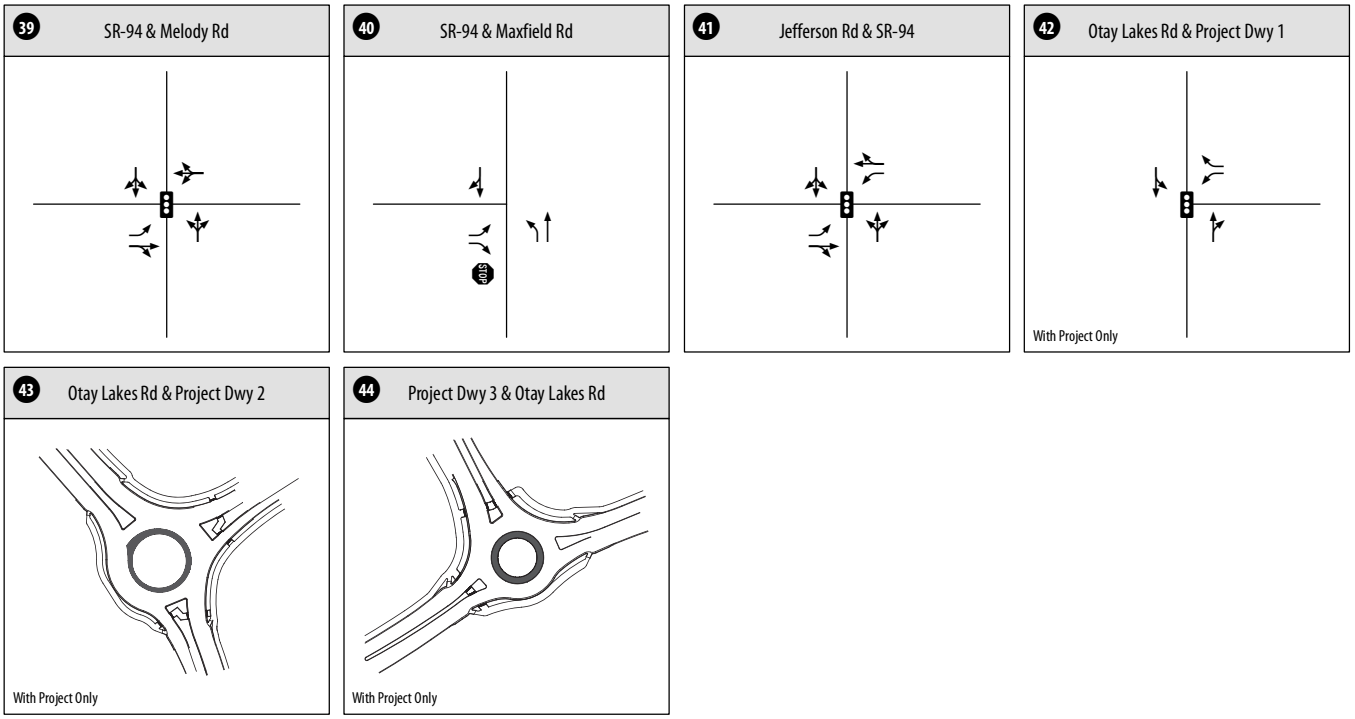
Source: Chen Ryan; June 2014

OTAY RANCH

Resort Village CHEN RYAN

Figure 3-1A

Intersection Geometrics - Existing Conditions (Intersections 20-38)



Legend

- X — Study Intersection
- Lane Geometry
- Signalized Intersection
- STOP — Stop Sign
- One-Way Roadway

*Names of North-South cross-streets always listed first

NORTH

NOT TO SCALE

Source: Chen Ryan; June 2014

OTAY RANCH

Resort Village CHEN RYAN

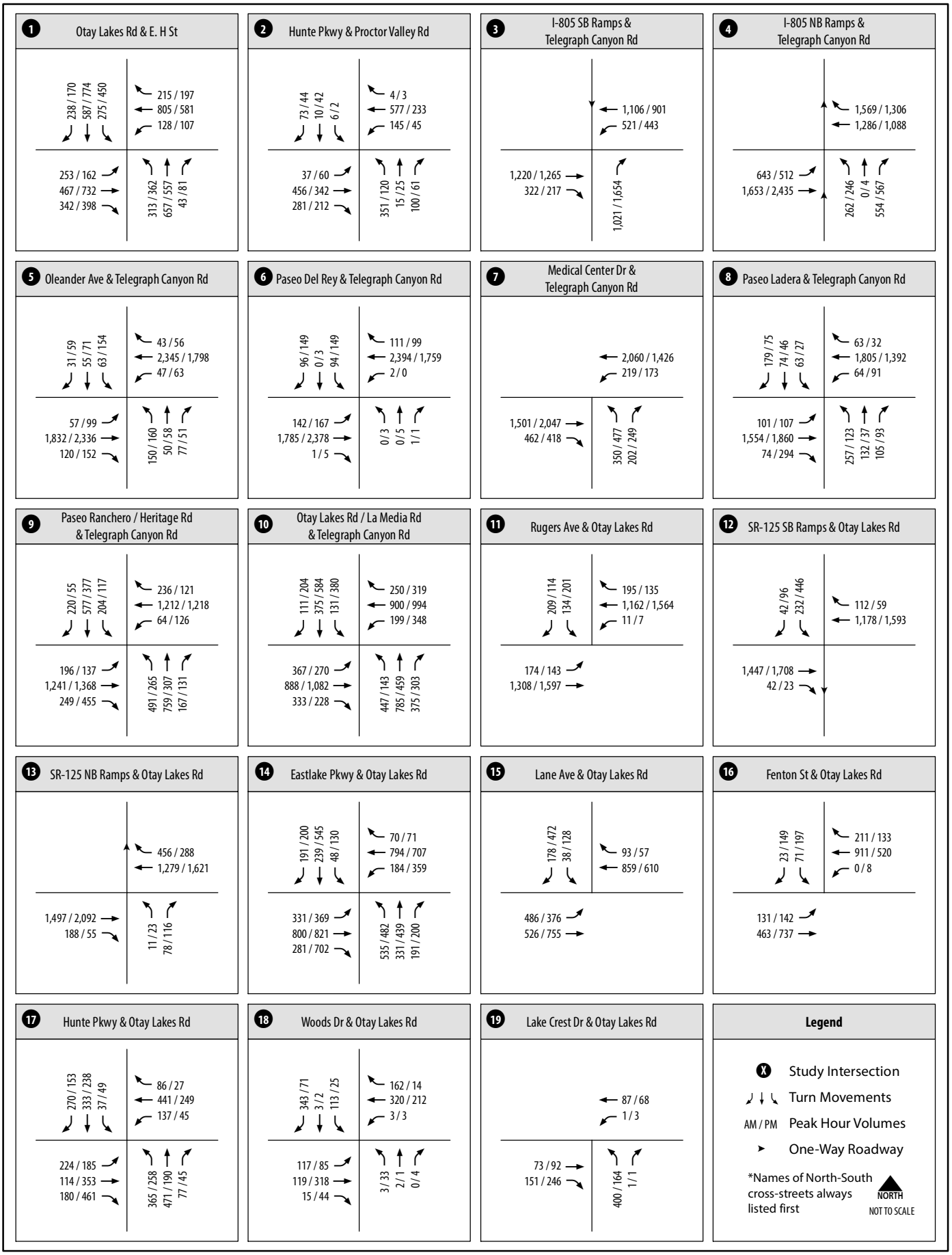
Figure 3-1A

Intersection Geometrics - Existing Conditions (Intersections 39-44)

SOURCE:Chen Ryan; June 2014

Figure 3-1B

Roadway Geometrics - Existing Conditions



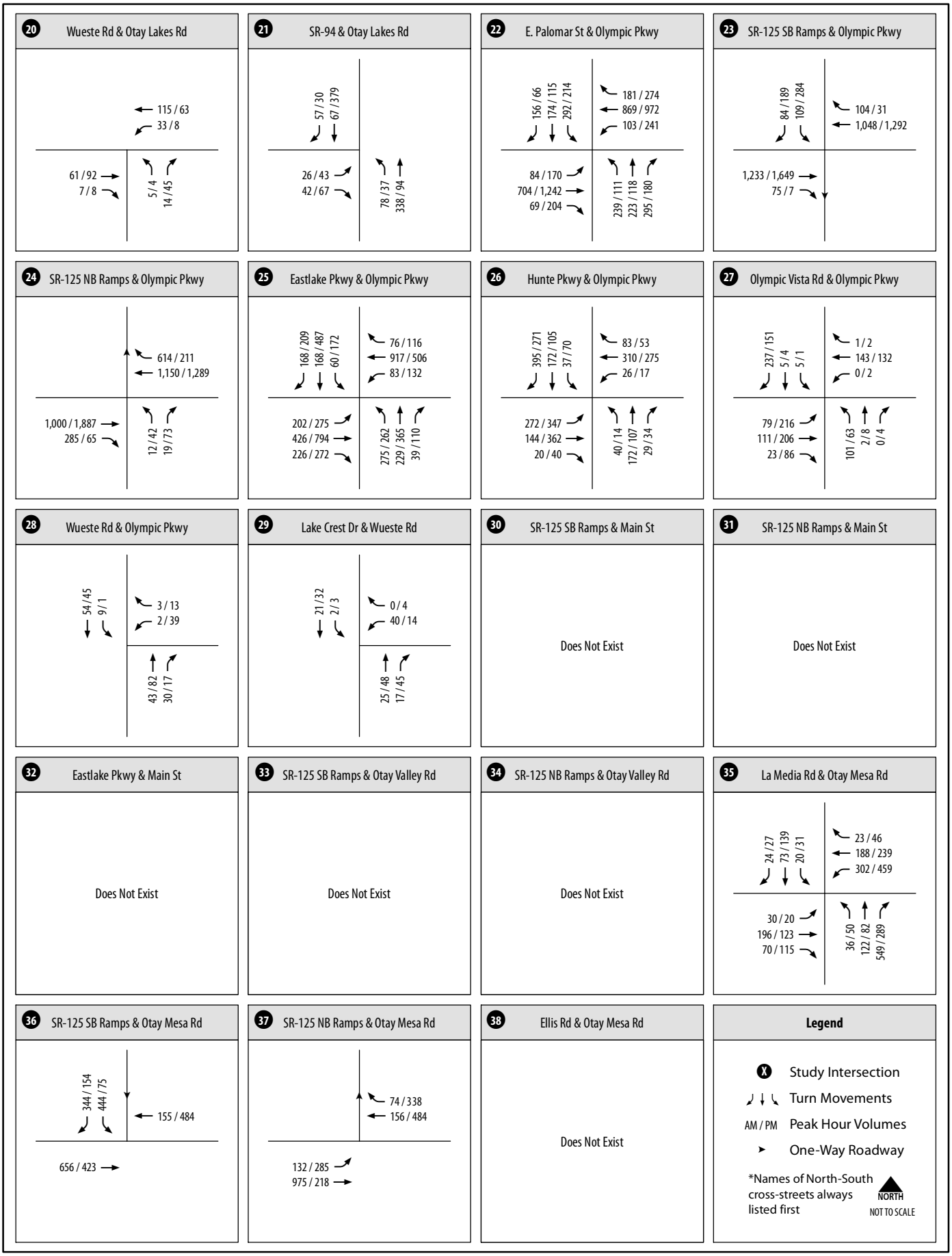
Source: Chen Ryan; June 2014

Resort Village

CHEN RYAN

Figure 3-2A

Intersection Peak Hour Traffic Volumes - Existing Conditions (Intersections 1-19)



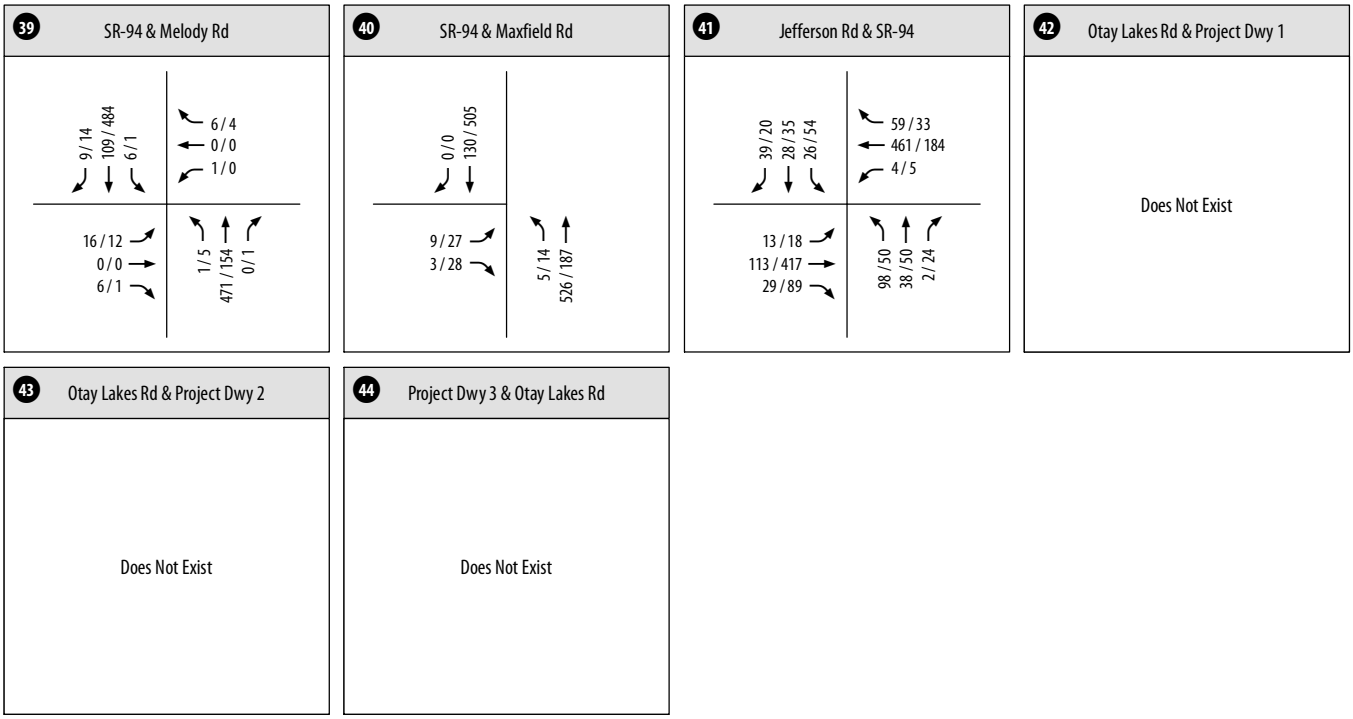
Source: Chen Ryan; June 2014

OTAY RANCH

Resort Village CHEN RYAN

Figure 3-2A

Intersection Peak Hour Traffic Volumes - Existing Conditions (Intersections 20-38)



Legend

- X — Study Intersection
- Turn Movements
- AM / PM — Peak Hour Volumes
- One-Way Roadway

*Names of North-South cross-streets always listed first

NORTH
NOT TO SCALE

Source: Chen Ryan; June 2014

OTAY RANCH

Resort Village CHEN RYAN

Figure 3-2A

Intersection Peak Hour Traffic Volumes - Existing Conditions (Intersections 39-44)

