APPENDIX C

Traffic Technical Report

LINSCOTT LAW & GREENSPAN engineers

TRAFFIC IMPACT ANALYSIS

CHULA VISTA GENERAL PLAN & GENERAL DEVELOPMENT PLAN AMENDMENT FOR OTAY LAND COMPANY

Chula Vista, California

~~May 11~~December 7, 2012

LLG Ref. 3-09-1885

Prepared by:

Cara Leone
Transportation Planner II

Under the Supervision of:

John Boarman, P.E.
Principal

Linscott, Law & Greenspan, Engineers
4542 Ruffner Street
Suite 100
San Diego, CA 92111
858.300.8800 T
858.300.8810 F
www.llgengineers.com

TABLE OF CONTENTS

TABLE OF CONTENTS *(CONTINUED)*

SECTION PAGE

TABLE OF CONTENTS *(CONTINUED)*

APPENDICES

LIST OF FIGURES

LIST OF TABLES

TRAFFIC IMPACT ANALYSIS

CHULA VISTA GENERAL PLAN & GENERAL DEVELOPMENT PLAN AMENDMENT FOR OTAY LAND COMPANY

Chula Vista, California

~~May 11~~December 7, 2012

1.0 INTRODUCTION

Linscott, Law & Greenspan Engineers (LLG) has been retained to prepare a traffic study for the South Otay Ranch Villages General Plan/General Development Plan Amendment Project. The purpose of this study is to assess the potential impacts to the local circulation system as a result of the plan amendment.

The Project consists of a General Plan Amendment (GPA) and an Otay Ranch General Development Plan Amendment (GDPA) associated with approximately 728 acres within the Otay Ranch GDP in the City of Chula Vista. A more detailed Project description is presented in Section 2.0 of this report.

The traffic analysis presented in this report includes the following:

- Project Description
- Existing Conditions Discussion
- Study Area, Analysis Approach & Methodology
- Significance Criteria
- Analysis of Existing Conditions
- Traffic Modeling Process Description
- Analysis of Year 2030 Conditions
- Circulation Element Changes Discussion
- Main Street/La Media Road Town Center Arterials
- SR-125 Mid-Arterial Crossing
- Congestion Management Compliance
- Existing + Project Analysis
- Significance of Impacts & Mitigation Measures

2.0 PROJECT DESCRIPTION

2.1 Project Location and Background

The Project site is located within the Otay Ranch General Development Plan (GDP) area in the City of Chula Vista, County of San Diego. The Project Area is comprised of multiple existing villages and planning areas as follows:

- Portions of Villages 4 and 7;
- Village 8;
- Village 9;
- Planning Area 10, which includes the University site and a proposed 85-acre Regional Technology Park (RTP);
- A portion of the southern edge of the Eastern Urban Center (the portion to be added to the proposed Village 9)

The City's General Plan Update (GPU) was approved along with the associated environmental document in December 2005. The GPU presented a long-term strategy to address planning issues for the growth and development of the City outlining the community's vision for the future through land use designations, goals, and policies. The 2005 GPU/GDP Environmental Impact Report (EIR) addressed the entire City, including the Project Area; however, the City Council did not approve the proposed land use designations within an area known as the "deferral area." The deferral area corresponds generally to the Project Area. As a result, land use designations within the deferral area are subject to pre- 2005 GPU designations. Specifically, the land use designations applicable to this area are those approved in 2001 (October 2001 GDP).

The GPU EIR (EIR 05-01) certified on December 12, 2005 (GPU EIR 2005), analyzed the impacts of the General Plan Preferred Alternative that included the land uses, densities, trip generation and circulation plan that were proposed for the deferral area (that included all of Villages 8 and 9 and Planning Area 10). Although such land uses for the deferral areas were not adopted, the circulation plan that was analyzed in the GPU EIR 2005 was adopted as part of the GPU 2005.

Subsequent to approval of the GPU, the City entered into a Land Offer Agreement (LOA) with the Otay Land Company (OLC) on April 9, 2008. The LOA is an agreement between the OLC (owners of property within portions of the deferral area) and the City, which allowed for the future conveyance of land within the Project Area to the City. A second LOA was entered into between the City and James P. Baldwin (JPB), another property owner within the deferral area, but whose property is not included as a part of this proposed Project.

This traffic study addresses land uses and densities that are part of the proposed Project and incorporates amendments to Circulation Plan – East. The majority of the Project Area is currently vacant. There is an existing water reservoir that is not part of the proposed Project in the center of the Project Area. Water pipelines pass through the Project Area on the east side of the reservoir.

Figure 2–1 shows the general Project vicinity, and ***Figure 2–2*** is a more detailed map showing the Project Area, associated land use change area, and the City's "deferral area".

2.2 Project Description

The "Project" consists of a General Plan Amendment (GPA) and an Otay Ranch General Development Plan Amendment (GDPA) associated with approximately 1,200 acres within the Otay Valley Parcels of the Otay Ranch Planned Community. The Project would redefine village boundaries to create Village 8 West and Village 9, add an 85-acre RTP within the Planning Area 10/University Site, and change land uses within a 728.2-acre land use change area. Policy and circulation changes would affect this entire area.

The GPA proposes adoption of new General Plan text, policies and supporting exhibits including revised General Plan Land Use and revised Circulation Plan – East diagrams. The GDPA proposes amendments to the Otay Ranch GDP consisting of revisions to text, maps and tables that would assure that the GDP is consistent with the GPA.

The proposed Project analyzed in this report are the land uses proposed by OLC that would result in an increase of approximately 880 single- and multi-family dwelling units and 1.8 million square-feet of commercial use beyond the land use designation applicable to the Project Area (2001 adopted General Plan).