SOURCE: Chen Ryan; June 2014

Figure 3-2B

Average Daily Traffic Volumes - Existing Conditions

OTAY RANCH Resort Village CHEN RYAN

LEGEND

- # Study Intersection
- XX% Percent of Project Traffic

SOURCE:Chen Ryan; June 2014

Figure 4-1A

Project Trip Distribution - Existing Network

OTAY RANCH Resort Village CHEN RYAN

SOURCE: Chen Ryan; June 2014

OTAY RANCH Resort Village CHEN RYAN

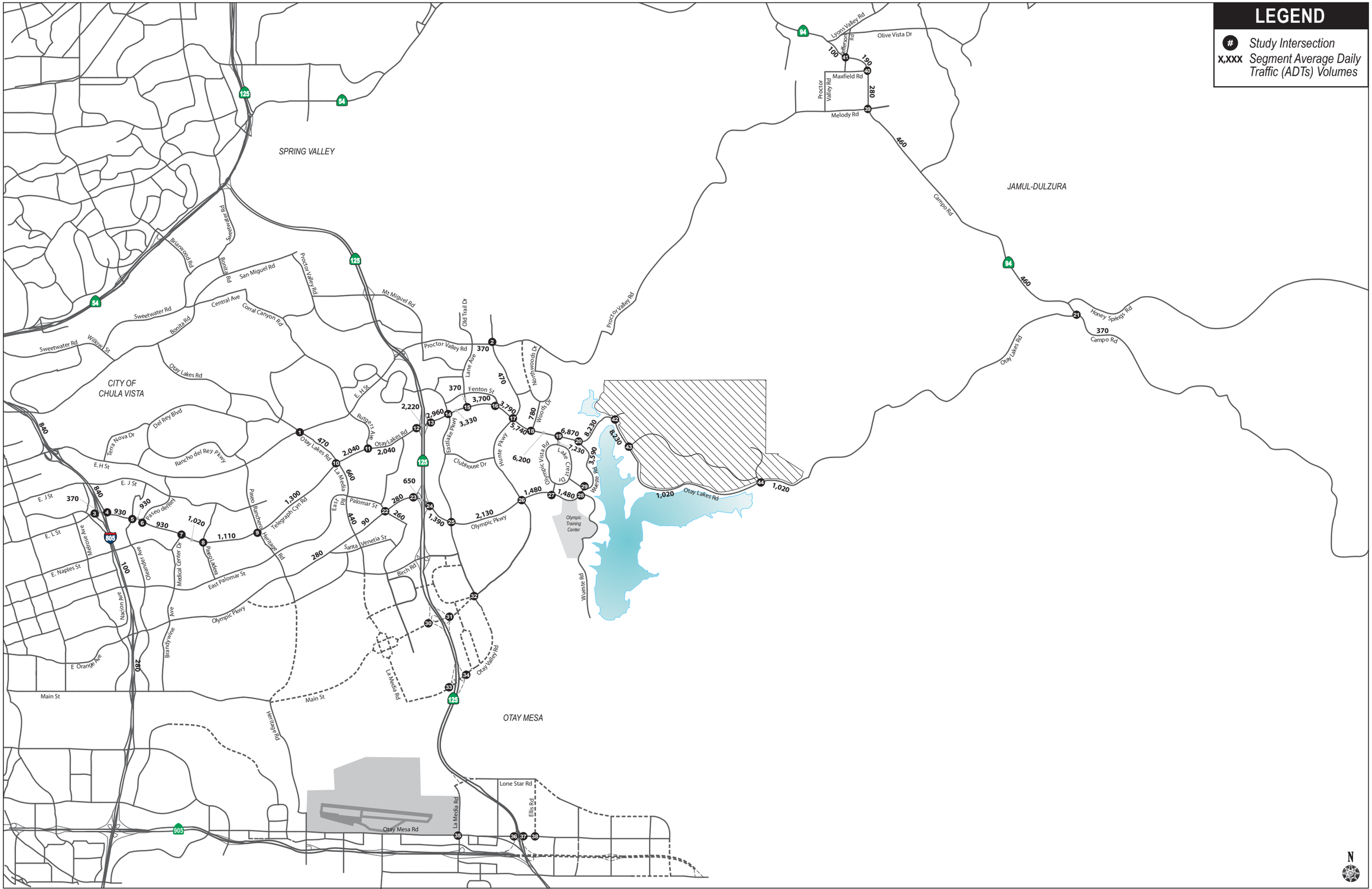
Figure 4-1B

Project Trip Distribution - Buildout Cumulative (Year 2025) Network

Figure 4-1C

Project Trip Distribution - Year 2030 Network

OTAY RANCH Resort Village CHEN RYAN

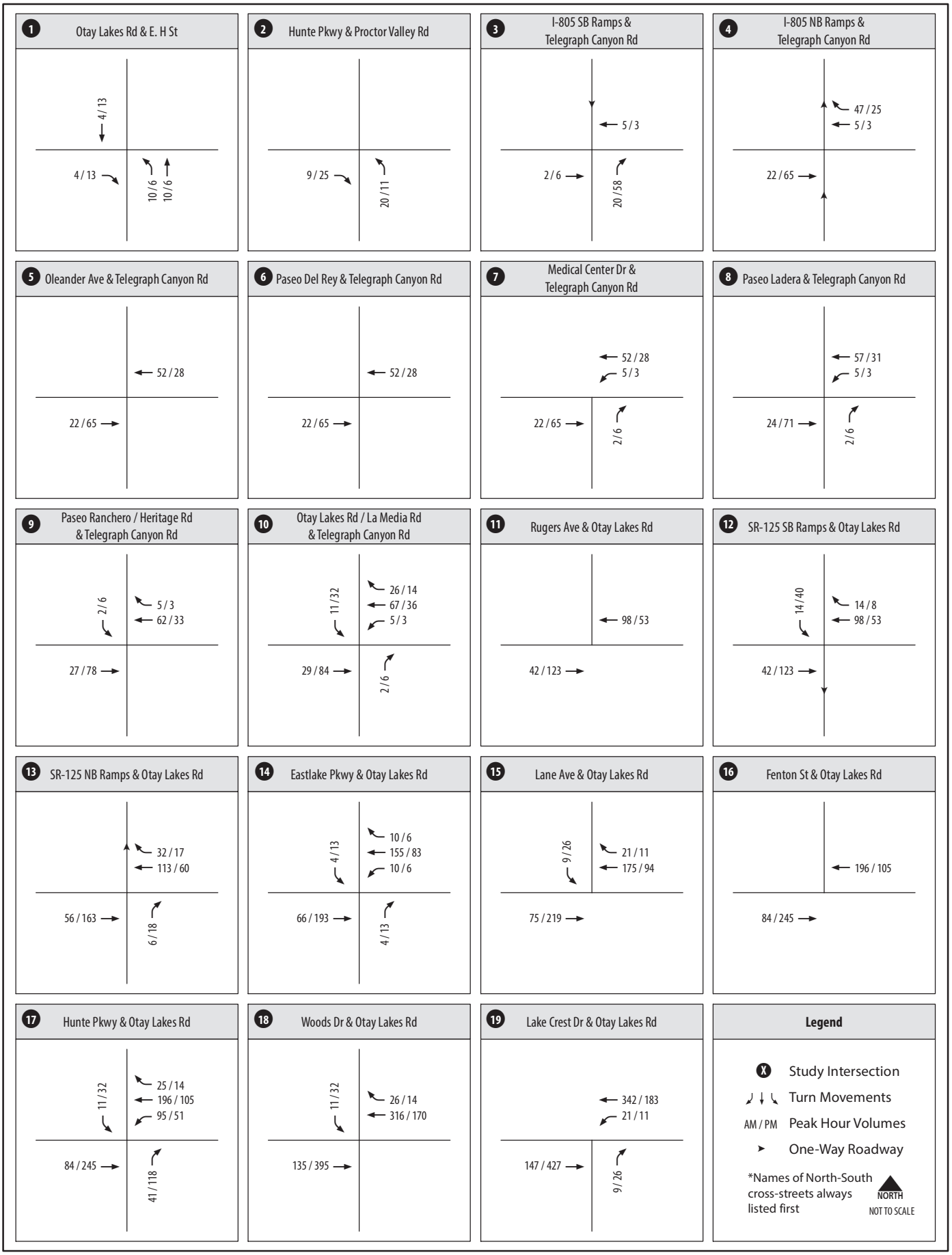


SOURCE: Chen Ryan; June 2014

Figure 4-2A.1

Project (Phase I) Trip Assignment Roadway - Existing Network

OTAY RANCH Resort Village CHEN RYAN



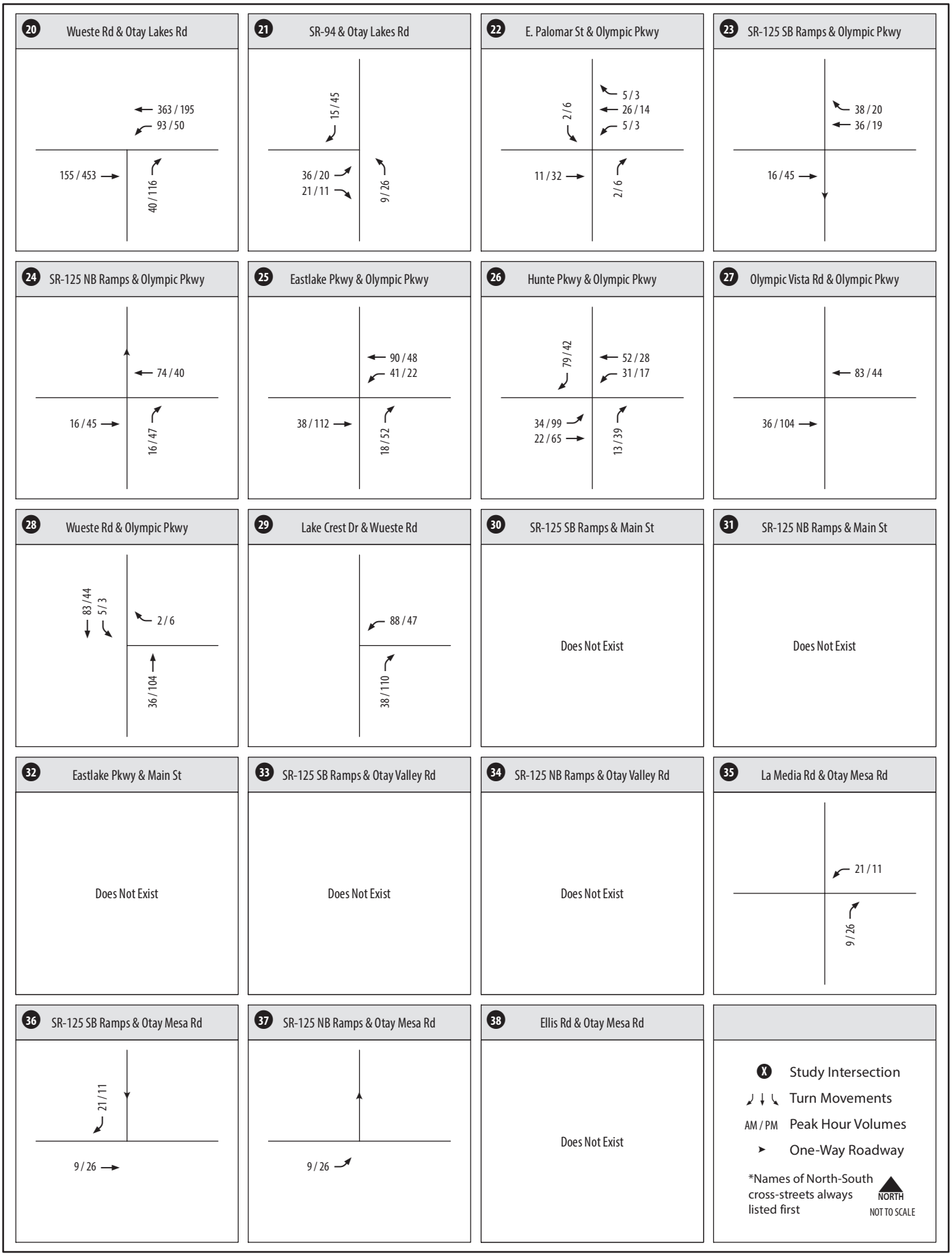
Source: Chen Ryan; June 2014

OTAY RANCH

Resort Village CHEN RYAN

Figure 4-2A.2

Project (Phase I) Trip Assignment (Intersection) - Existing Network (Intersections 1-19)

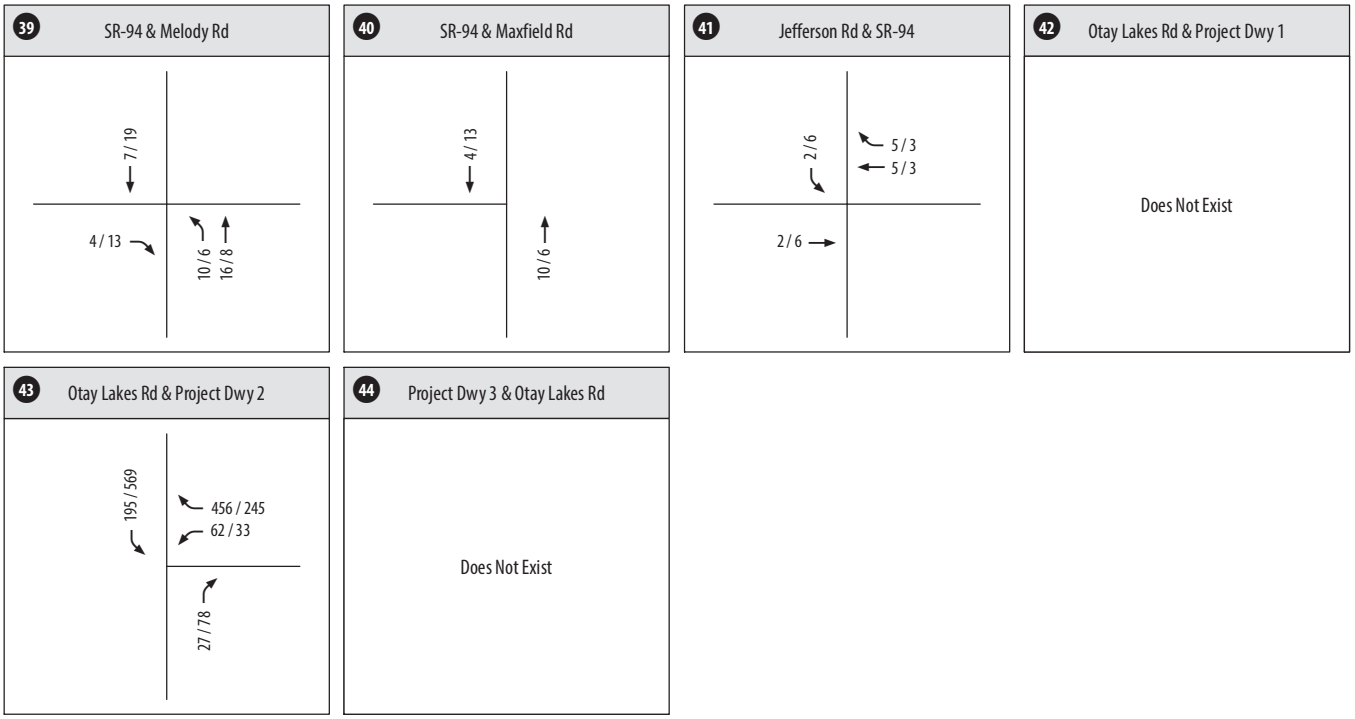


Source: Chen Ryan; June 2014

Resort Village CHEN RYAN

Figure 4-2A.2

Project (Phase I) Trip Assignment (Intersection) - Existing Network (Intersections 20-38)



Legend

- X — Study Intersection
- Turn Movements
- AM / PM — Peak Hour Volumes
- One-Way Roadway

*Names of North-South cross-streets always listed first

NORTH
NOT TO SCALE

Source: Chen Ryan; June 2014

OTAY RANCH

Resort Village CHEN RYAN

Figure 4-2A.2

Project (Phase I) Trip Assignment (Intersection) - Existing Network (Intersections 39-44)

LEGEND

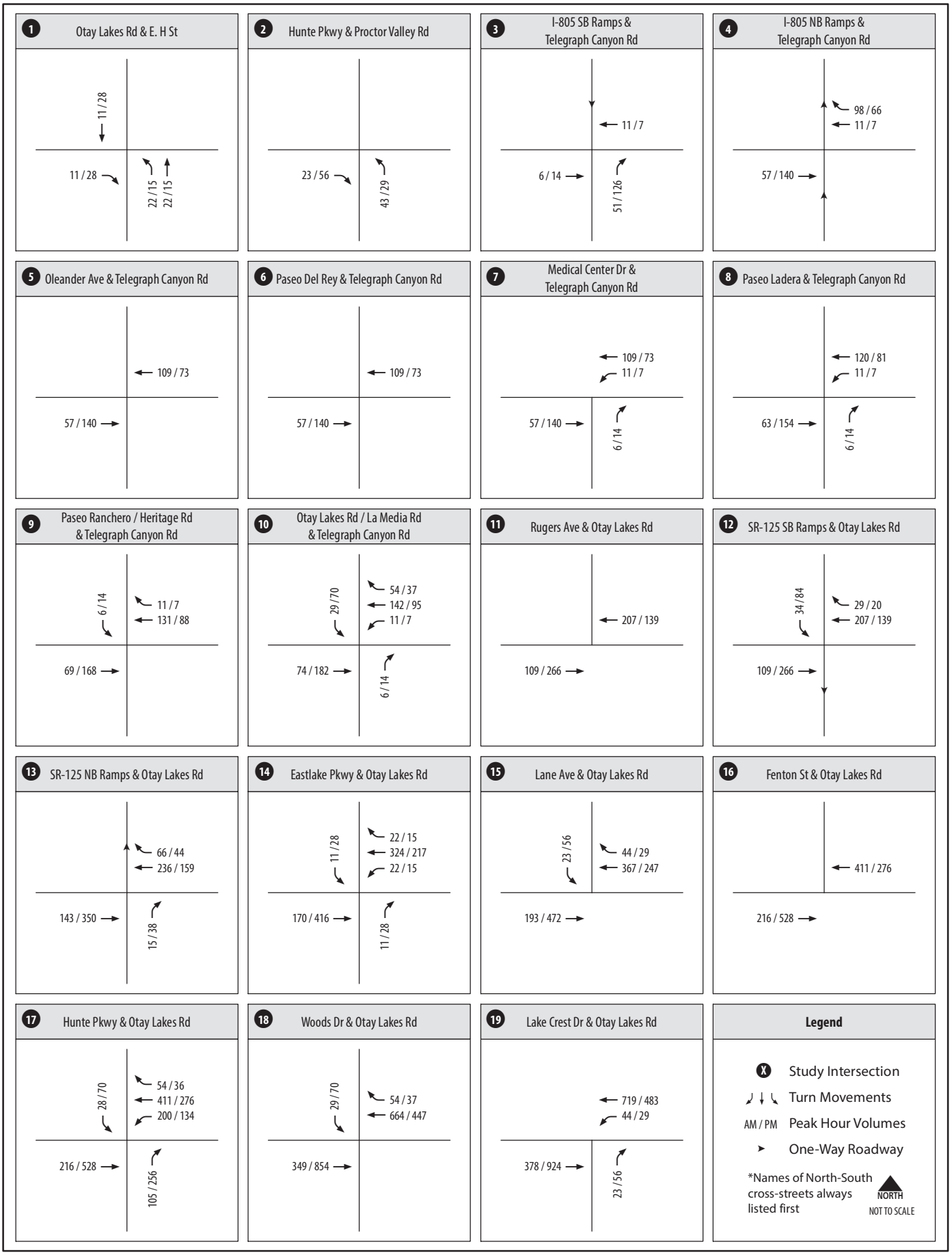
- (#) Study Intersection
- X,XXX Segment Average Daily Traffic (ADTs) Volumes

SOURCE: Chen Ryan; June 2014

Figure 4-2B.1 (Roadway)

Project (Buildout) Trip Assignment - Existing Network

OTAY RANCH Resort Village CHEN RYAN

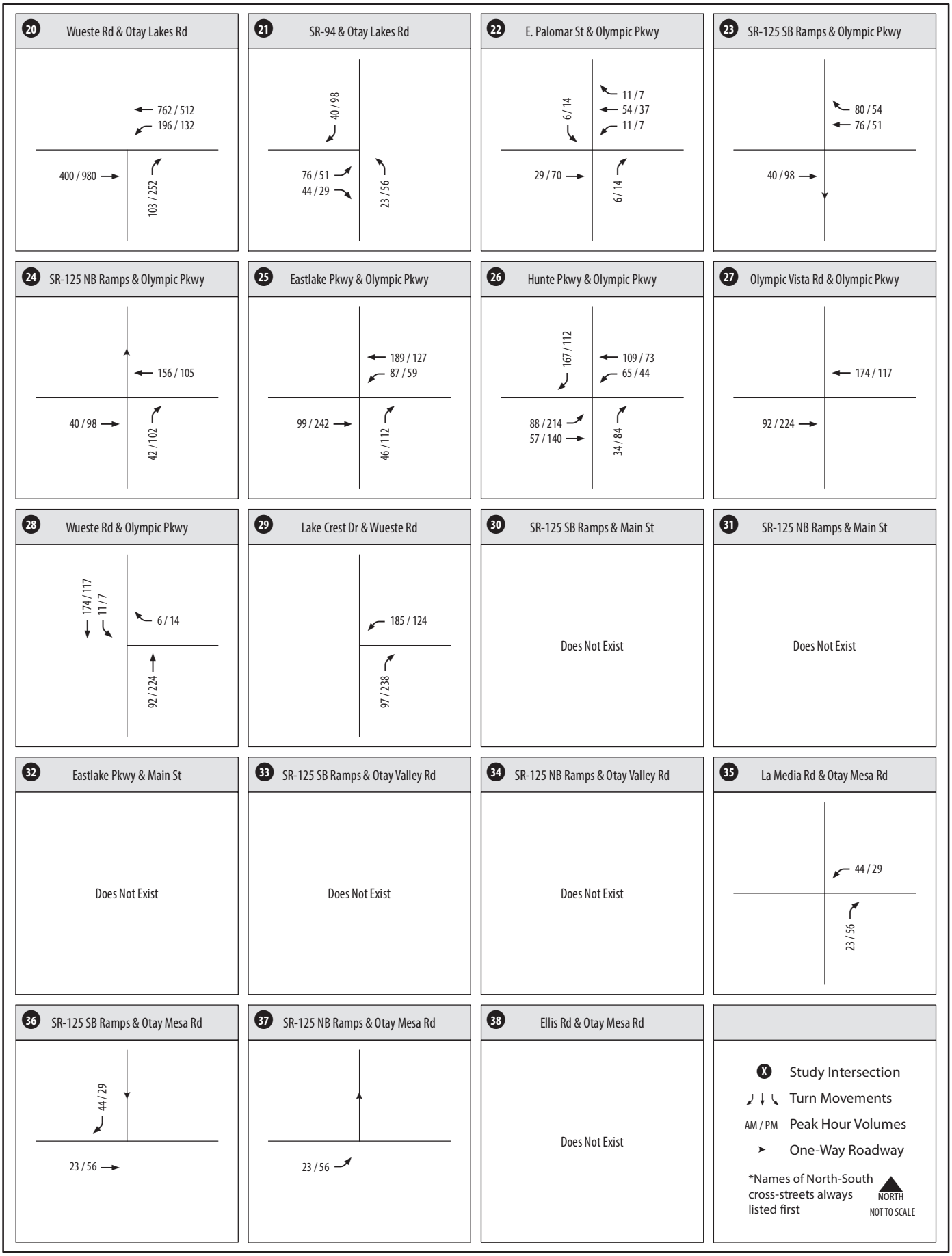


Source: Chen Ryan; June 2014

Resort Village CHEN RYAN

Figure 4-2B.2

Project (Buildout) Trip Assignment (Intersection) - Existing Network (Intersections 1-19)



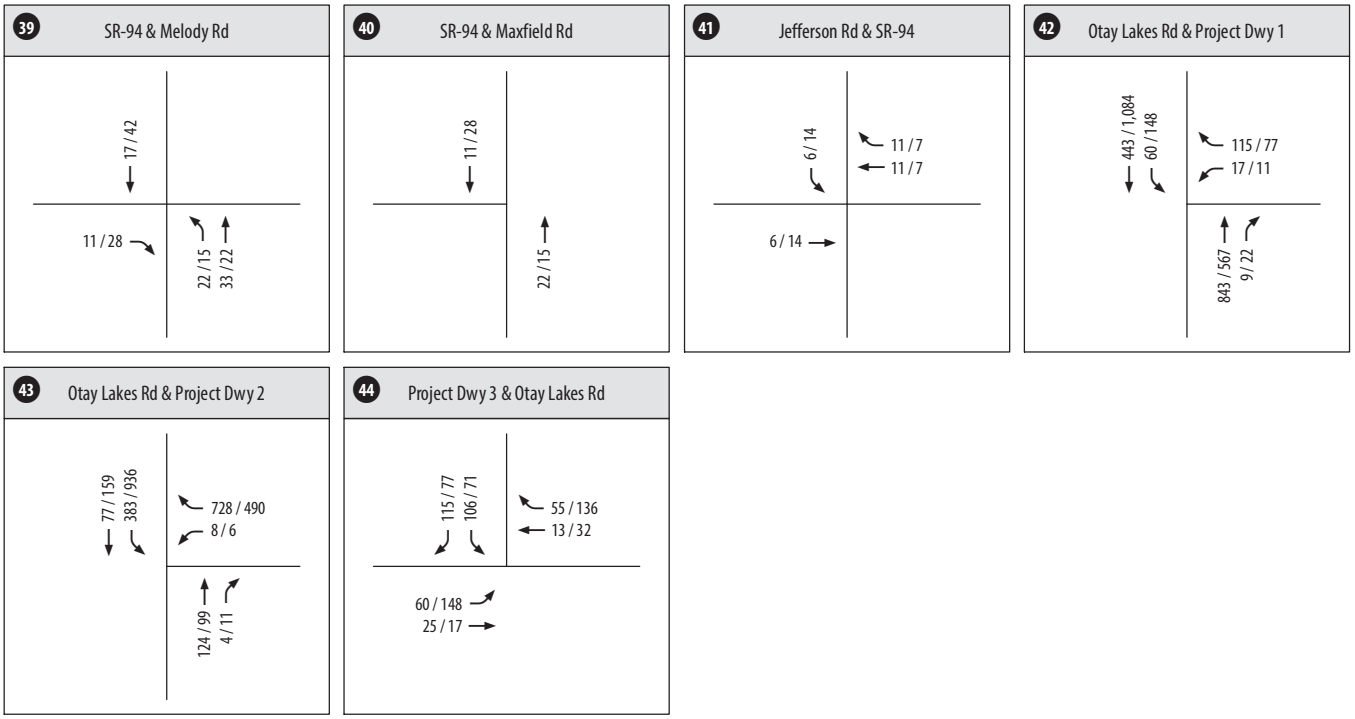
Source: Chen Ryan; June 2014

OTAY RANCH

Resort Village CHEN RYAN

Figure 4-2B.2

Project (Buildout) Trip Assignment (Intersection) - Existing Network (Intersections 20-38)



Legend

- X — Study Intersection
- Turn Movements
- AM / PM — Peak Hour Volumes
- One-Way Roadway

*Names of North-South cross-streets always listed first

NORTH
NOT TO SCALE

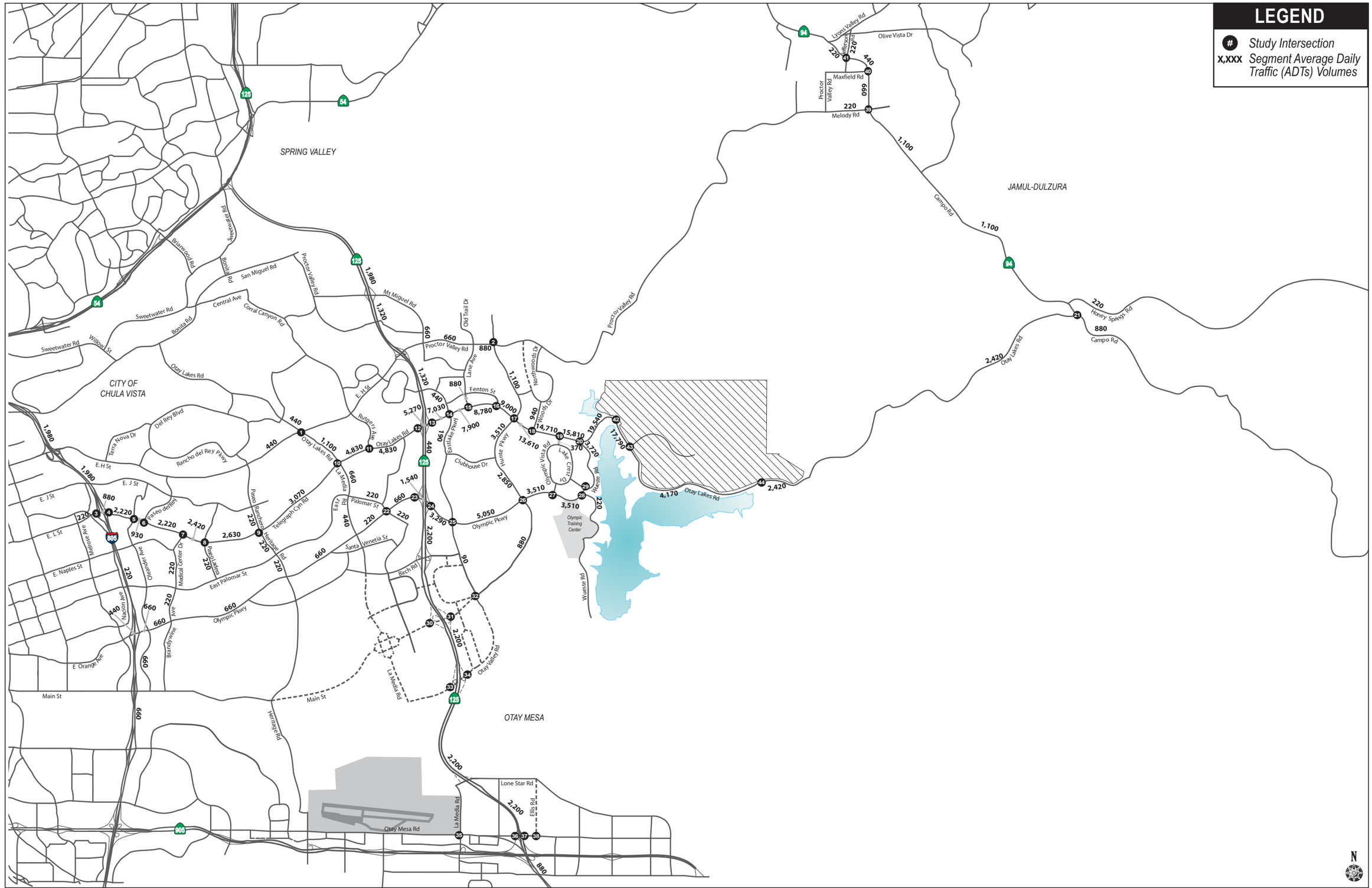
Source: Chen Ryan; June 2014

OTAY RANCH VILLAGE

Resort Village CHEN RYAN

Figure 4-2B.2

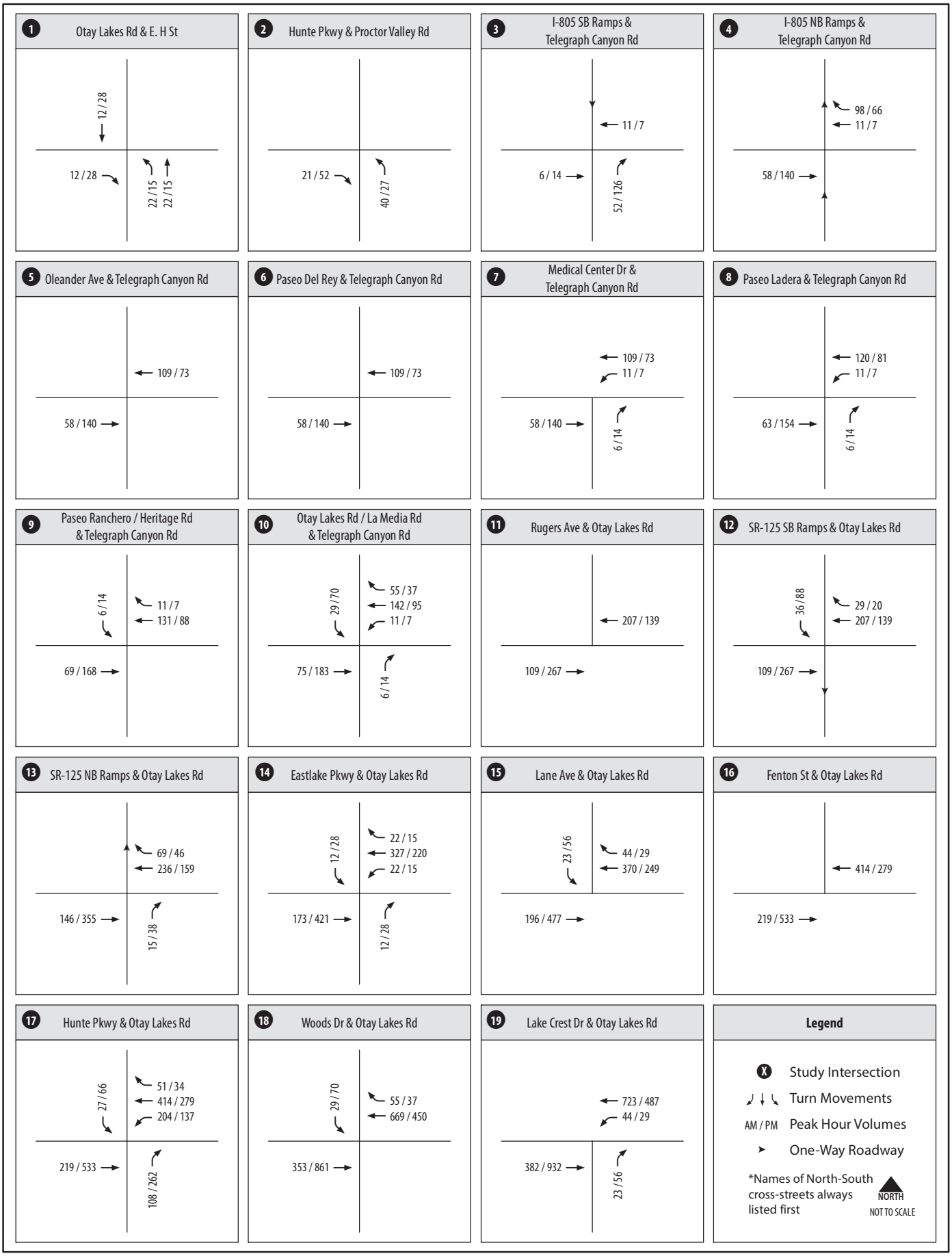
Project (Buildout) Trip Assignment (Intersection) - Existing Network (Intersections 39-44)



SOURCE: Chen Ryan; June 2014

Figure 4-2C.1

Project (Buildout) Trip Assignment (Roadway) - Cumulative (Year 2025) Network



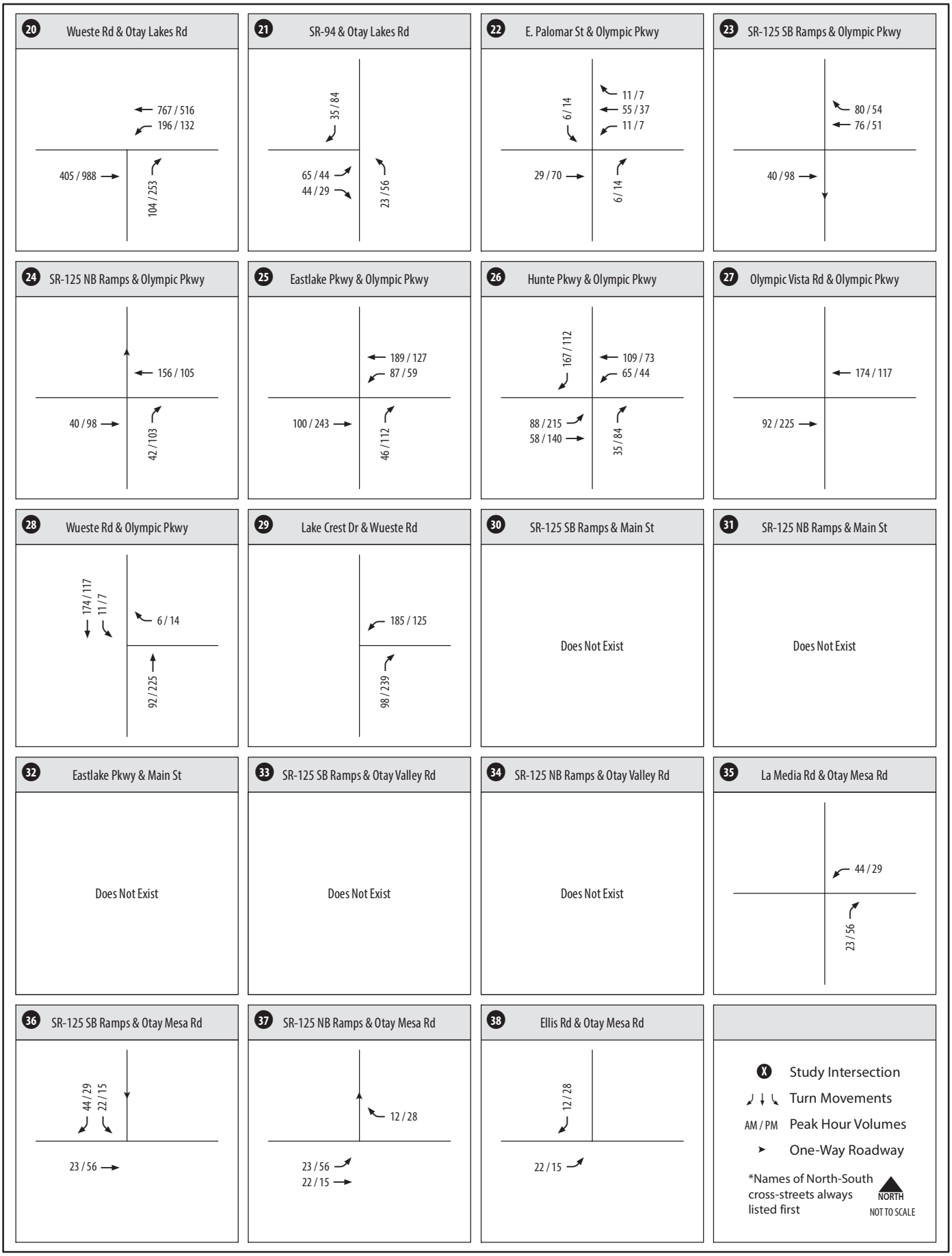
Source: Chen Ryan; June 2014

OTAY RANCH

Resort Village CHEN RYAN

Figure 4-2C.2

Project (Buildout) Trip Assignment (Intersection) - Year 2025 Network (Intersections 1-19)



Source: Chen Ryan; June 2014

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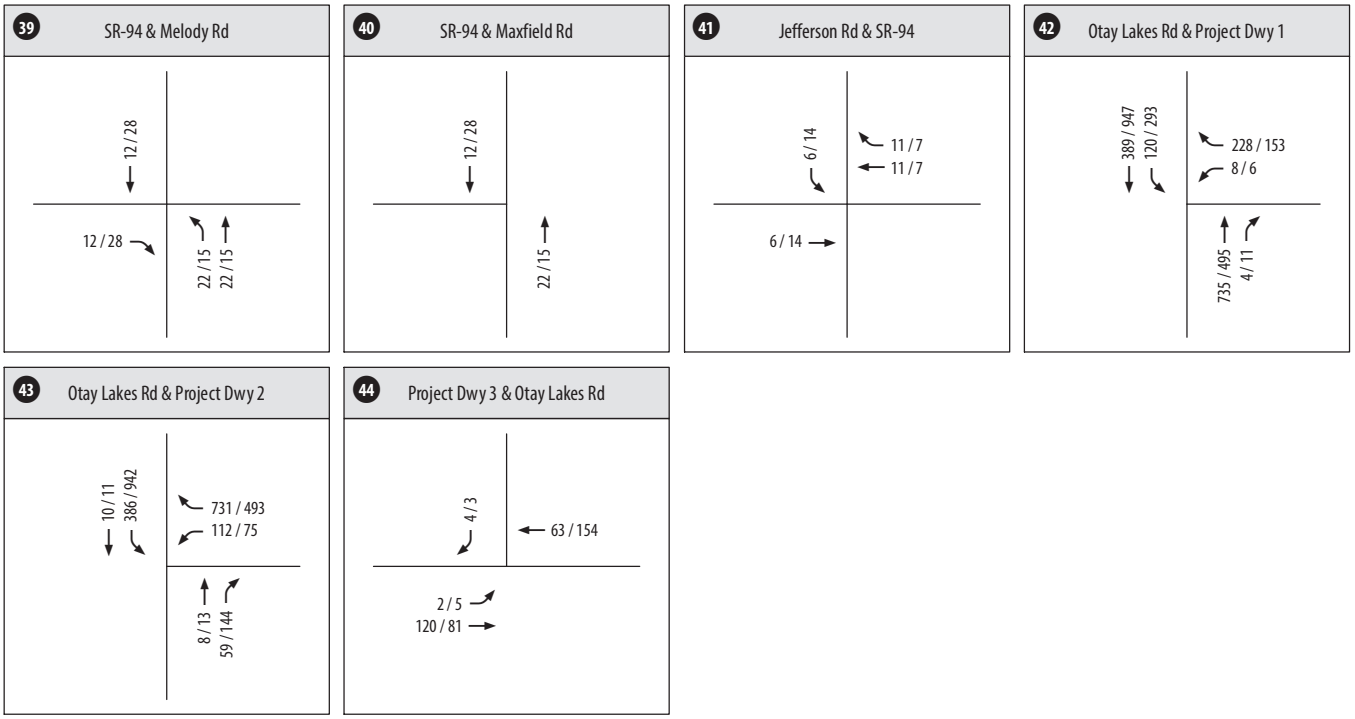
Resort Village CHEN RYAN

Figure 4-2C.2

Project (Buildout) Trip Assignment (Intersection) - Near-Term Year 2025 Network (Intersections 20-38)



Legend

- (X) Study Intersection
- Turn Movements
- AM / PM Peak Hour Volumes
- One-Way Roadway