2.2.1 *General Plan Amendment (GPA)*

Proposed Land Use

The Project seeks to modify Land Use provisions of the General Plan within the Project Area as follows:

1. Eliminate the area of Residential Low (RL) land use and its unit count.
2. Reduce the area of Residential Low/Medium (RLM) land use and its unit count.
3. Add an area of Residential Medium (RM) land use and its unit count.
4. Add an area of Residential Medium/High (RMH) land use and its unit count.
5. Increase the area of Mixed Use Residential land use and its unit count.
6. Add an area of Town Center (TC) land use and its unit count.
7. Allocate a portion of the Eastern Urban Center (EUC) to Village 9 and increase its unit count.
8. Increase the area of Park (PRK) land use.
9. Reduce the area of Public/Quasi Public (PQ) land use.
10. Refine the area of Open Space (OS) land use.
11. Locate a Regional Technology Park (RTP) within the Planning Area 10/University site and accordingly adjust University land use acreages.

Table 2–1 shows a detailed comparison of the Adopted and Proposed land use quantities.

Figure 2–3 shows the Proposed General Plan Land Uses within the Project's land use change area.

Proposed Street Network

The Project seeks to amend the existing General Plan Transportation Element (Circulation Plan-East) as follows:

1. Eliminate southerly extension of La Media Road crossing the Otay River Valley.
2. Reclassify a portion of La Media Road from the southern portion of Village 8 extending south to the Active Recreation area from a six lane arterial to "Other Roads".
3. Change name of Rock Mountain Road to Main Street from the point of existing Heritage Road easterly to Eastlake Parkway.
4. Reclassify Main Street from a Town Center Arterial (Couplet) easterly of SR-125 to a Six-Lane Gateway.
5. Reclassify the Main Street/La Media Road Couplet from a Six-Lane Town Center Arterial (Couplet) to a Four-Lane Town Center Arterial (Couplet) within Village 8 West.
6. Reclassify and realign the segment of La Media Road from the Town Center Arterials at the Main Street/La Media Road Couplet south easterly to SR-125 as a Four-Lane Major.
7. Provide that LOS D is acceptable for Town Center Arterials. A more detailed discussion of Town Center Arterial level of service is included in Section 10.0.
8. Eliminate requirement for park and ride facilities at the Village 9/University Bus Rapid Transit (BRT) stop.
9. Clarify that the mid-arterial SR-125 crossing between Villages 8 East and 9 is pedestrian only.

2.2.2 *Otay Ranch General Development Plan Amendment (GDPA)*

The Project seeks to amend the existing Otay Ranch GDP as follows:

1. The current GDPA includes revised text, graphics, and an update of the GDP maps and statistics to reflect the following revisions and assure conformance with the GPU.
2. Revise the statistical description and policy standards for the proposed villages and the EUC;
3. Locate an 85-acre RTP within Planning Area 10/University Site, and accordingly adjust University acreage; and
4. Add detail regarding the requirement for the University Strategic Framework Policies; and
5. Reflect land uses previously approved in 2001 within the Village 8 East area.

Table 2–1 shows a detailed comparison of the Adopted and Proposed land use quantities.

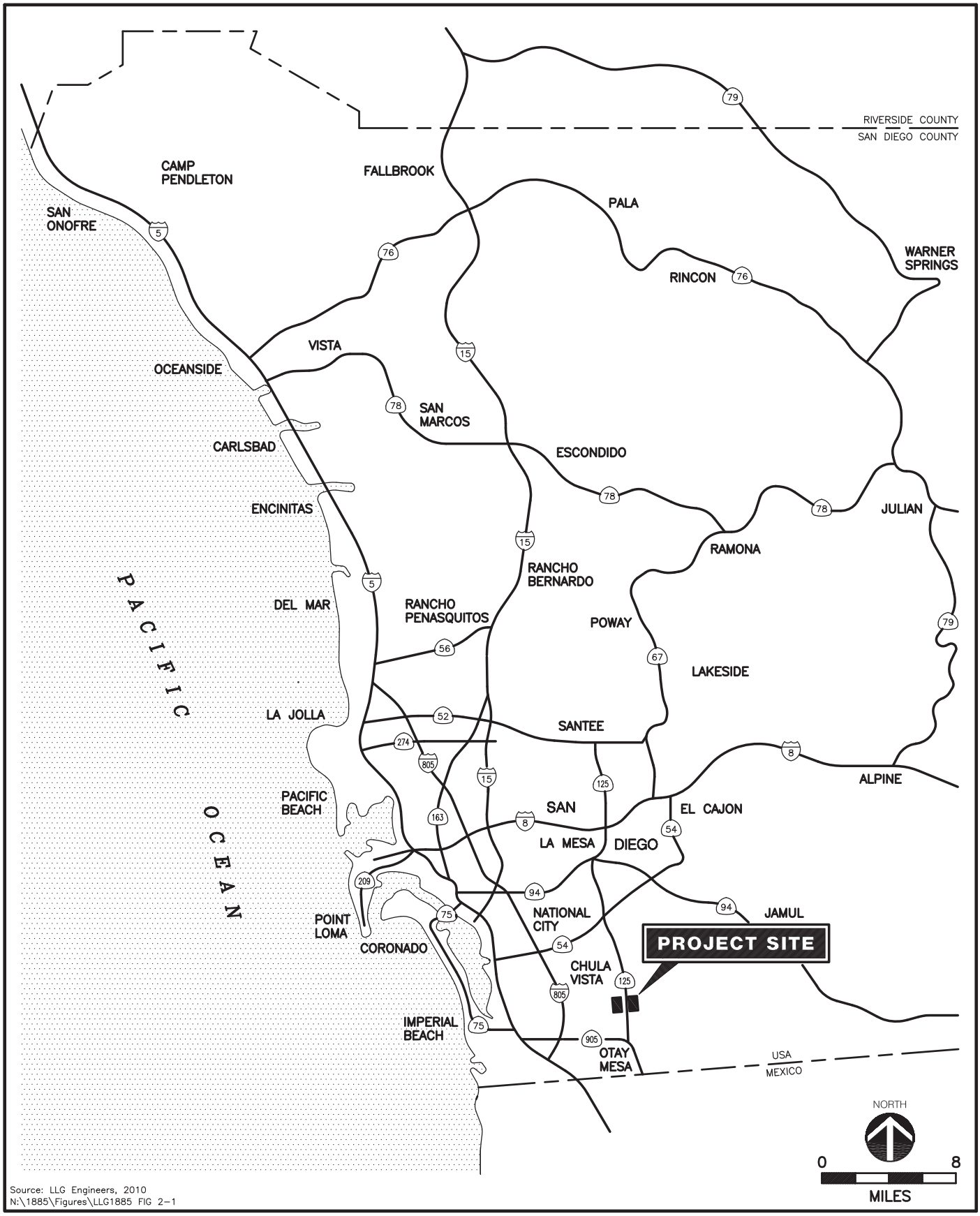
Figure 2–4 shows the Proposed General Development Plan Land Uses within the Project's land use change area. ***Figure 2–5*** shows the proposed changes to the Adopted Circulation Element as a result of the GPA and GDPA.

TABLE 2–1
YEAR 2030 ADOPTED AND PROPOSED
GENERAL PLAN & GENERAL DEVELOPMENT PLAN LAND USE FOR THE PROPOSED PROJECT

Land Use [a]	Units	Proposed Project Land Use	2001 Adopted General Plan Land Use
Single Family	du	887	642
Multi-Family	du	5,163	656
Commercial	acres	32.3	15.6
Community Purpose Facility	acres	10.8	3.1
Middle School	acres	20.2	25.6
Elementary School	acres	31.2	10.0
Park	acres	55.4	3.0
Future University	acres	50	215.0
Industrial/Regional Technology Park	acres	85.0	0.0

Footnotes:

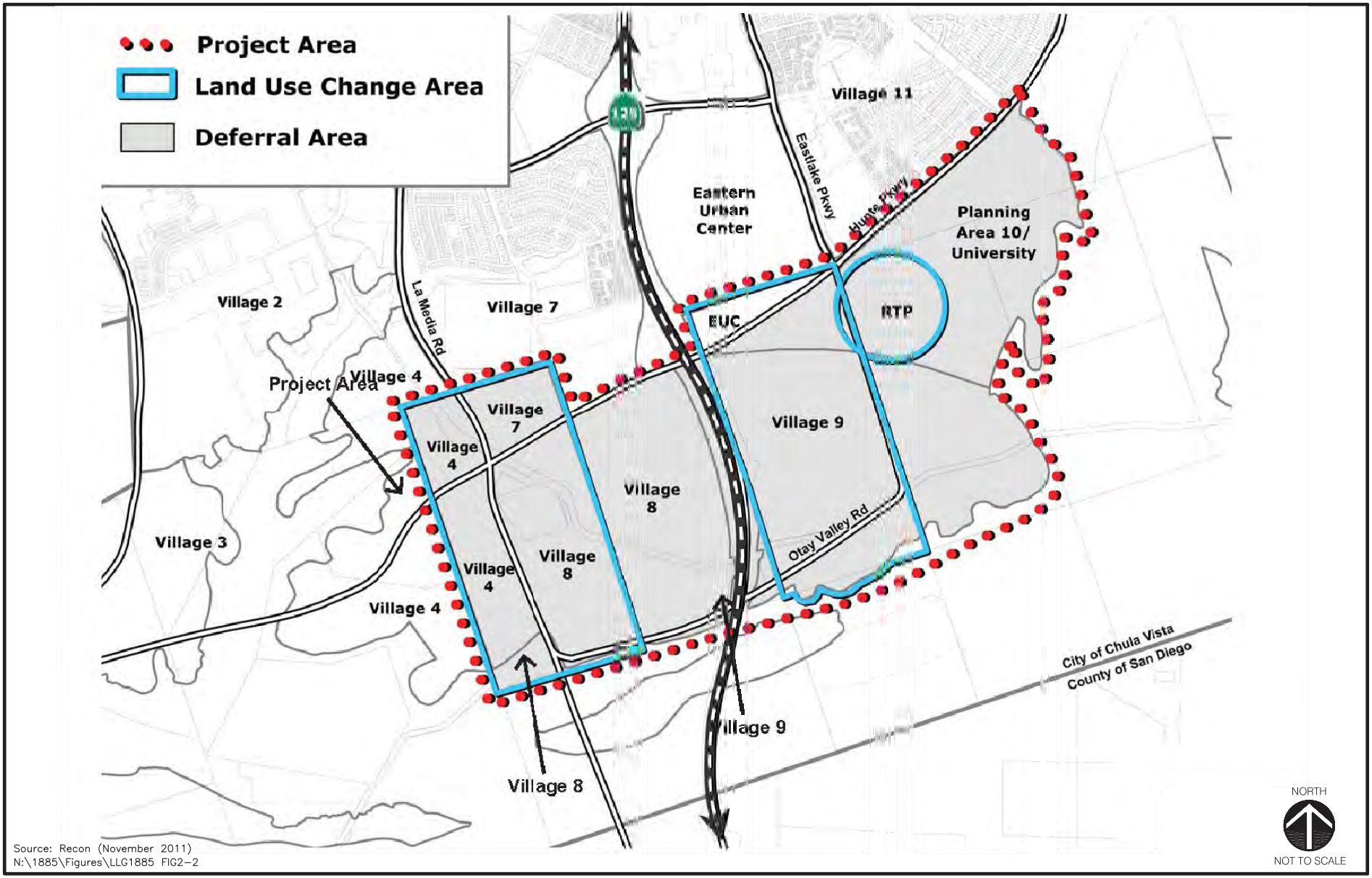
a. The General Plan Land Use assumptions in this table are gross estimated and are subject to further review and refinement.