*Names of North-South cross-streets always listed first

NORTH
NOT TO SCALE

Source: Chen Ryan; June 2014

OTAY RANCH

Resort Village CHEN RYAN

Figure 4-2C.2

Project (Buildout) Trip Assignment (Intersection) - Near-Term Year 2025 Network (Intersections 39-44)

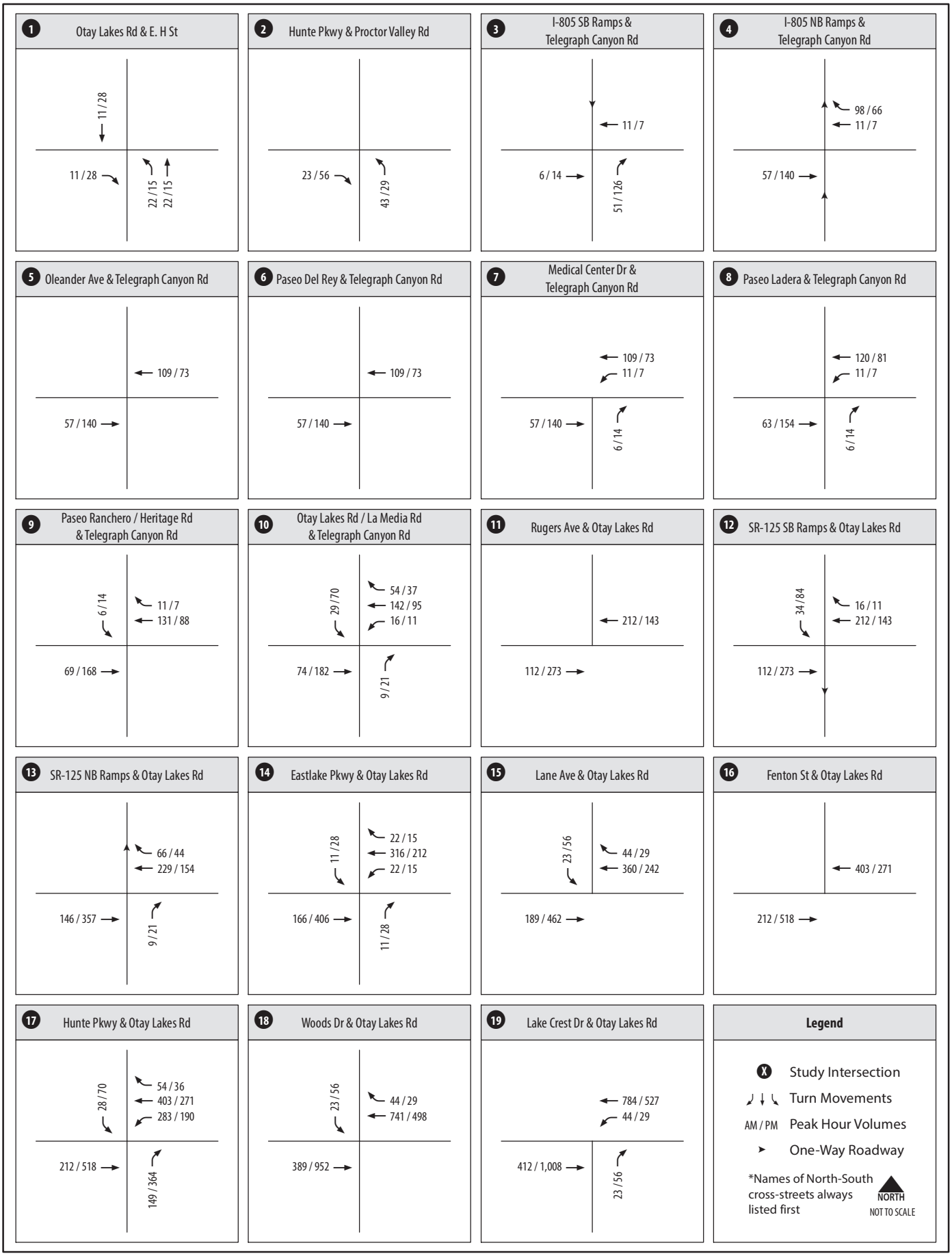
LEGEND

- (#) Study Intersection
- X,XXX Segment Average Daily Traffic (ADTs) Volumes

SOURCE: Chen Ryan; June 2014

Figure 4-2D.1 (Roadway)
Project (Buildout) Trip Assignment - Year 2030 Network

OTAY RANCH Resort Village CHEN RYAN



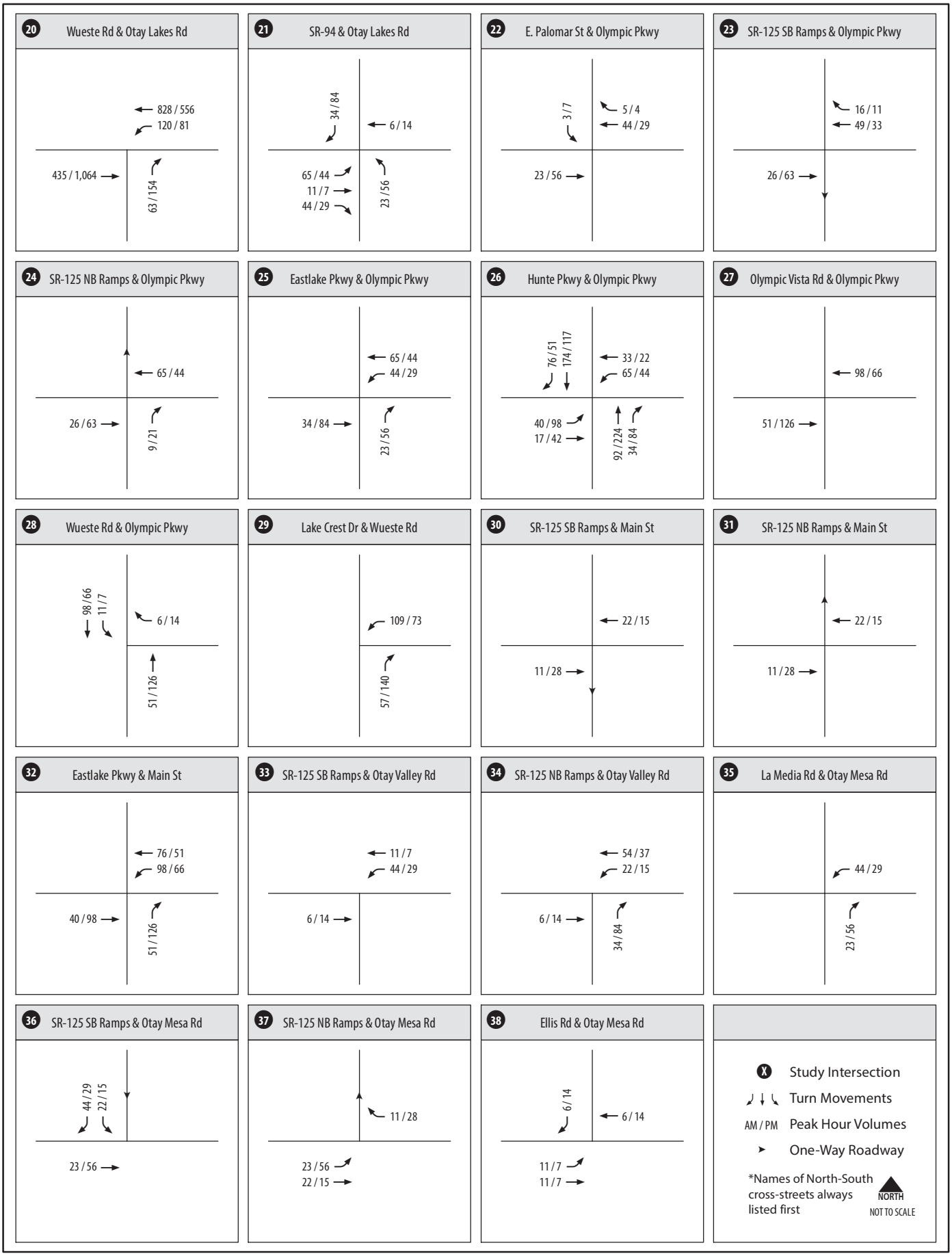
Source: Chen Ryan; August 2013

OTAY RANCH

Resort Village CHEN RYAN

Figure 4-2D.2

Project (Buildout) Trip Assignment (Intersection) - Year 2030 Network (Intersections 1-19)



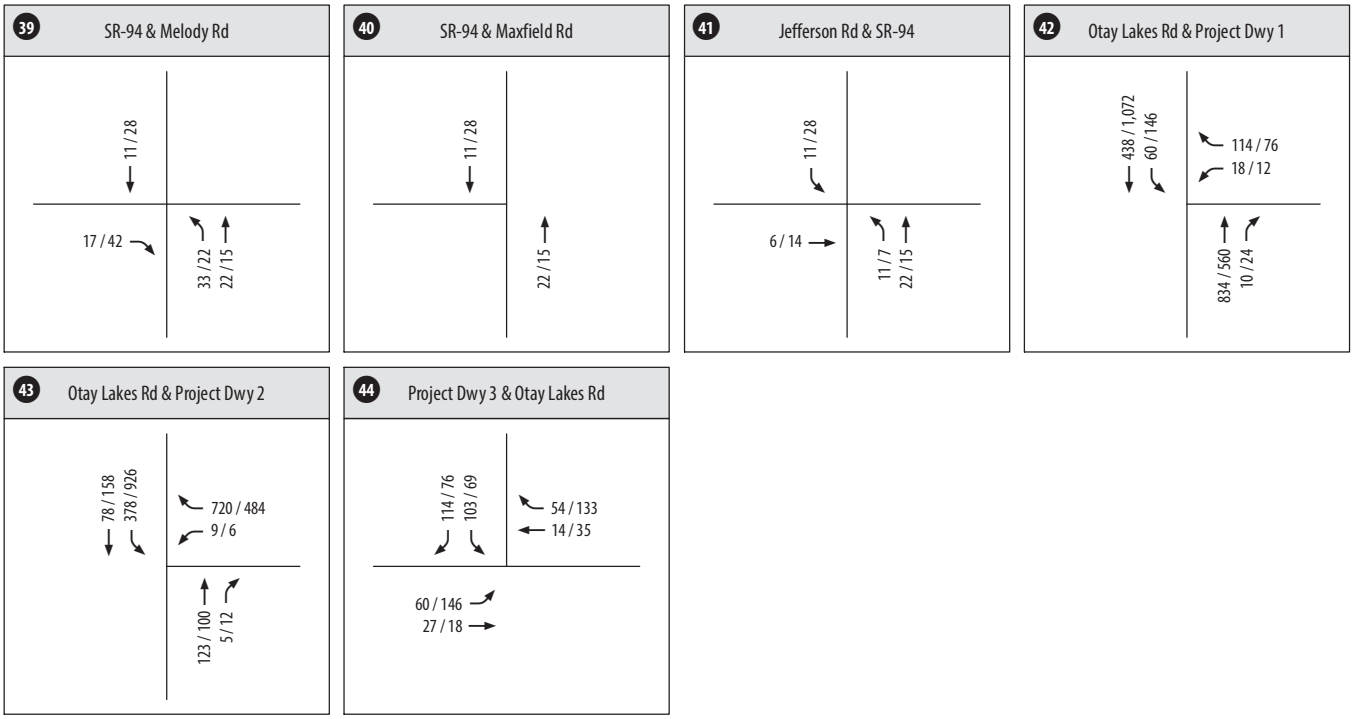
Source: Chen Ryan; June 2014

OTAY RANCH VILLAGE

Resort Village CHEN RYAN

Figure 4-2D.2

Project (Buildout) Trip Assignment (Intersection) - Year 2030 Network (Intersections 20-38)



Legend

- X — Study Intersection
- Turn Movements
- AM / PM — Peak Hour Volumes
- One-Way Roadway

*Names of North-South cross-streets always listed first

NORTH
NOT TO SCALE

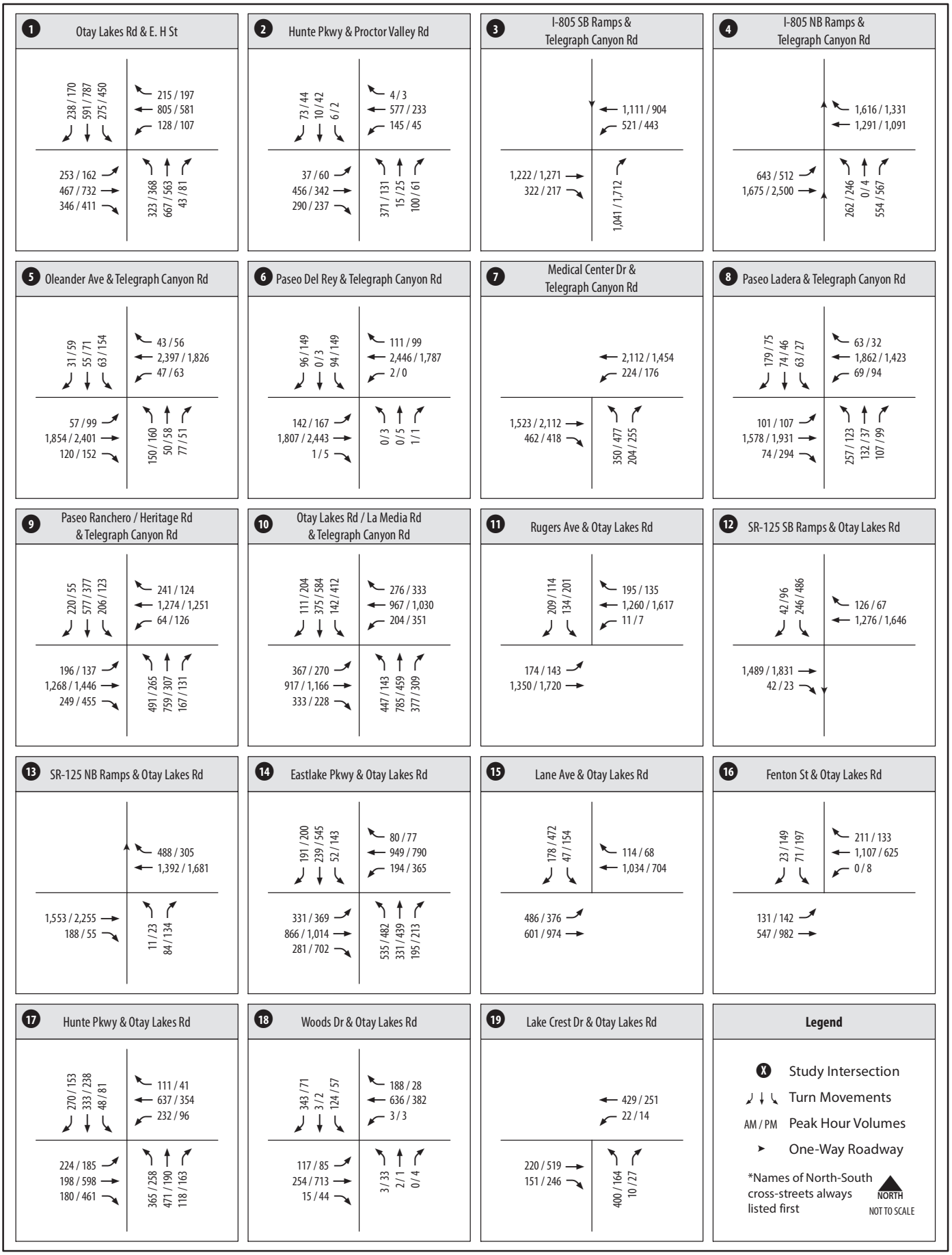
Source: Chen Ryan; June 2014

OTAY RANCH VILLAGE

Resort Village CHEN RYAN

Figure 4-2D.2

Project (Buildout) Trip Assignment (Intersection) - Year 2030 Network (Intersections 39-44)

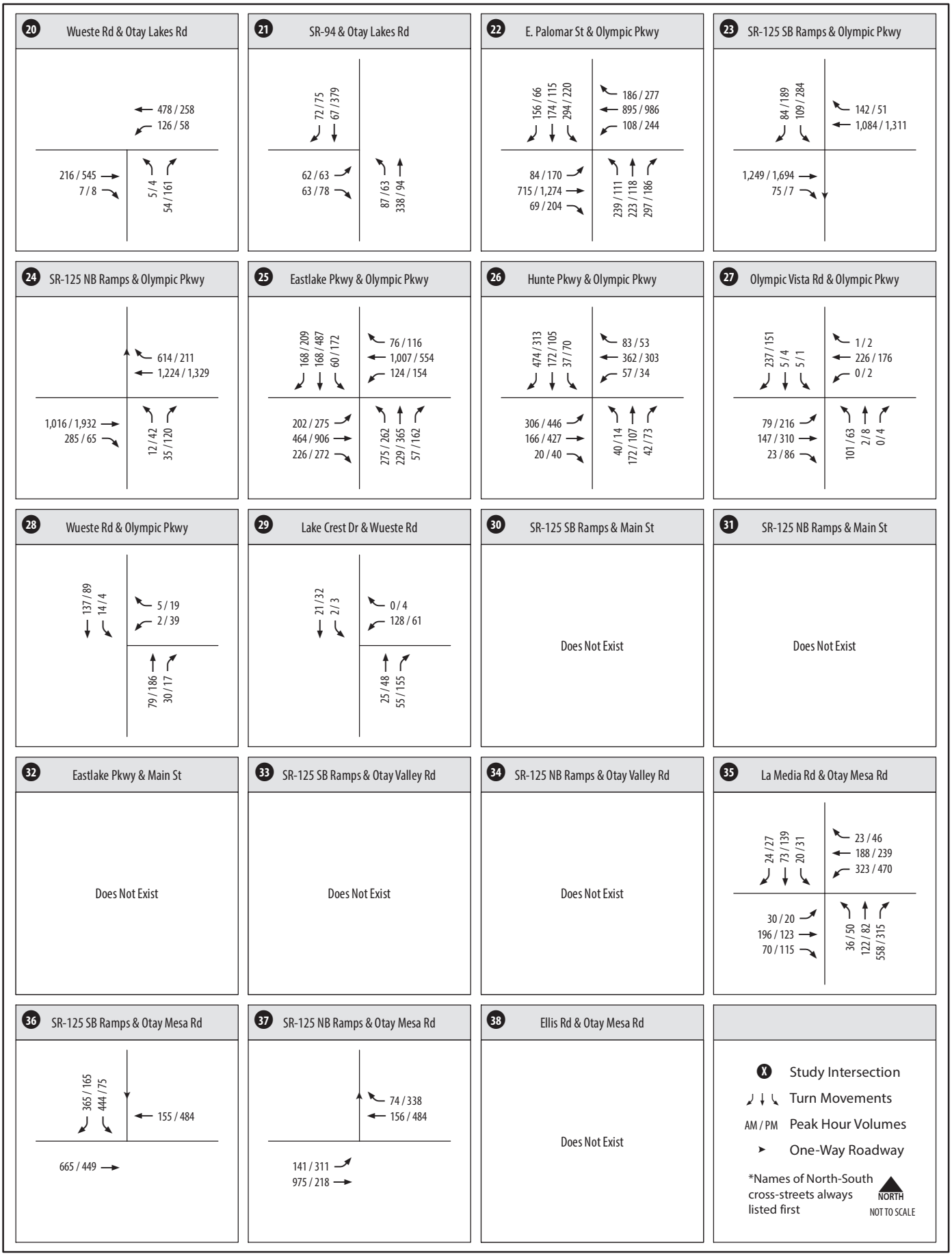


Source: Chen Ryan; June 2014

Resort Village CHEN RYAN

Figure 5-1A

Intersection Peak Hour Traffic Volumes - Existing Plus Project (Phase I) Conditions (Intersections 1-19)



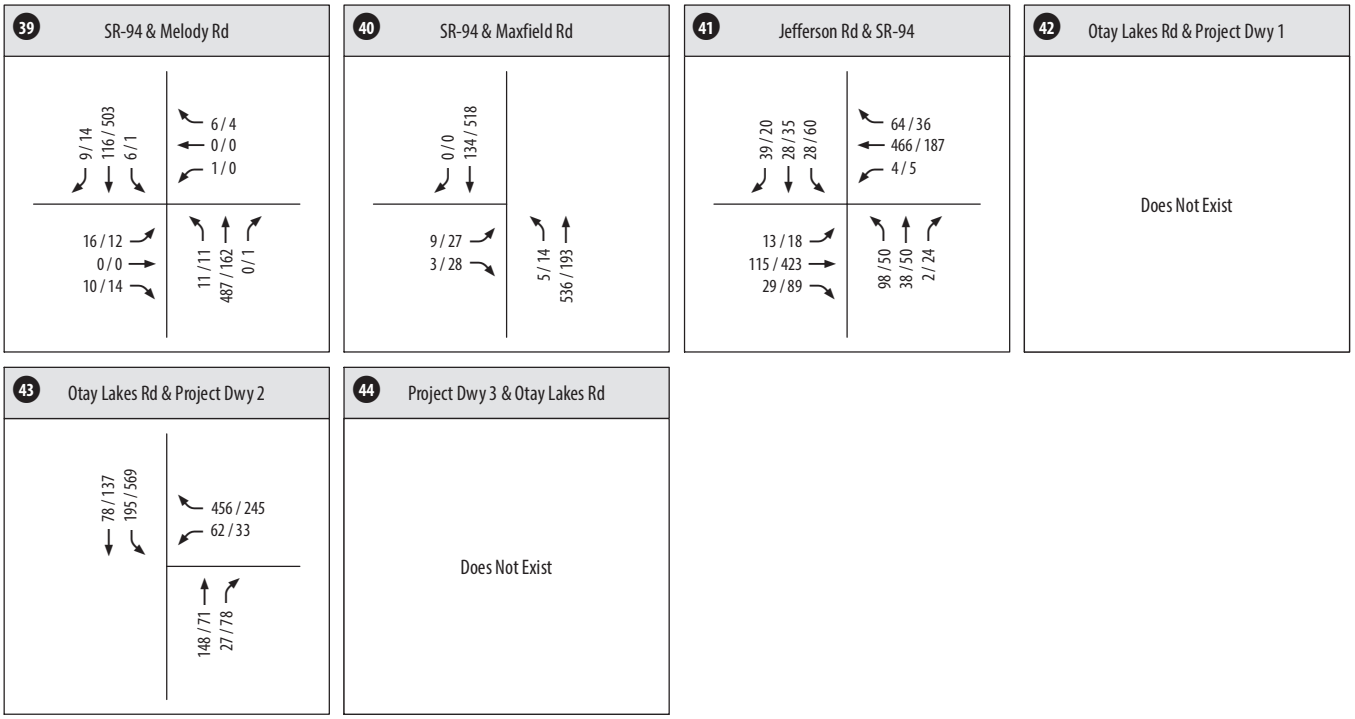
Source: Chen Ryan; June 2014

OTAY RANCH

Resort Village CHEN RYAN

Figure 5-1A

Intersection Peak Hour Traffic Volumes - Existing Plus Project (Phase I) Conditions (Intersections 20-38)



Legend

- X — Study Intersection
- Turn Movements
- AM / PM — Peak Hour Volumes
- One-Way Roadway

*Names of North-South cross-streets always listed first

NORTH
NOT TO SCALE

Source: Chen Ryan; June 2014

OTAY RANCH

Resort Village CHEN RYAN

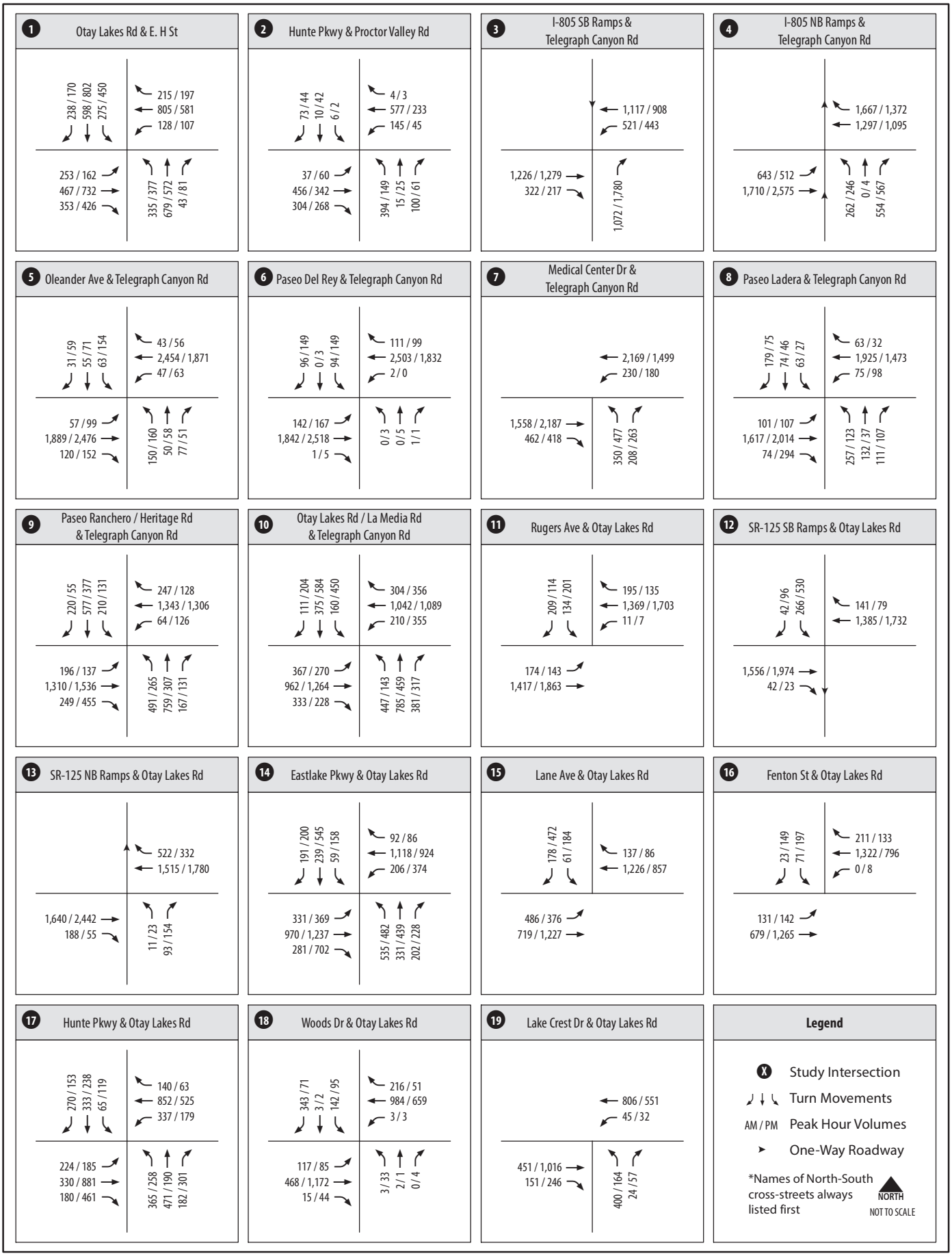
Figure 5-1A

Intersection Peak Hour Traffic Volumes - Existing Plus Project (Phase I) Conditions (Intersections 39-44)

SOURCE: Chen Ryan; June 2014

Figure 5-1B

Average Daily Traffic Volumes -
Existing Plus Project (Phase I) Conditions



Source: Chen Ryan; June 2014

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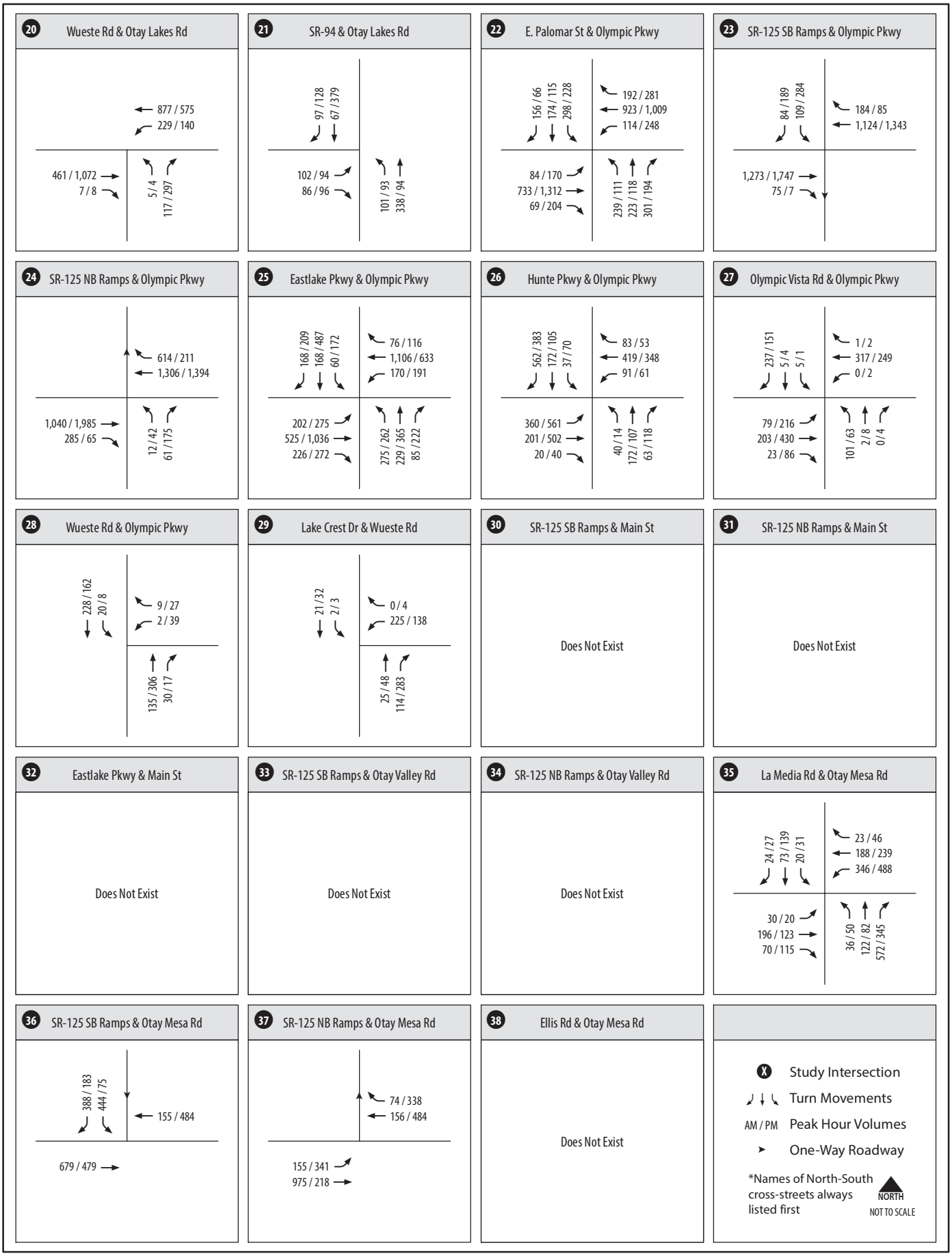
Figure 7-2A

Intersection Peak Hour Traffic Volumes - Existing Plus Project (Buildout) Conditions (Intersections 1-19)

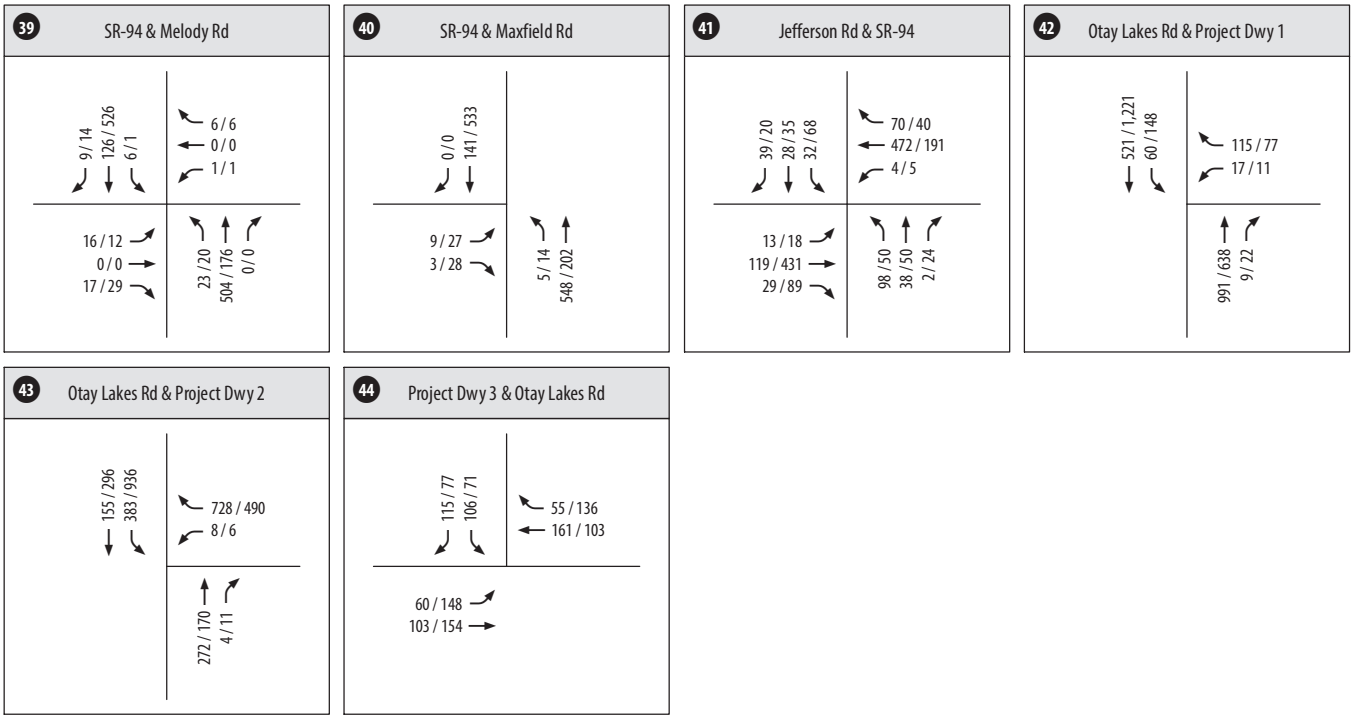


Source: Chen Ryan; June 2014

Resort Village CHEN RYAN

Figure 6-1A

Intersection Peak Hour Traffic Volumes - Existing Plus Project (Buildout) Conditions (Intersections 20-38)



Legend

- X — Study Intersection
- Turn Movements
- AM / PM — Peak Hour Volumes
- One-Way Roadway

*Names of North-South cross-streets always listed first

NORTH

NOT TO SCALE

Source: Chen Ryan; June 2014

OTAY RANCH

Resort Village CHEN RYAN

Figure 6-1A

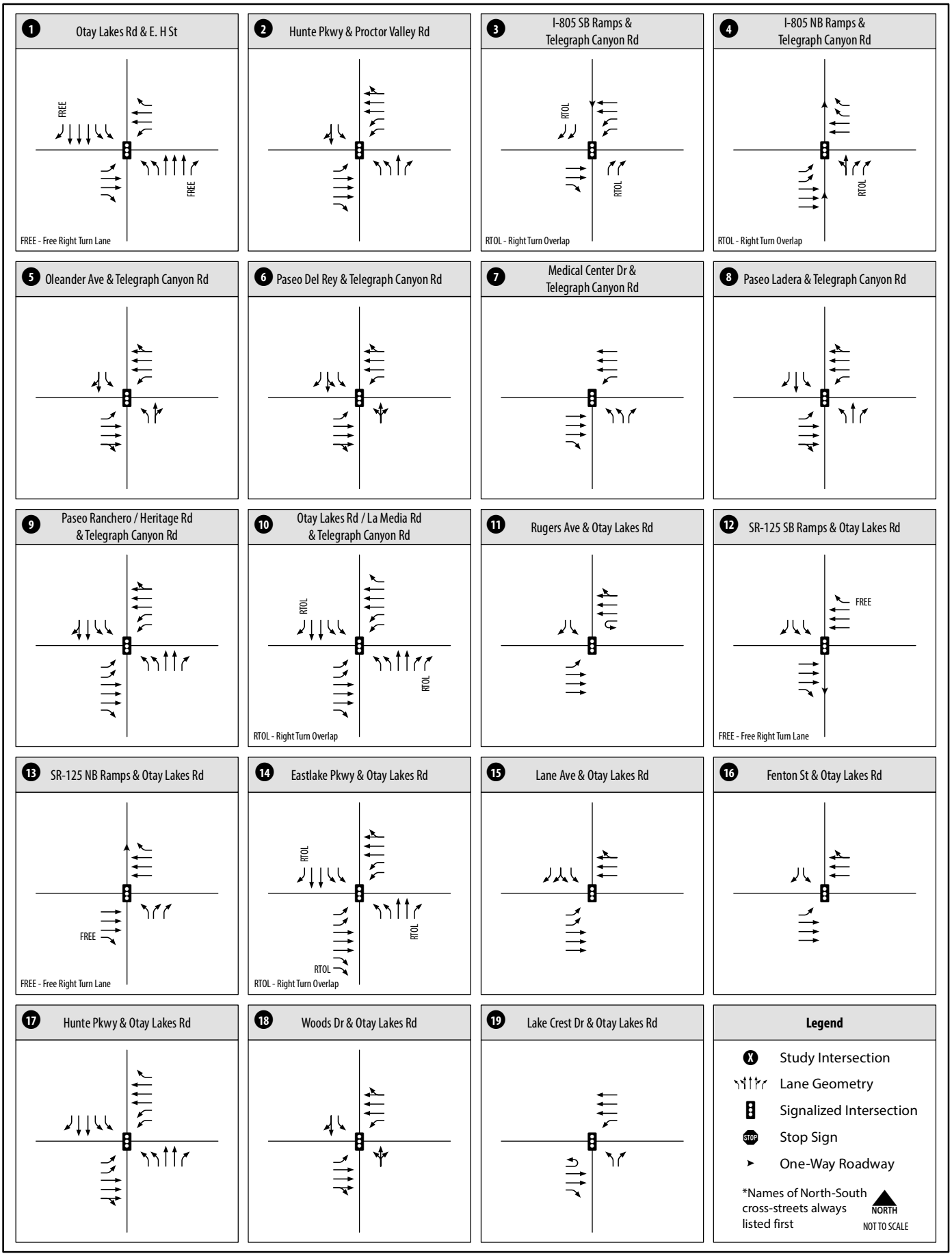
Intersection Peak Hour Traffic Volumes - Existing Plus Project (Buildout) Conditions (Intersections 39-44)