Source: LLG Engineers, 2010
N:\1885\Figures\LLG1885 FIG 2-1

Figure 2-1

Vicinity Map



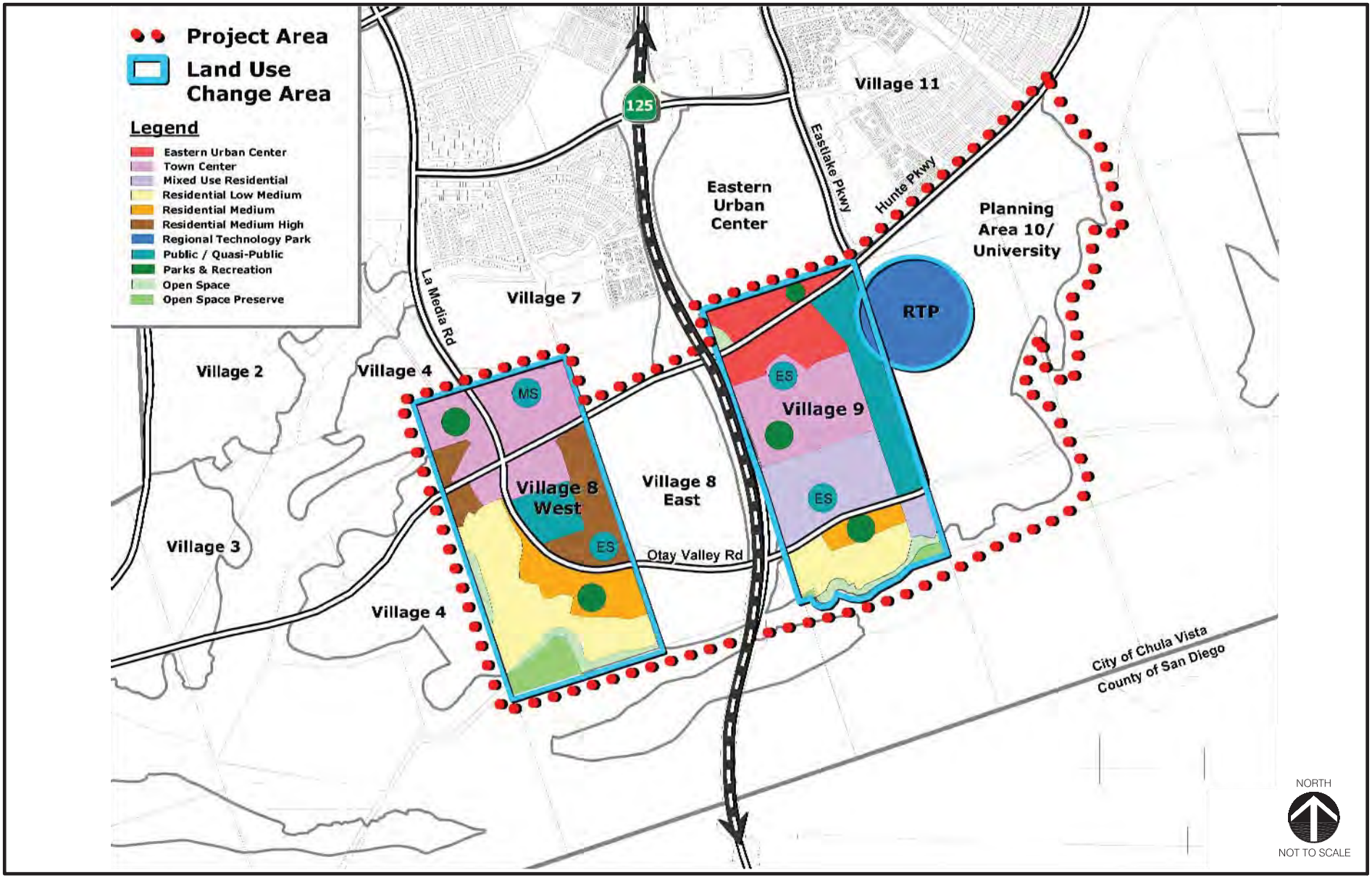
Source: Recon (November 2011)
N:\1885\Figures\LLG1885 FIG2-2

LINSCOTT LAW & GREENSPAN
engineers

Figure 2-2

Project Area Map

CHULA VISTA GENERAL PLAN & GENERAL DEVELOPMENT PLAN AMENDMENT FOR OTAY LAND COMPANY



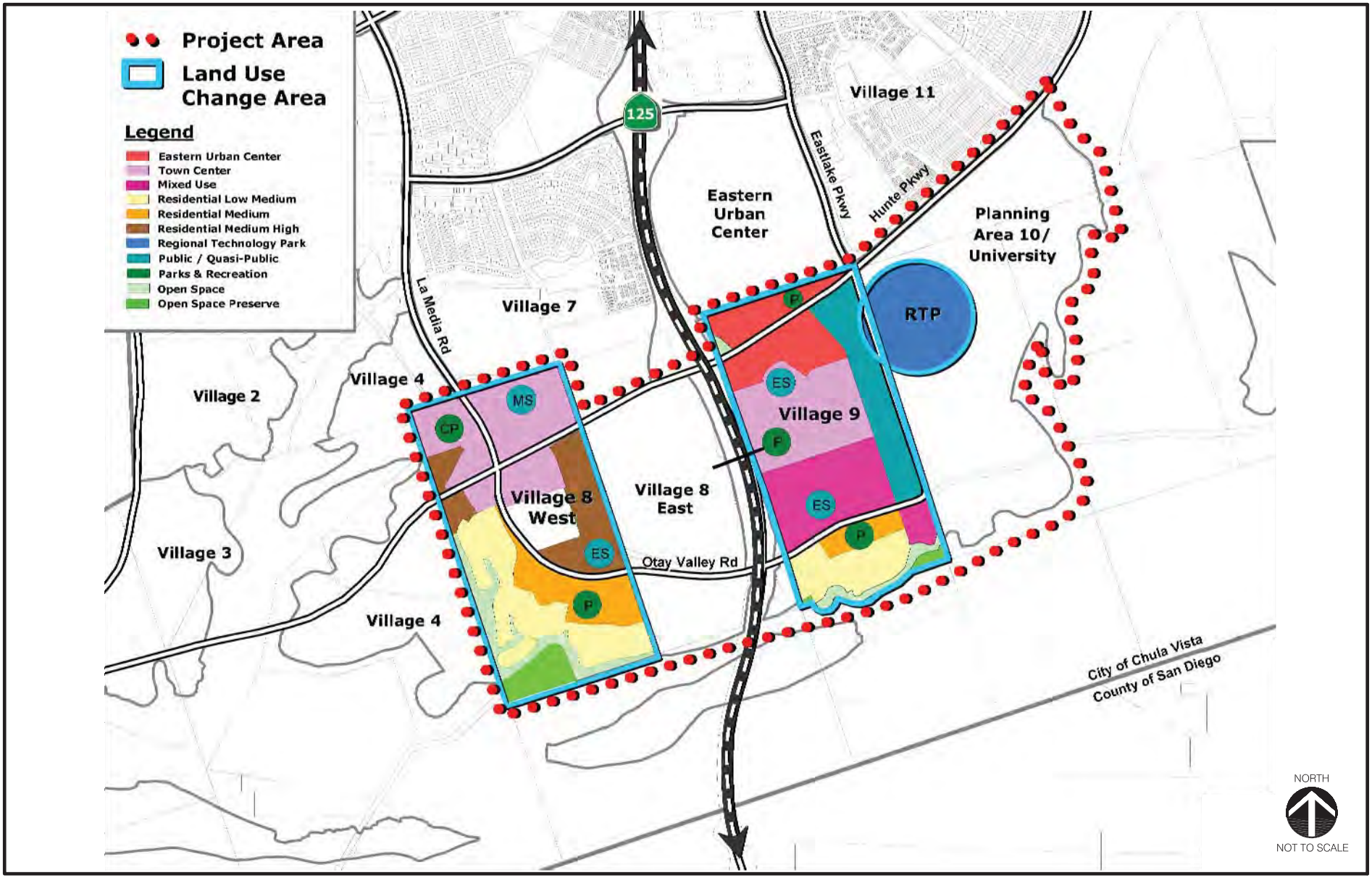
Source: City of Chula Vista Vision 2020 General Plan Update (2005 GPU)
N:\1885\Figures\LLG1885 FIG 2-3