SOURCE: Chen Ryan; June 2014

OTAY RANCH Resort Village CHEN RYAN

Figure 6-1B

Average Daily Traffic Volumes -
Existing Plus Project (Buildout) Conditions

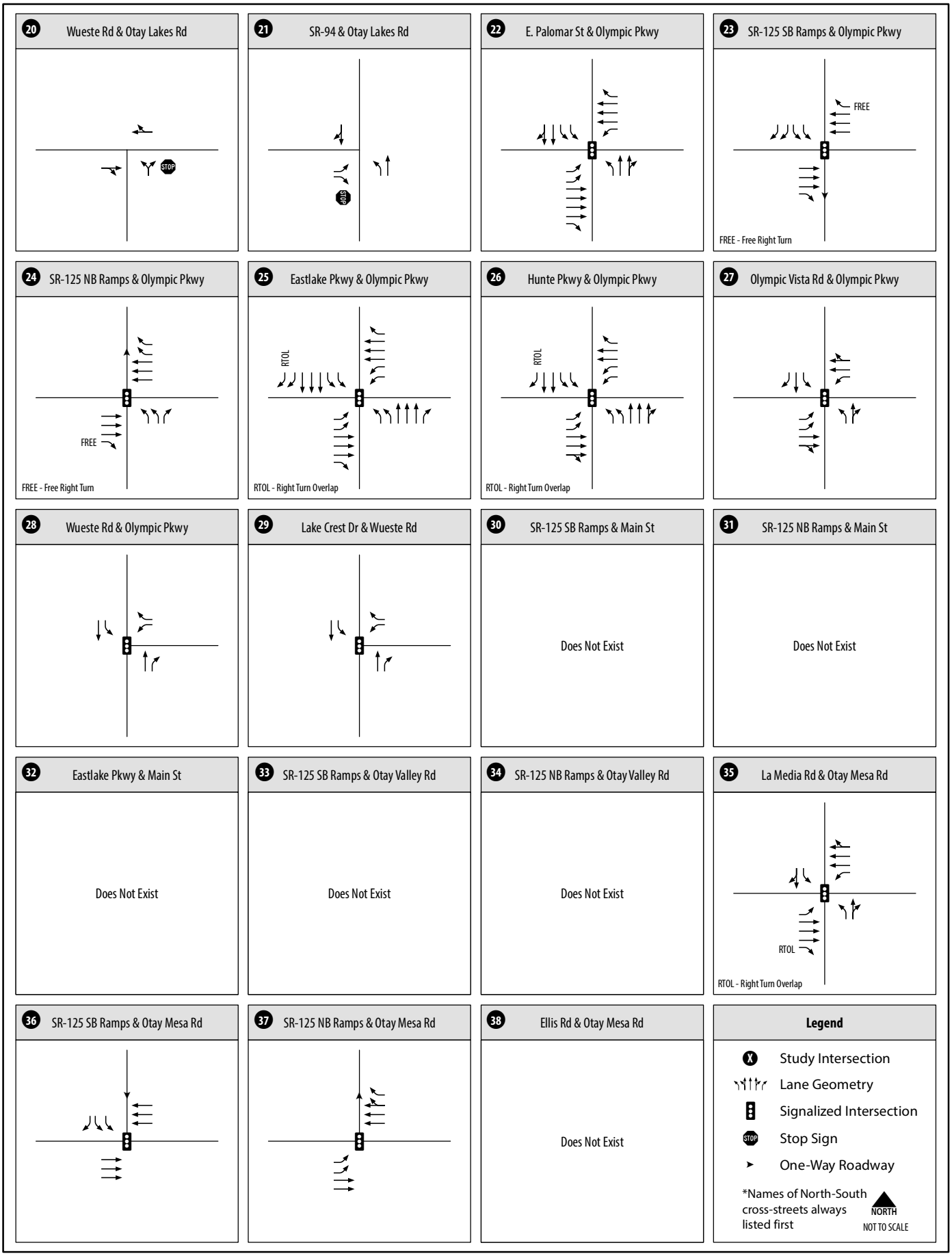


Source: Chen Ryan; June 2014

Resort Village CHEN RYAN

Figure 7-1A

Intersection Geometrics - Cumulative (Year 2025)Conditions (Intersections 1-19)

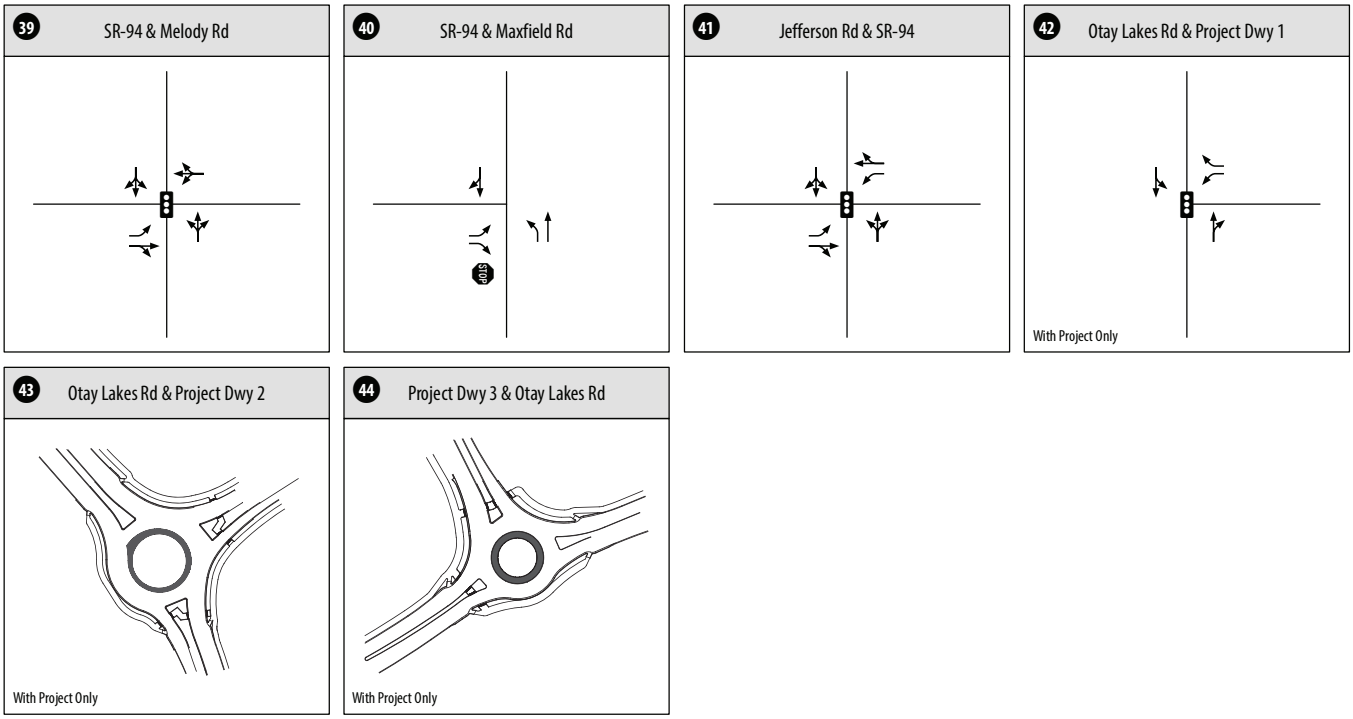


Source: Chen Ryan; June 2014

Resort Village CHEN RYAN

Figure 7-1A

Intersection Geometrics - Cumulative (Year 2025) Conditions (Intersections 20-38)



Legend

- Study Intersection
- Lane Geometry
- Signalized Intersection
- Stop Sign
- One-Way Roadway

*Names of North-South cross-streets always listed first

NORTH
NOT TO SCALE

Source: Chen Ryan; June 2014

OTAY RANCH *Resort Village* CHEN RYAN

Figure 7-1A

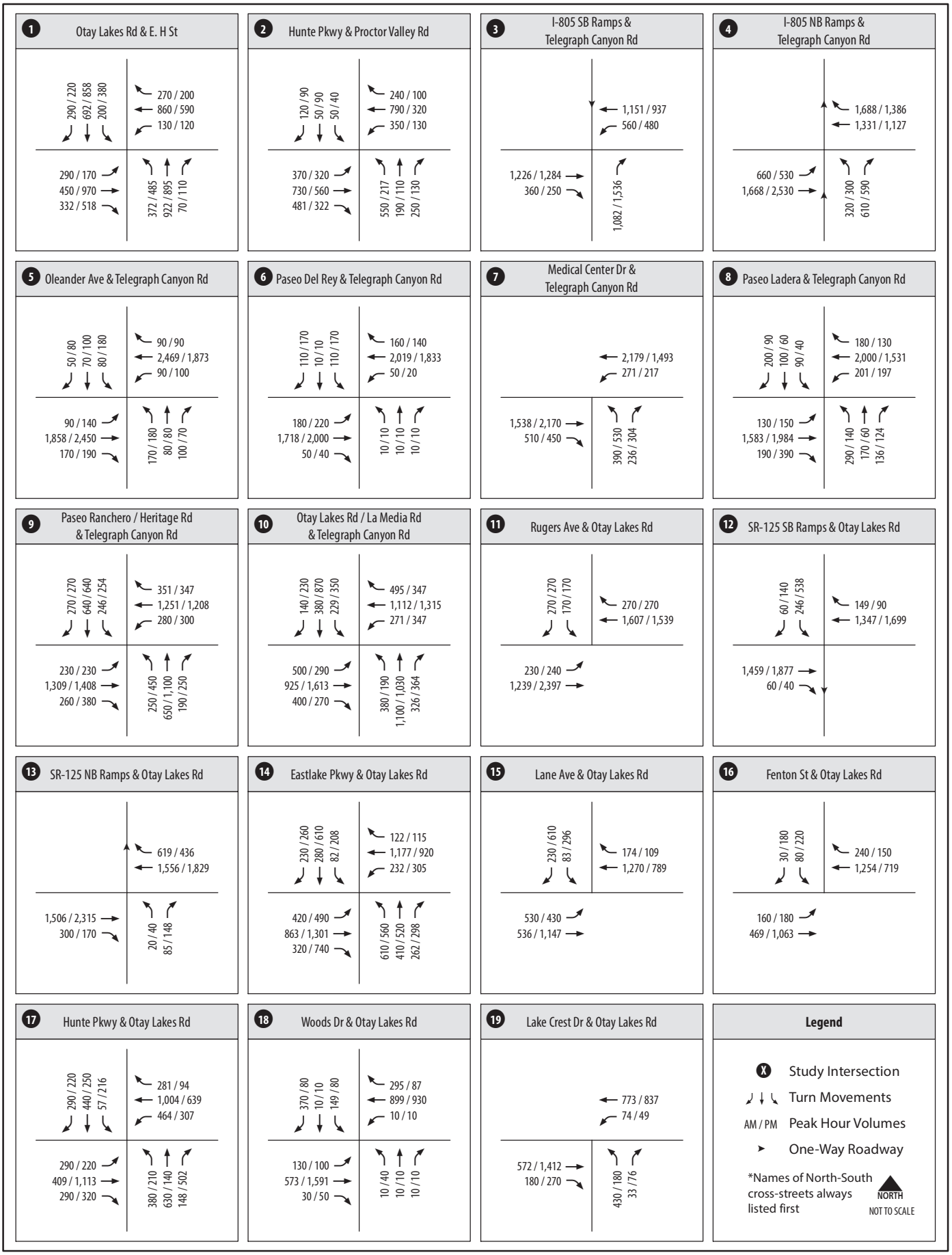
Intersection Geometrics - Cumulative (Year 2025) Conditions (Intersections 39-44)

SOURCE:Chen Ryan; June 2014

Figure 7-1B

Roadway Geometrics - Cumulative (Year 2025) Conditions

OTAY RANCH Resort Village CHEN RYAN

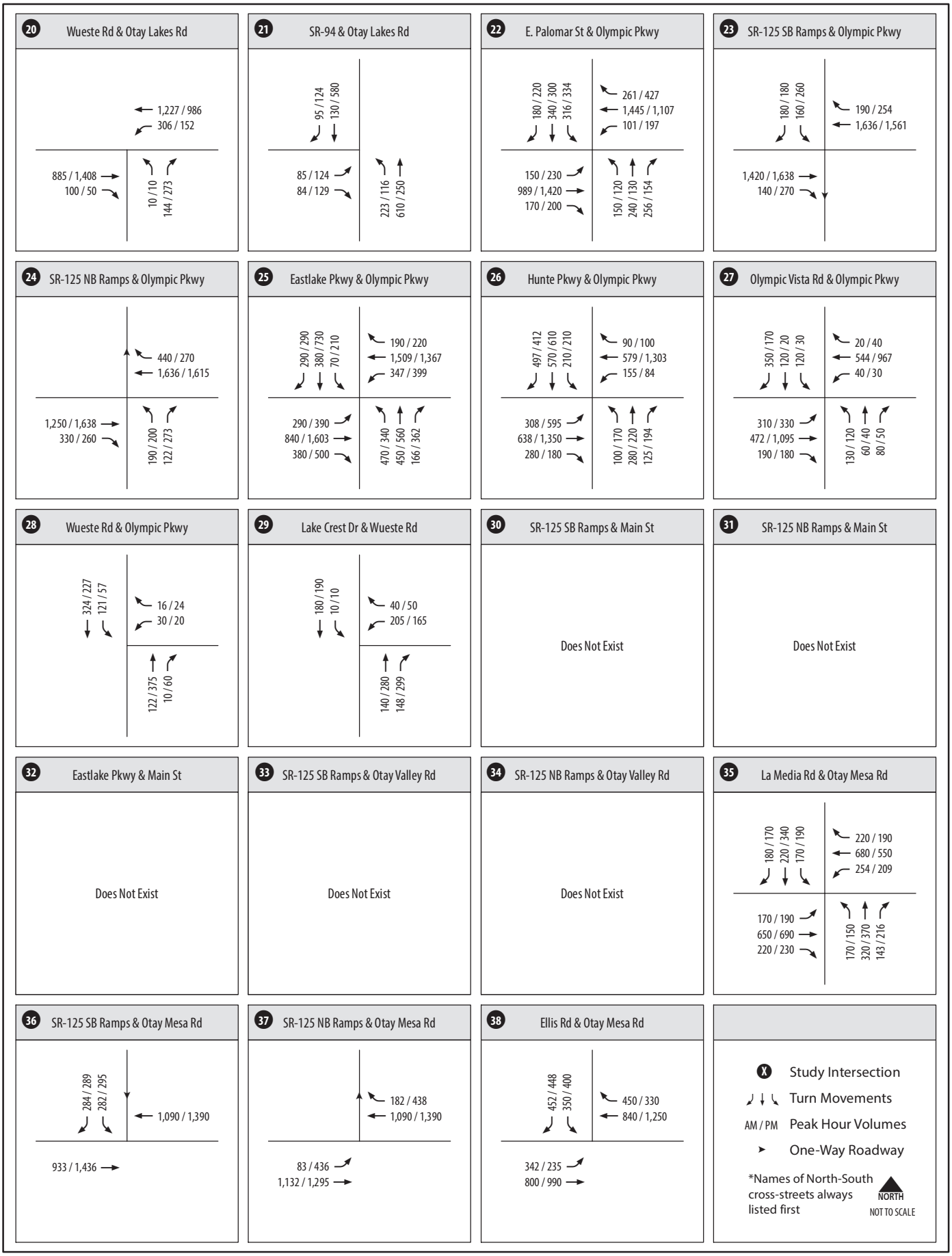


Source: Chen Ryan; June 2014

Resort Village CHEN RYAN

Figure 7-2A

Intersection Peak Hour Traffic Volumes - Cumulative (Year 2025) Conditions (Intersections 1-19)

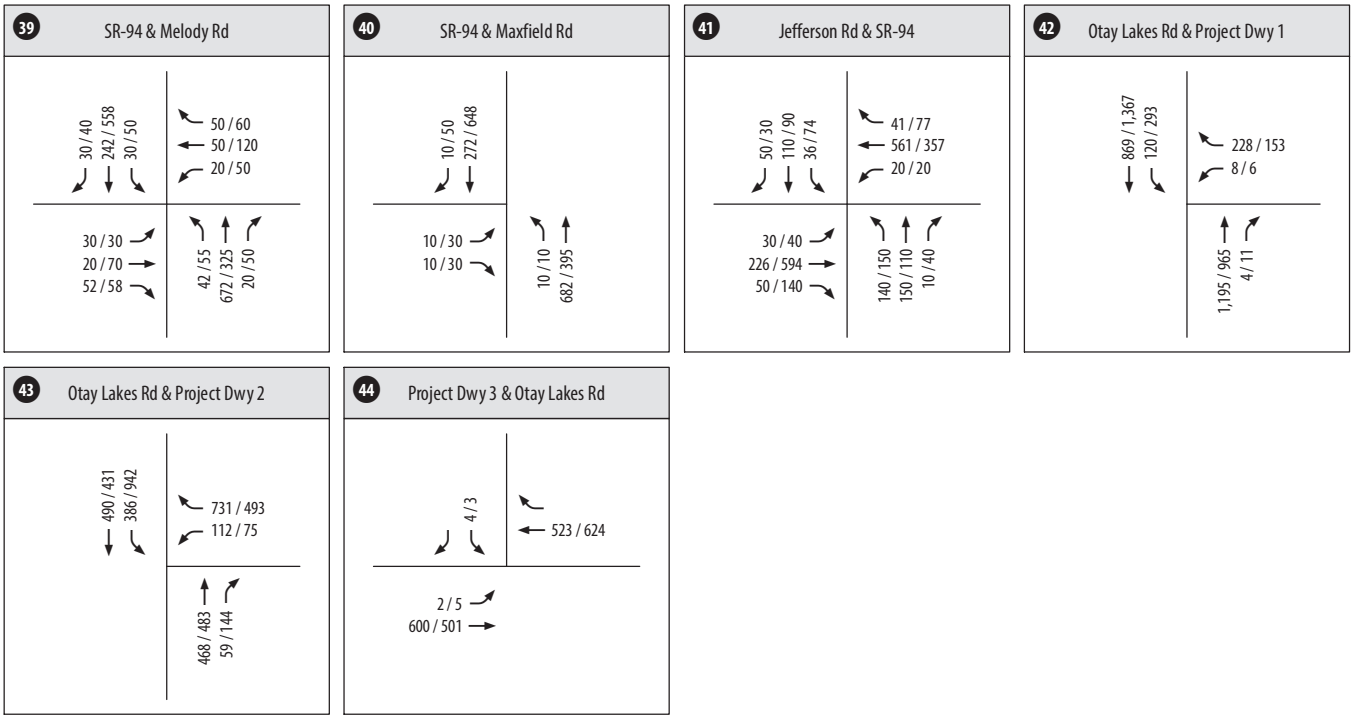


Source: Chen Ryan; June 2014

Resort Village CHEN RYAN

Figure 7-2A

Intersection Peak Hour Traffic Volumes - Cumulative (Year 2025) Conditions (Intersections 20-38)



Legend

- X — Study Intersection
- Turn Movements
- AM / PM — Peak Hour Volumes
- One-Way Roadway