LINSCOTT LAW & GREENSPAN engineers

Figure 2-3

Proposed General Plan Land Use

CHULA VISTA GENERAL PLAN & GENERAL DEVELOPMENT PLAN AMENDMENT FOR OTAY LAND COMPANY



Source: Otay Land Company, 2012
N:\1885\Figures\LLG1885 FIG 2-4

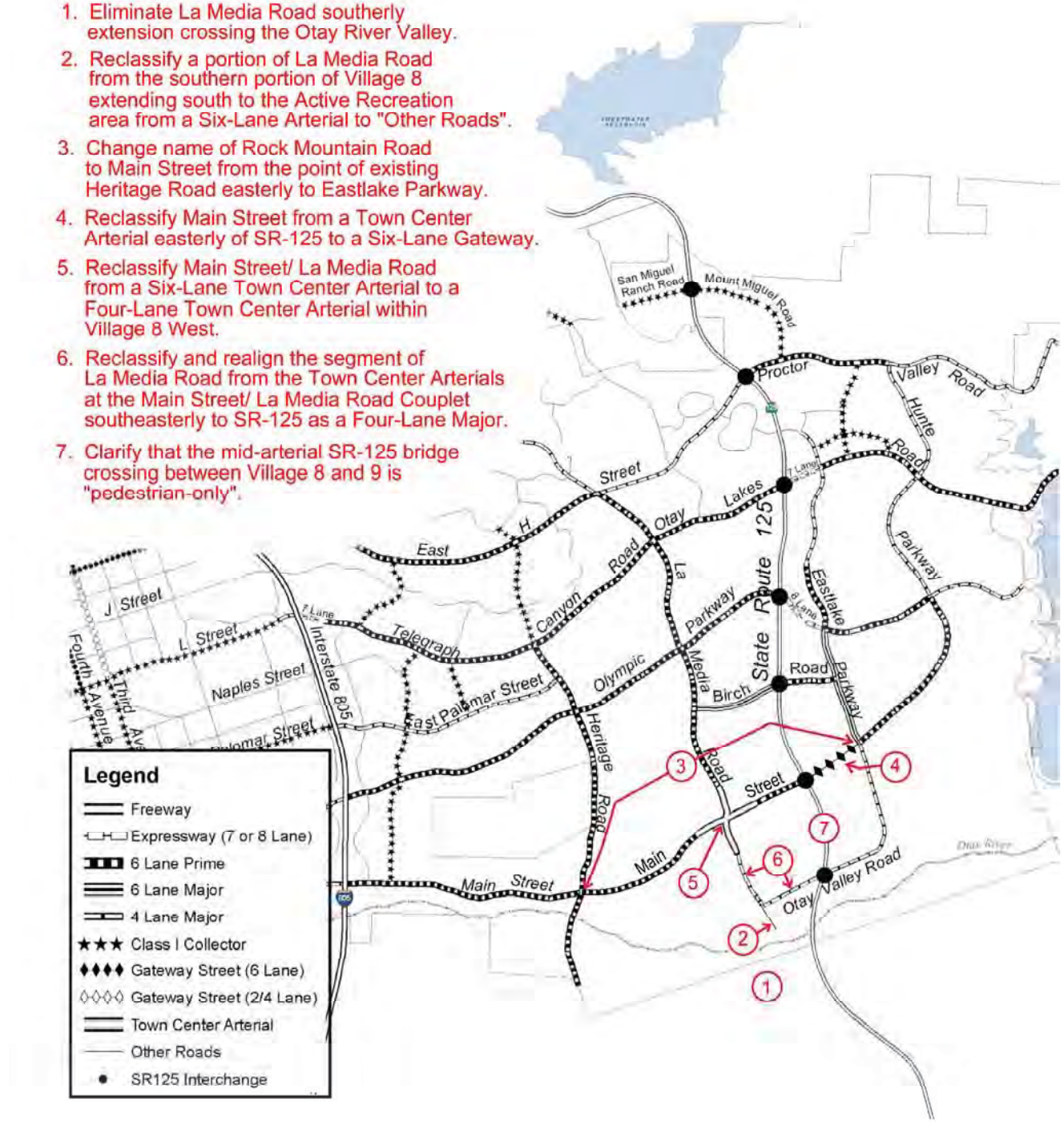
LINSCOTT LAW & GREENSPAN engineers

Figure 2-4

Proposed General Development Plan Land Use

CHULA VISTA GENERAL PLAN & GENERAL DEVELOPMENT PLAN AMENDMENT FOR OTAY LAND COMPANY

1. Eliminate La Media Road southerly extension crossing the Otay River Valley.
2. Reclassify a portion of La Media Road from the southern portion of Village 8 extending south to the Active Recreation area from a Six-Lane Arterial to "Other Roads".
3. Change name of Rock Mountain Road to Main Street from the point of existing Heritage Road easterly to Eastlake Parkway.
4. Reclassify Main Street from a Town Center Arterial easterly of SR-125 to a Six-Lane Gateway.
5. Reclassify Main Street/ La Media Road from a Six-Lane Town Center Arterial to a Four-Lane Town Center Arterial within Village 8 West.
6. Reclassify and realign the segment of La Media Road from the Town Center Arterials at the Main Street/ La Media Road Couplet southeasterly to SR-125 as a Four-Lane Major.
7. Clarify that the mid-arterial SR-125 bridge crossing between Village 8 and 9 is "pedestrian-only".



NORTH

NOT TO SCALE

Source: City of Chula Vista, 2010
N:\1885\Figures\LLG1885 FIG 2-5

LINSCOTT LAW & GREENSPAN engineers

Figure 2-5

Proposed GPA & GDPA Circulation Changes

3.0 EXISTING CONDITIONS DISCUSSION

The following streets are located within the Project study area and are listed as east/west or north/south streets. Brief descriptions of each street are given below. Roadway classification was determined from a review of the City of Chula Vista, City of San Diego and County of San Diego Circulation Elements and field observations. ***Figure 3–1*** depicts the existing roadway conditions for the study area street segments and freeway segments.

3.1 Existing Street Network

City of Chula Vista Roadways

Telegraph Canyon Road is classified in the adopted City of Chula Vista Circulation Plan and functions as a 7-Lane Expressway from I-805 to Oleander Avenue and a 6-Lane Prime Arterial continuing east. Bike lanes exist on both sides of the road and bus stops are located intermittently along the roadway. On-street parking is prohibited. The posted speed limit is 40 miles per hour (mph) from I-805 to Oleander Avenue, 45 mph from Oleander Avenue to Old Telegraph Canyon Road, and 50 mph from Old Telegraph Canyon Road to Hunte Parkway.

Olympic Parkway is classified in the adopted City of Chula Vista Circulation Plan and functions as a 6-Lane Prime Arterial in the study area from I-805 to Hunte Parwkay, except for the segment between SR-125 and Eastlake Parkway, which functions as an 8-Lane Expressway. Between Hunte Parkway and Wueste Road, Olympic Parkway transitions to a 4-Lane Major Arterial. Bike lanes and sidewalks are present on both sides of the roadway. Parking is not provided on either side of the roadway. The posted speed limit is 35 mph between I-805 and Brandywine Avenue and 50 mph between Brandywine Avenue and Hunte Parkway. Continuing east of Hunte Parkway it slows to 45 mph.