*Names of North-South cross-streets always listed first

NORTH
NOT TO SCALE

Source: Chen Ryan; June 2014

OTAY RANCH

Resort Village CHEN RYAN

Figure 7-2A

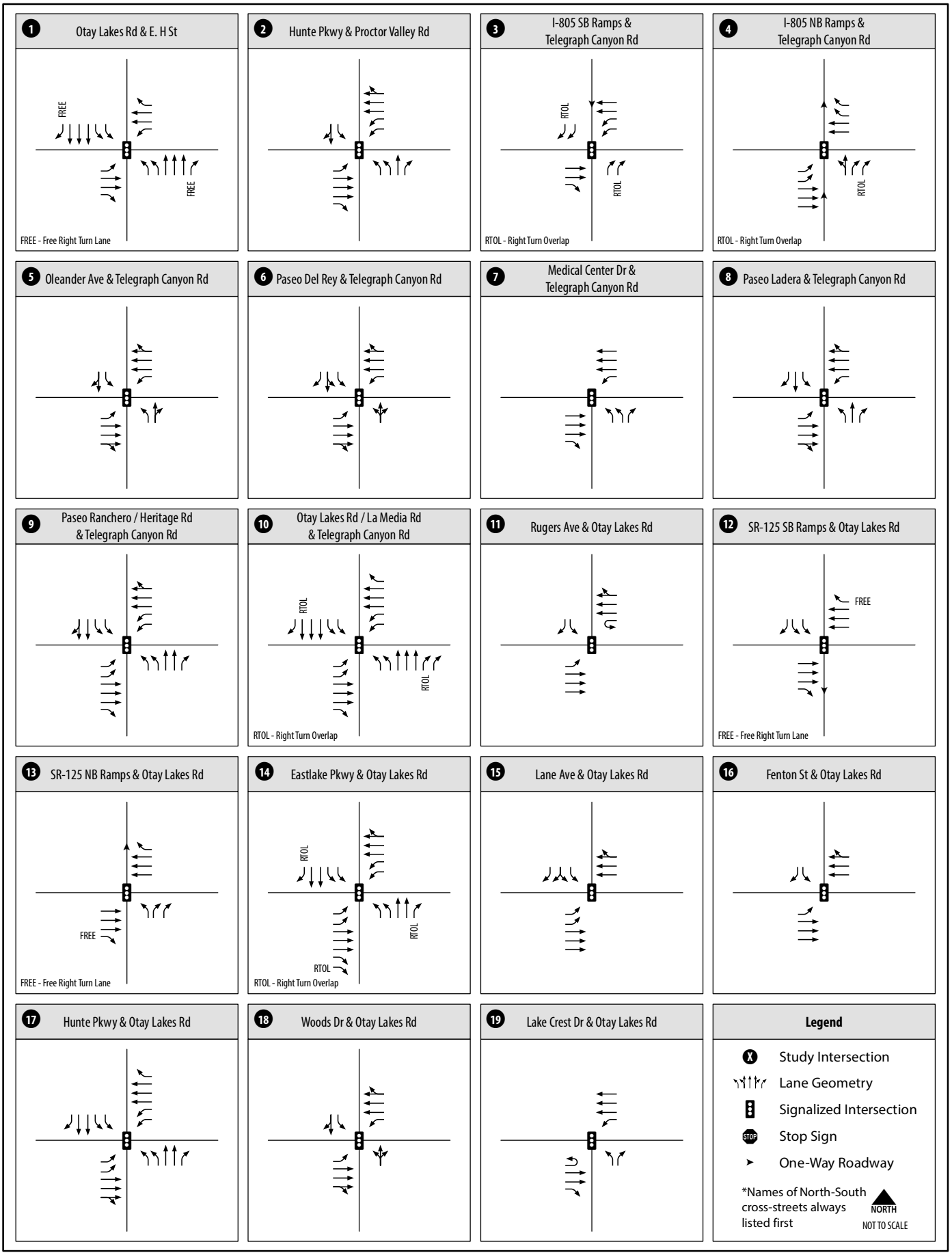
Intersection Peak Hour Traffic Volumes - Near-Term Year
2025 Base Plus Project (Buildout) Conditions (Intersections 39-44)

SOURCE: Chen Ryan; June 2014

OTAY RANCH Resort Village CHEN RYAN

Figure 7-2B

Average Daily Traffic Volumes -
Cumulative (Year 2025) Base Plus Project (Buildout) Conditions

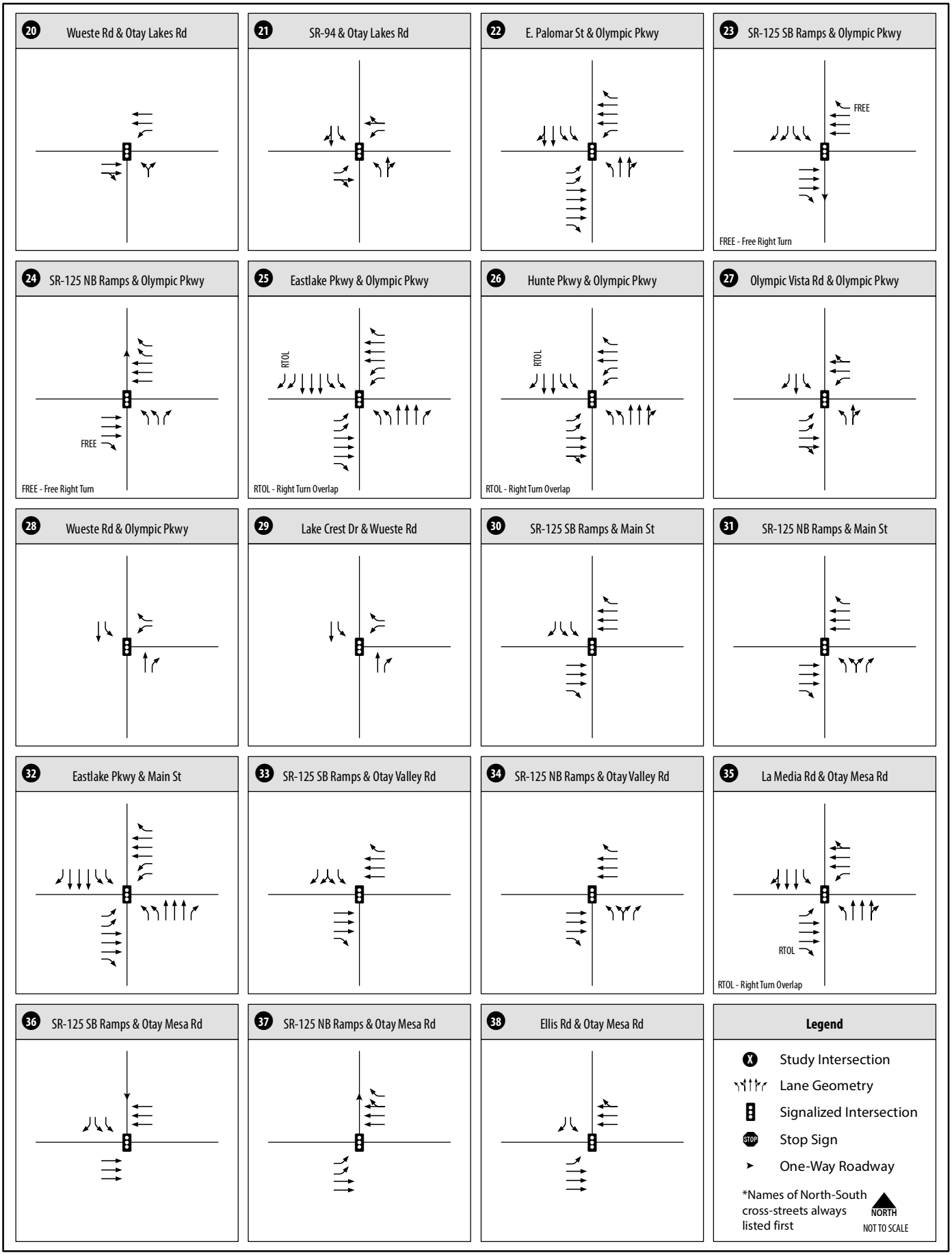


Source: Chen Ryan; June 2014

Resort Village CHEN RYAN

Figure 8-1A

Intersection Geometrics - Future Year 2030 Conditions (Intersections 1-19)



Source: Chen Ryan; June 2014

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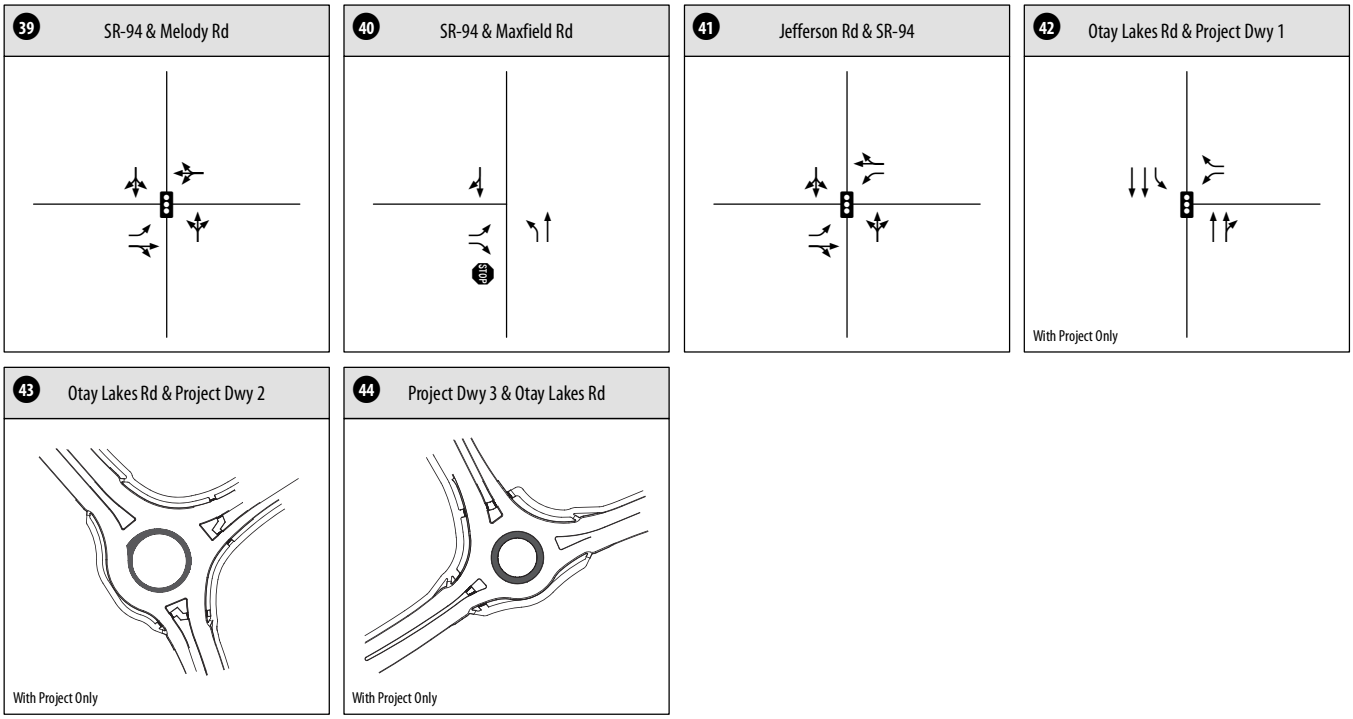
Resort Village CHEN RYAN

Figure 8-1A

Intersection Geometrics - Future Year 2030 Conditions (Intersections 20-38)



Legend

- Study Intersection
- Lane Geometry
- Signalized Intersection
- Stop Sign
- One-Way Roadway

*Names of North-South cross-streets always listed first

NORTH

NOT TO SCALE

Source: Chen Ryan; June 2014

OTAY RANCH

Resort Village CHEN RYAN

Figure 8-1A

Intersection Geometrics - Future Year 2030 Conditions (Intersections 39-44)

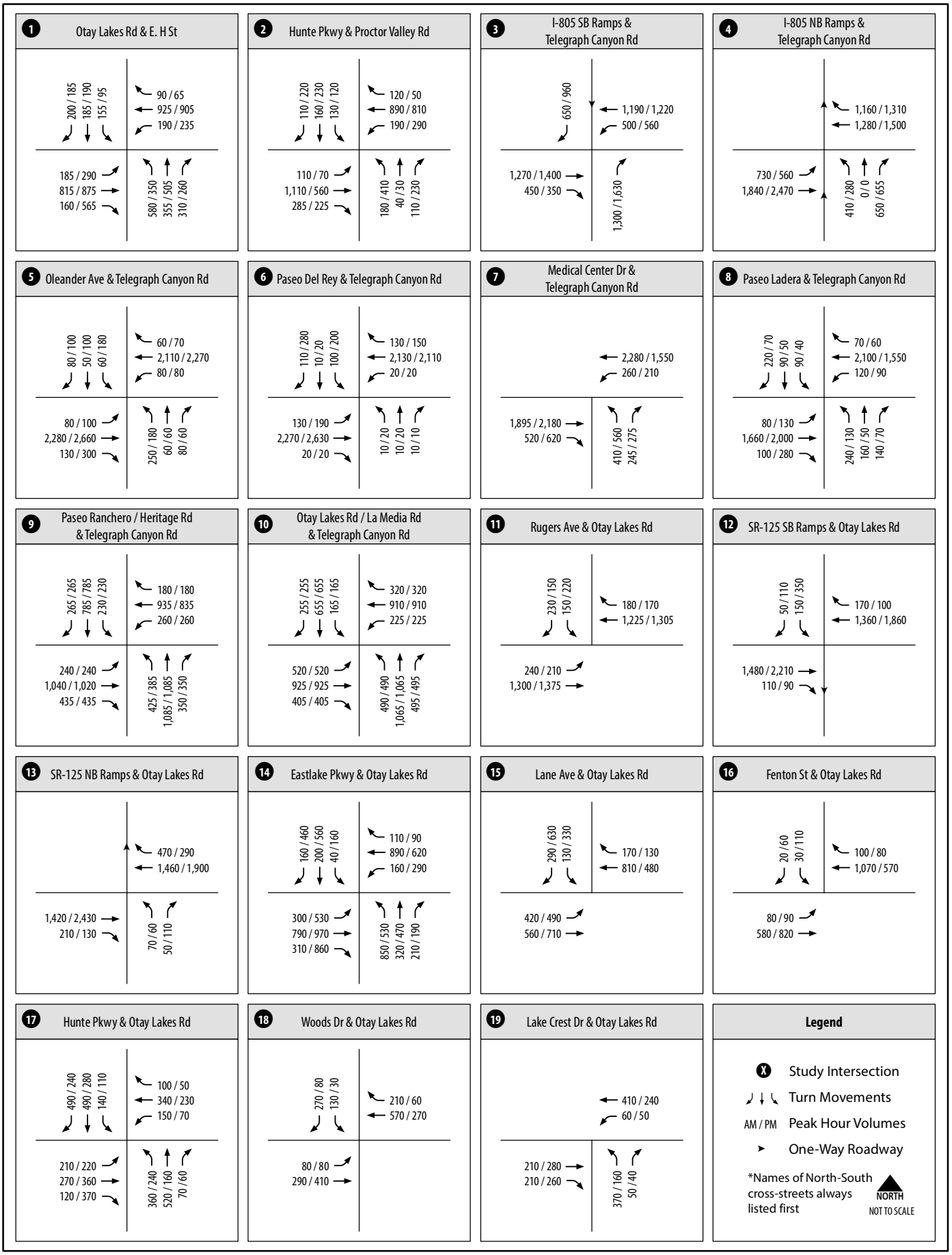
SOURCE: Chen Ryan; June 2014

OTAY RANCH

Resort Village CHEN RYAN

Figure 8-1B

Roadway Geometrics - Future Year 2030 Conditions



Source: Chen Ryan; June 2014

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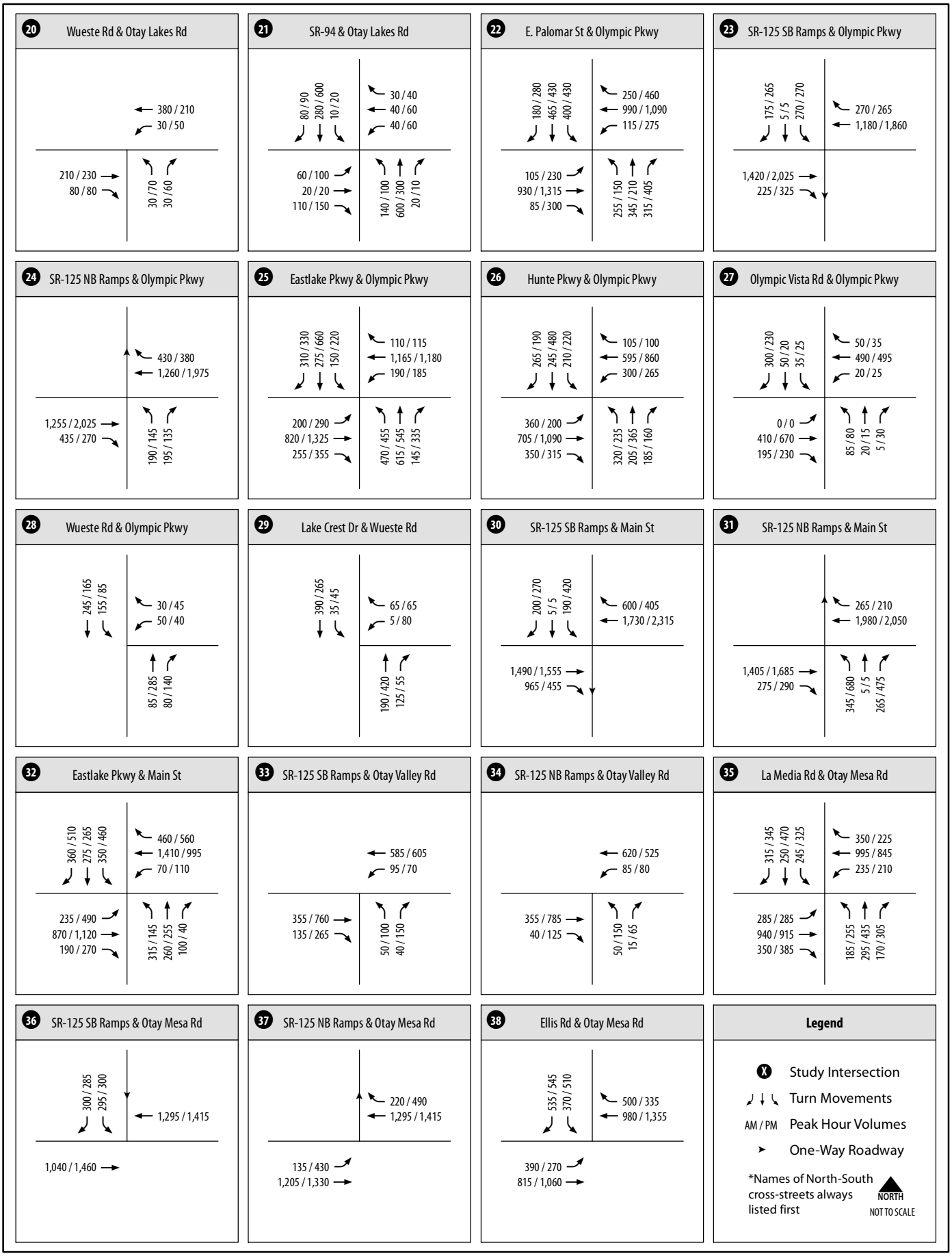
Resort Village CHEN RYAN

Figure 8-2A

Intersection Peak Hour Traffic Volumes - Future Year 2030 Base Conditions (Intersections 1-19)

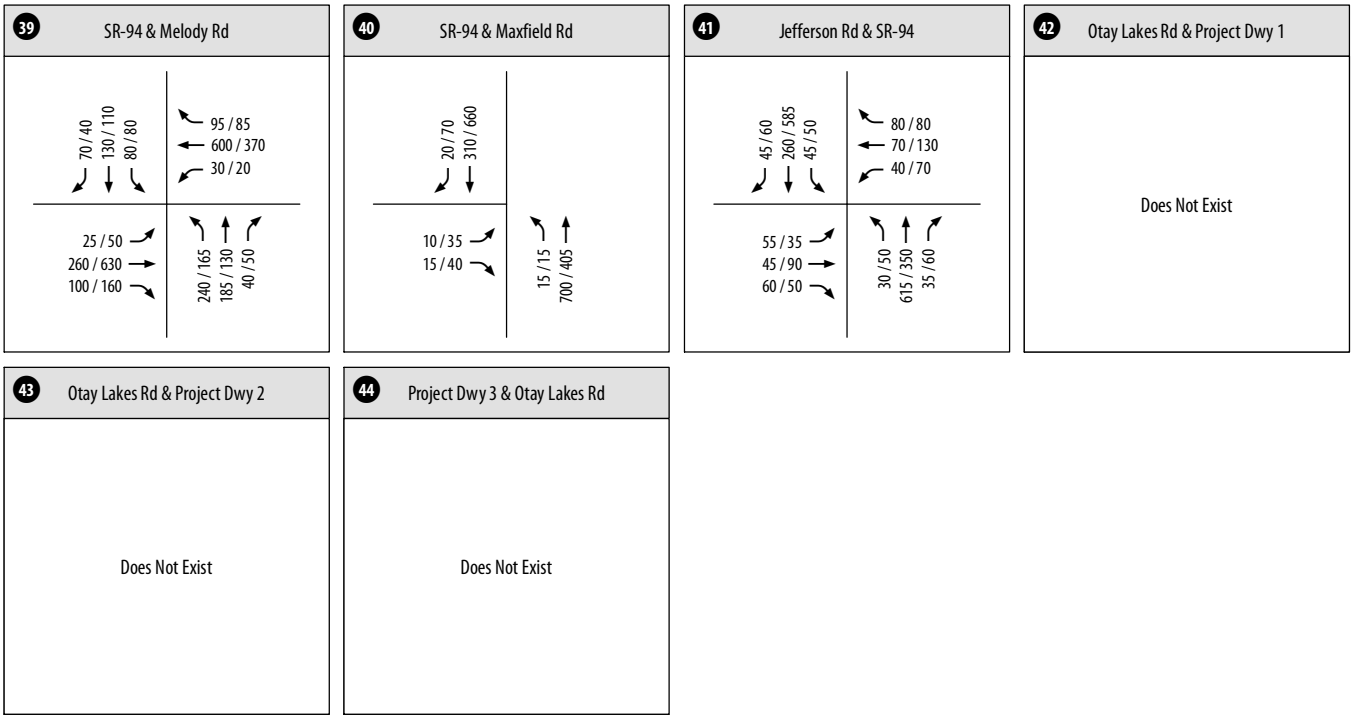


Source: Chen Ryan; June 2014

OTAY RANCH *Resort Village* CHEN RYAN

Figure 8-2A

Intersection Peak Hour Traffic Volumes - Future Year 2030 Base Conditions (Intersections 20-38)



Legend

- X Study Intersection
- Turn Movements
- AM / PM Peak Hour Volumes
- One-Way Roadway

*Names of North-South cross-streets always listed first

NORTH
NOT TO SCALE

Source: Chen Ryan; June 2014

OTAY RANCH

Resort Village CHEN RYAN

Figure 8-2A

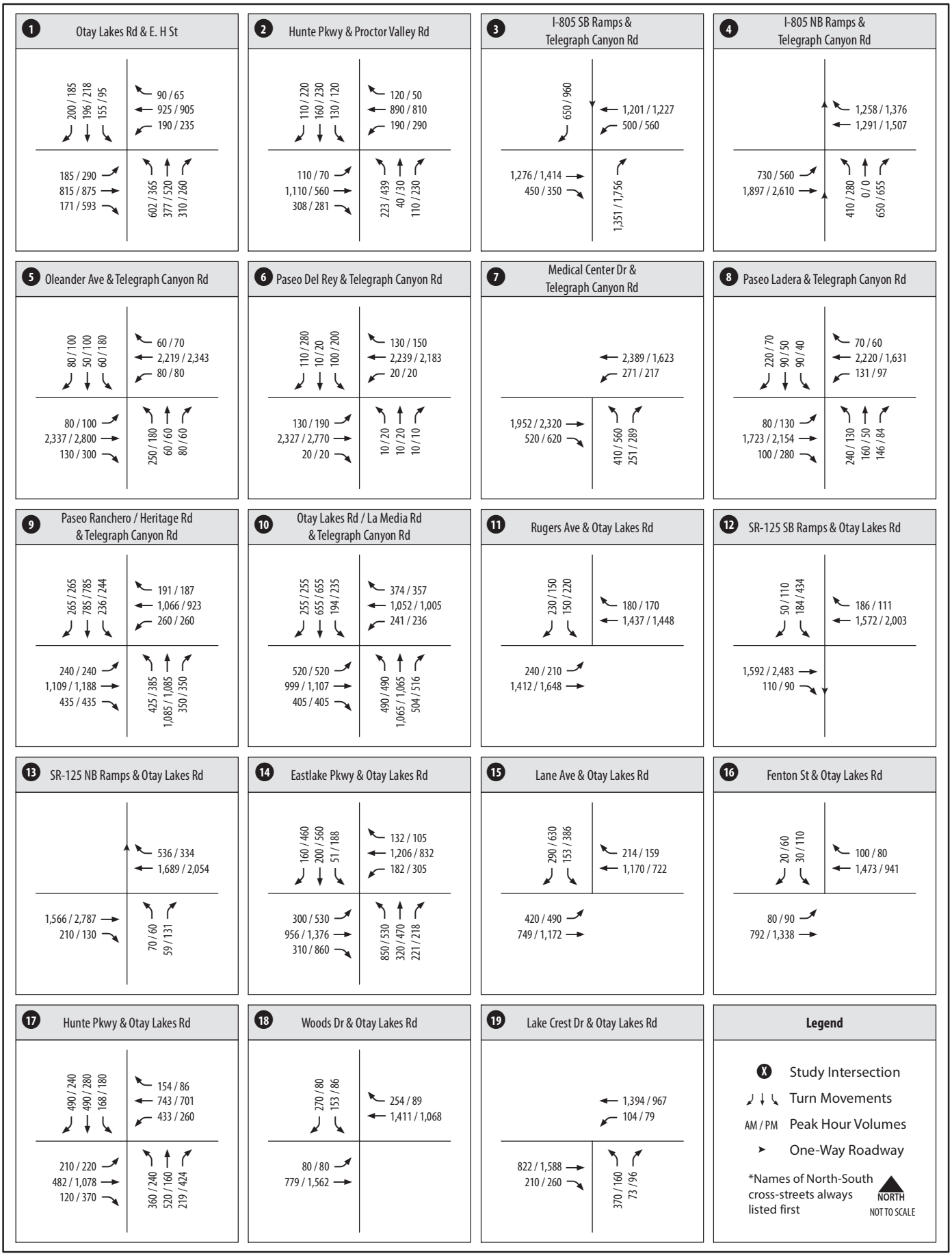
Intersection Peak Hour Traffic Volumes - Future Year 2030 Base Conditions (Intersections 39-44)

SOURCE: Chen Ryan; June 2014

OTAY RANCH Resort Village Chen Ryan

Figure 8-2B

Average Daily Traffic Volumes - Year 2030 Base Conditions

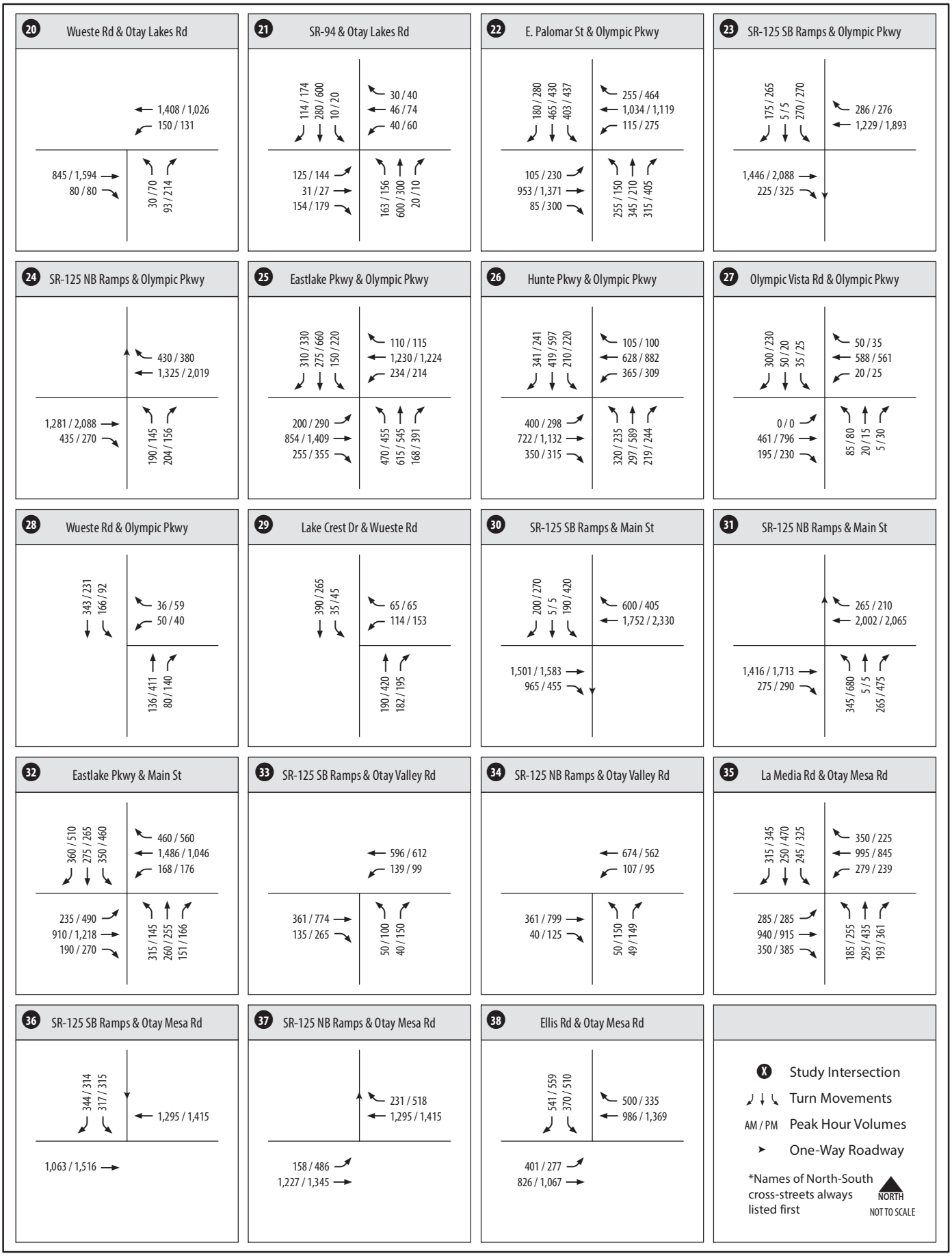


Source: Chen Ryan; August 2013

Resort Village CHEN RYAN

Figure 8-3A

Intersection Peak Hour Traffic Volumes - Future Year 2030 Base Plus Project (Buildout) Conditions (Intersections 1-19)

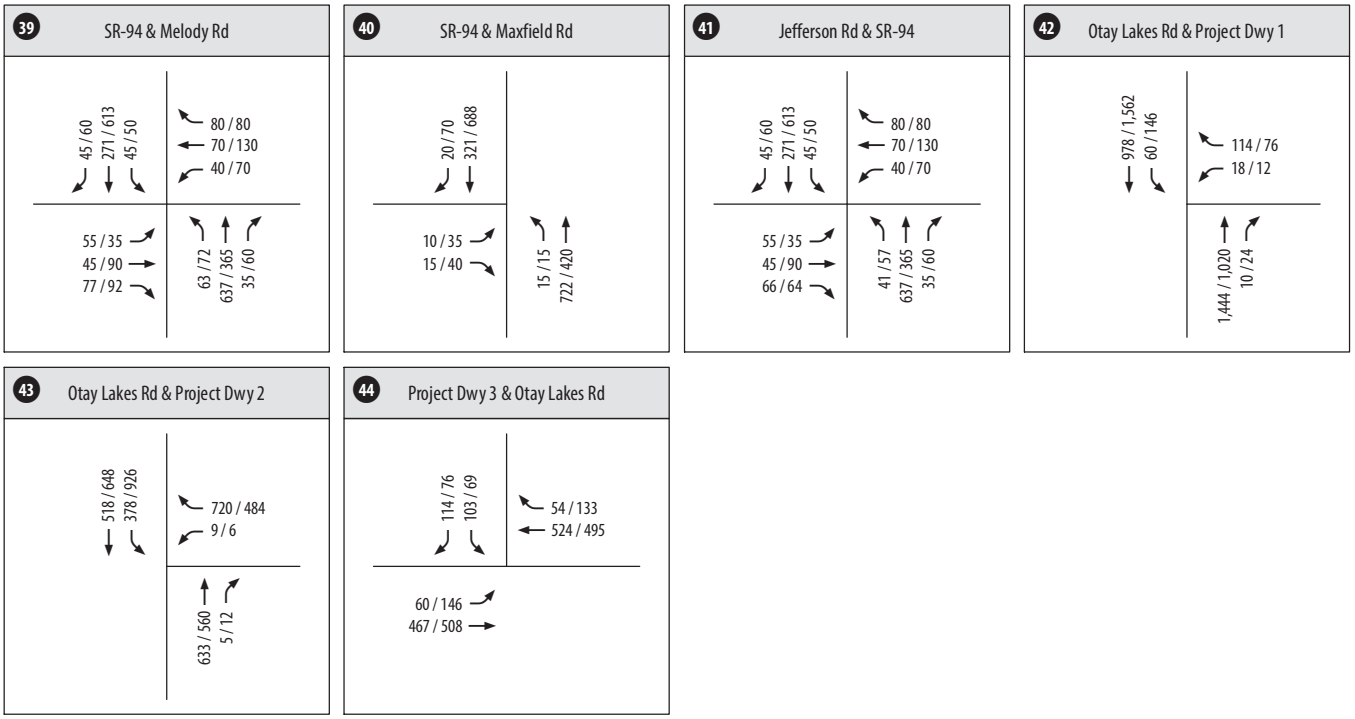


Source: Chen Ryan; June 2014

Resort Village CHEN RYAN

Figure 8-3A

Intersection Peak Hour Traffic Volumes - Future Year 2030 Base Plus Project (Buildout) Conditions (Intersections 20-38)



Legend

- X — Study Intersection
- Turn Movements
- AM / PM — Peak Hour Volumes
- One-Way Roadway

*Names of North-South cross-streets always listed first

NORTH
NOT TO SCALE

Source: Chen Ryan; June 2014

OTAY RANCH

Resort Village CHEN RYAN

Figure 8-3A

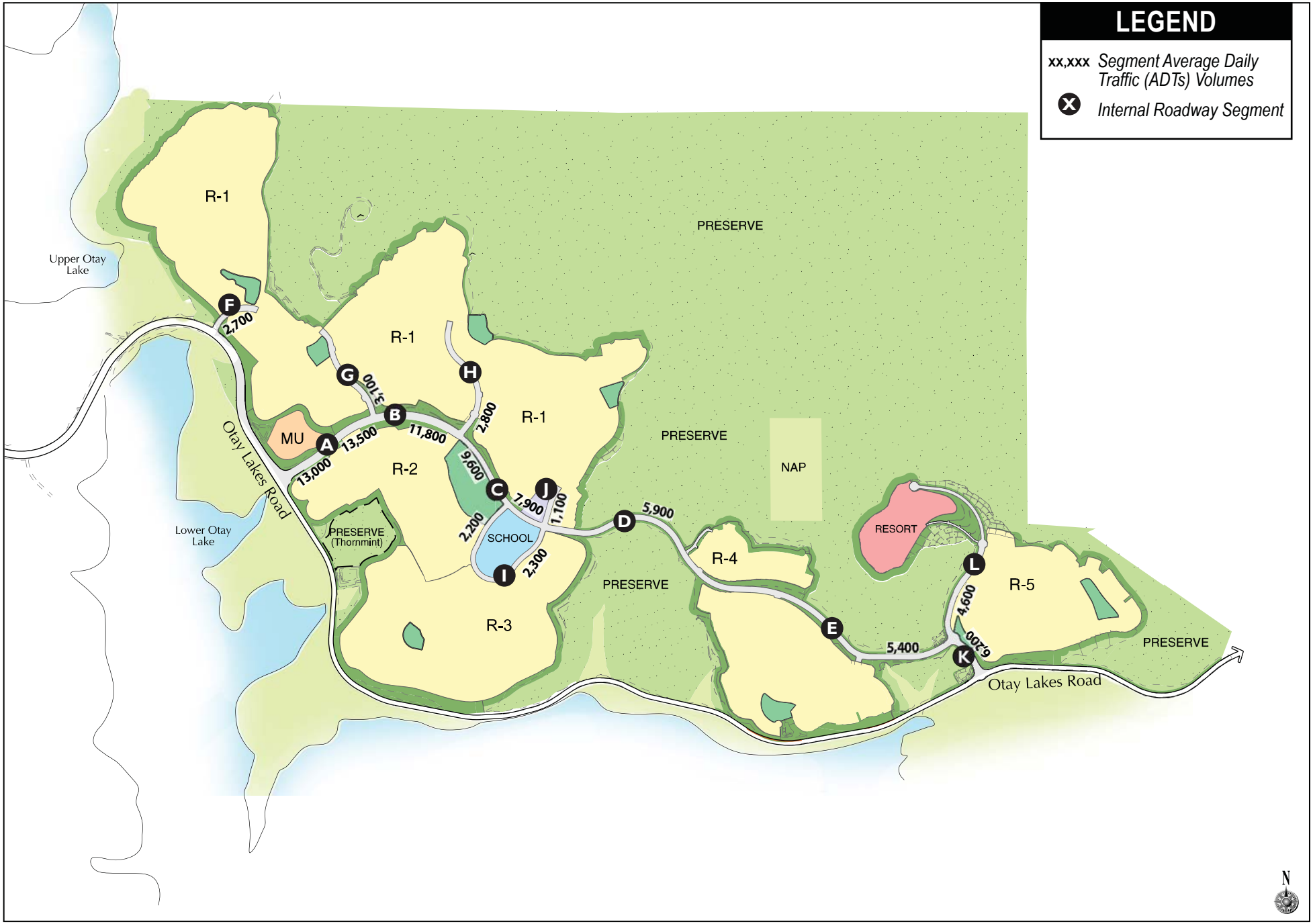
Intersection Peak Hour Traffic Volumes - Future Year 2030 Base Plus Project (Buildout) Conditions (Intersections 20-38)

SOURCE: Chen Ryan; June 2014

Figure 8-3B

Average Daily Traffic Volumes -
Year 2030 Base Plus Project Conditions

OTAY RANCH *Resort Village* CHEN RYAN



SOURCE: Chen Ryan; June 2014

Figure 12-1

Resort Village Internal Roadway ADTs