Birch Road is classified in the adopted City of Chula Vista Circulation Plan and functions as a 6-Lane Major Arterial between La Media Road and SR-125 and as a 6-Lane Prime Arterial between SR-125 and Eastlake Parkway. Bike lanes and sidewalks are present on both sides of the roadway. There is currently no posted speed limit.

Main Street is classified in the adopted City of Chula Vista Circulation Plan and functions as a 6-Lane Prime Arterial between I-805 and Heritage Road. Main Street currently terminates at Heritage Road. In the future, Main Street would be extended to Hunte Parkway by connecting to Rock Mountain Road. The posted speed limit is 50 mph.

Rock Mountain Road (Main Street) is a planned future roadway connecting from Main Street in the west to Hunte Parkway in the east. It is currently classified as a 6-Lane Prime Arterial from Heritage Road to the Main Street/La Media Road Couplet where it transitions to a Town Center Arterial with three lanes of travel in each direction through the length of the Couplet. Continuing past the Couplet's terminus, it is classified as a 6-Lane Prime Arterial to SR-125 and again as a Town Center Arterial from SR-125 to Eastlake Parkway in the adopted City of Chula Vista Circulation Plan.

Hunte Parkway is classified in the adopted City of Chula Vista Circulation Plan and functions as a 6-Lane Prime Arterial between Eastlake Parkway and Olympic Parkway with a proposed future interchange with SR-125. Bike lanes and sidewalks are present on both sides of the roadway. In the future, Hunte Parkway would be extended to Main Street by connecting to Rock Mountain Road at SR-125. The planned speed limit is 45 mph.

Otay Valley Road is a planned future roadway connecting from La Media Road to Eastlake Parkway, with a proposed future interchange with SR-125. It is currently classified as a 4-Lane Major Arterial in the adopted City of Chula Vista Circulation Plan.

Eastlake Parkway is classified in the adopted City of Chula Vista Circulation Plan and functions as a 6-lane Major Arterial between Olympic Parkway and Hunte Parkway. It is classified as a 4-Lane Major Arterial from Hunte Parkway to the future crossing with Otay Valley Road. Bike lanes and sidewalks are present on both sides of the roadway. The posted speed limit is 40 mph.

Heritage Road is currently not constructed to the south of Olympic Parkway. It is planned to be classified as a 6-Lane Prime Arterial from Olympic Parkway to the future connection with Main Street (Rock Mountain Road) in the adopted City of Chula Vista Circulation Plan. South of Main Street (Rock Mountain Road) to just north of Avenida de las Vistas, Heritage Road is currently built as a 2-Lane Collector roadway with a two-way left-turn lane (TWLTL). Continuing south into the City of San Diego jurisdiction, it is classified as a 6-Lane Prime Arterial just north of Avenida de las Vistas. From the City of San Diego Boundary to Otay Mesa Road it is currently classified as a 6-Lane Major Arterial in the City of San Diego Otay Mesa Community Plan and is currently built as a 2-Lane Collector.

La Media Road is classified in the adopted City of Chula Vista Circulation Plan and functions as a 6-Lane Prime Arterial from Olympic Parkway to Birch Road. Just south of Birch Road it is currently built as a 6-Lane Prime Arterial. Bike lanes and sidewalks are present on both sides of the roadway. The posted speed limit is 45 mph. It is classified as a Town Center Arterial at the commencement of the Main Street/La Media Road Couplet where it continues as a six-lane divided roadway with three lanes of travel in each direction through the length of the Couplet in the adopted City of Chula Vista Circulation Plan. Continuing south from Main Street (Rock Mountain Road) to Lonestar Road, La Media Road is within both the City of Chula Vista and City of San Diego jurisdiction and is planned to be a 6-Lane Prime Arterial functioning as a bridge crossing the Otay River Valley in the City of San Diego Otay Mesa Community Plan. From Lonestar Road to Otay Mesa Road it is an existing roadway currently built as a 2-Lane Collector and south of Otay Mesa Road to SR-905 it is built as a 4-Lane Collector

City of San Diego Roadways

Heritage Road – *See City of Chula Vista Roadways.*

La Media Road – *See City of Chula Vista Roadways.*

State Route 905 (SR-905)/Otay Mesa Road (SC-1120) is classified in the City of San Diego Otay Mesa Community Plan as a 6-Lane Expressway which extends from Interstate 5 to the east of SR-125. Approximately one mile east of I-805, there is a break in the route and SR-905 becomes Otay Mesa Road. The posted speed limit on Otay Mesa Road is 55 miles per hour (mph).

Otay Mesa Road is improved to 6-Lane Prime Arterial standards from west of Caliente Avenue to approximately 1,000 feet east of La Media Road. From just east of La Media Road to just east of SR-125, Otay Mesa Road is a 5-Lane Major Arterial within the study area.

Airway Road is classified on the City of San Diego Otay Mesa Community Plan as a 4-Lane Major Arterial from Cactus Road to La Media Road. It is currently built as a two-lane roadway along this portion. Bike lanes are not provided, parking is prohibited, and there is no posted speed limit.

Siempre Viva Road is classified on the City of San Diego Otay Mesa Community Plan as a 6-Lane Primary Arterial from Cactus Road to SR-905. Currently, the portion of the roadway from Cactus Road to its current terminus just east of Britannia Boulevard is a two to three-lane undivided roadway with construction underway to expand to a six-lane divided roadway. From La Media Road to Melksee Street, Siempre Viva Road is built with three lanes in the eastbound direction and one lane in the westbound direction. Continuing from Melksee Street, it is built as a six-lane divided roadway to SR-905. Bike lanes are provided and the posted speed limit is 35 mph.

Piper Ranch Road is a classified in the City of San Diego Otay Mesa Community Plan as 4-Lane Collector Road north of Otay Mesa Road within the East Otay Mesa Specific Plan Sub Area 1. It is currently built as a two-lane undivided roadway and under construction to widen it to its ultimate classification. There is no posted speed limit.

County of San Diego Roadways

Bonita Road is classified as a Major Roadway in the County of San Diego Circulation Element within the study area. The portion of the roadway from Central Avenue to Frisbie Street is currently built as three-lane roadway (consisting of two travel lanes in the northbound direction and one travel lane in the southbound direction) with a two-way left-turn lane. From Frisbie Street to San Miguel Road it transitions to a two-lane roadway with a two-way left-turn lane. Bike lanes are provided and curbside parking is not permitted. The posted speed limit is 45 mph.

Sweetwater Road is classified as a Major Roadway in the County of San Diego Circulation Element within the study area. The portion of the roadway from Bonita Road to Pray Street is currently built as a two-lane roadway with a two-way left-turn lane. From Pray Street, it transitions into a two-lane undivided roadway up to its commencement at Worthington Street. Bike lanes are provided and curbside parking is not permitted. There is currently no posted speed limit.

Caltrans Facilities

Interstate 805 is a north-south freeway, which originates in South County and terminates at its connection with the Interstate 5 (I-5) freeway near Del Mar, California. I-805 is generally an 8-Lane Freeway between I-805 and State Route 54 (SR-54) with auxiliary lanes present between some interchanges located within the study area.

State Route 125 is a north-south tollway between SR-54 and SR-905. SR-125 is generally a 4-Lane Tollway with several interchanges located within the study area.

Future State Route 905 is an east-west freeway, which originates in South County at I-805 and is proposed to be built as an 8-Lane Freeway with auxiliary lanes present between some interchanges up to its terminus at the international border.

3.2 Existing Traffic Volumes

3.2.1 *Daily Segment Volumes*

Linscott, Law & Greenspan Engineers (LLG) obtained 2008 traffic volumes from the City of Chula Vista Volume Book dated June 16, 2009. For data not included in this document, LLG commissioned 24-hour average daily traffic (ADT) counts in December 2009. ***Table 3–1*** is a summary of the data collected.

TABLE 3–1
EXISTING TRAFFIC VOLUMES

City of Chula Vista Street Segments	Existing ADT [a]
Telegraph Canyon Road	
I-805 to Oleander Ave	61,900
Heritage Road to La Media	40,300
Olympic Parkway	
I-805 to Brandywine Ave	47,000
Brandywine Ave to Heritage Rd/Paseo Ranchero	48,700
Heritage Rd/Paseo Ranchero to La Media	50,500
La Media Rd to SR-125	43,600
SR 125 to Eastlake Pkwy	40,500
Eastlake Pkwy to Hunte Pkwy	13,900
Birch Road	
La Media Rd to SR-125	10,200
Main Street	
I-805 to Brandywine Ave	26,400
Brandywine Ave to Maxwell St	18,700
Hunte Parkway	
Eastlake Parkway to Exploration Falls Dr	700
Exploration Falls Dr to Olympic Pkwy	800

TABLE 3–1
EXISTING TRAFFIC VOLUMES

City of San Diego Street Segments	Existing ADT
Heritage Road	
Main St to City Boundary	10,000
La Media Road	
Olympic Pkwy to Birch Rd	11,000
Birch Rd to future Main St (Rock Mountain Rd)	1,000
Eastlake Parkway	
Olympic Pkwy to Birch Rd	9,200
Birch Rd to Hunte Pkwy	1,300
Hunte Pkwy to Otay Valley Rd	DNE
Heritage Road	
City Boundary to Avenida de las Vistas	9,800
Avenida de las Vistas to Datsun St/Otay Valley Rd	4,800
Datsun St/Otay Valley Rd to Otay Mesa Rd	10,000
La Media Road	
Lonestar Rd to Otay Mesa Rd	4,400
Otay Mesa Rd to Future SR-905	16,500
Otay Mesa Road	
Otay Mesa Rd to Corporate Center Dr	67,000
Corporate Center Dr to Heritage Rd	67,500
Heritage Rd to Britannia Blvd	70,900
Britannia Blvd to La Media Rd	71,100
La Media Rd to Piper Ranch Rd	59,000
Piper Ranch Rd to SR-125	44,500
SR-125 to Harvest Rd	9,700

Footnotes:

a. Average Daily Traffic Volumes, where available.

General Notes:

DNE = Does not exist.

3.2.2 *Freeway Mainline Counts*

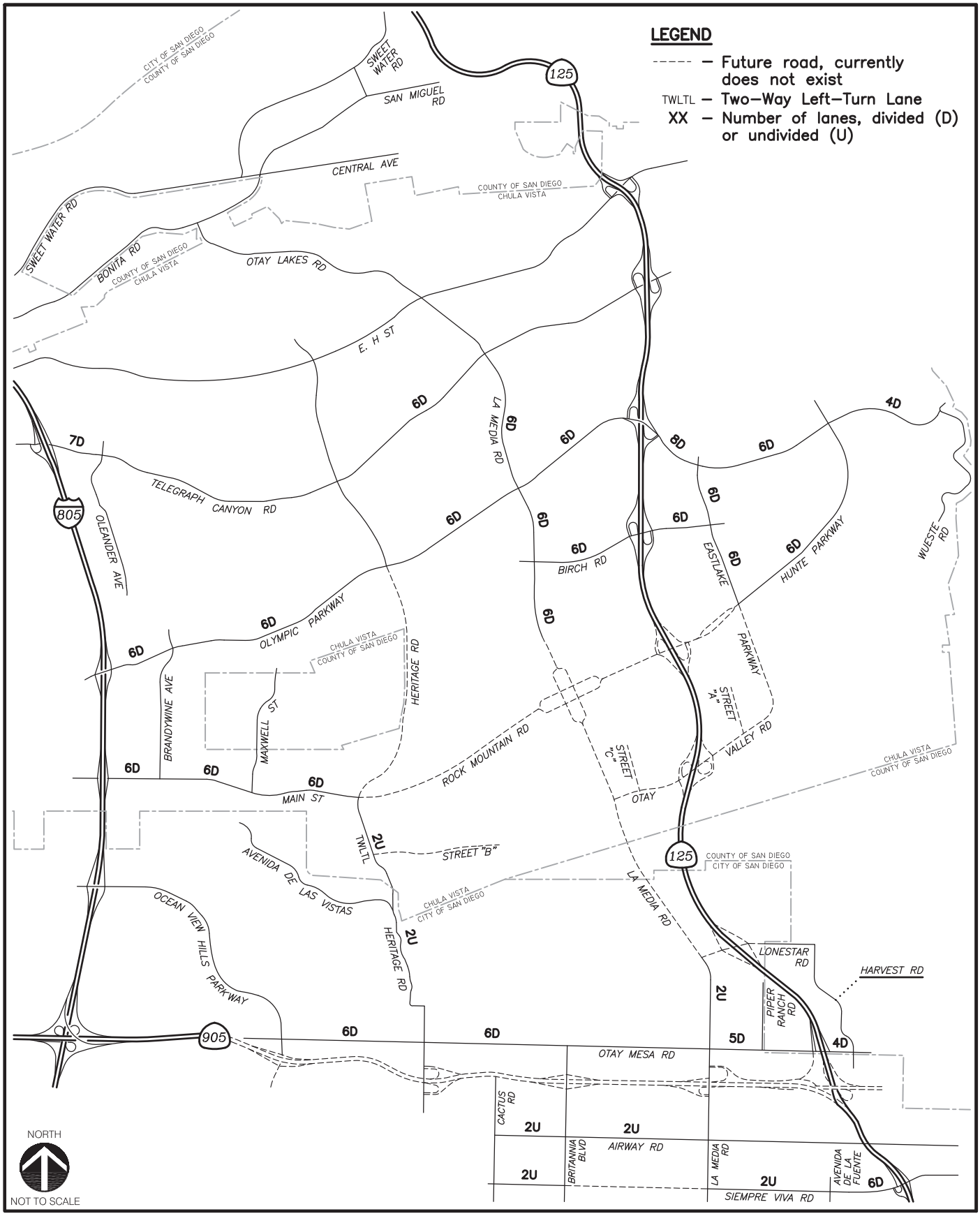
The latest available freeway mainline counts obtained from the Caltrans count records are summarized in ***Table 3–2*** below. Traffic volumes for SR-125 are currently not available to the public.

TABLE 3–2
FREEWAY MAINLINE ADT COUNTS

Freeway Segment	Volume
Interstate 805	
Olympic Pkwy/Orange Ave to Main St/Auto Park Dr	151,000
Main St/Auto Park Dr to Palm Ave	149,000
Palm Ave to SR-905	113,000
State Route 905	
I-805 to Otay Mesa Road	60,000

Source – Caltrans 2008

Figure 3–2 shows the existing daily traffic volumes. ***Appendix A*** contains a copy of the Chula Vista Volumes Book, manual segment count sheets, and a copy of the 2008 Caltrans volumes.

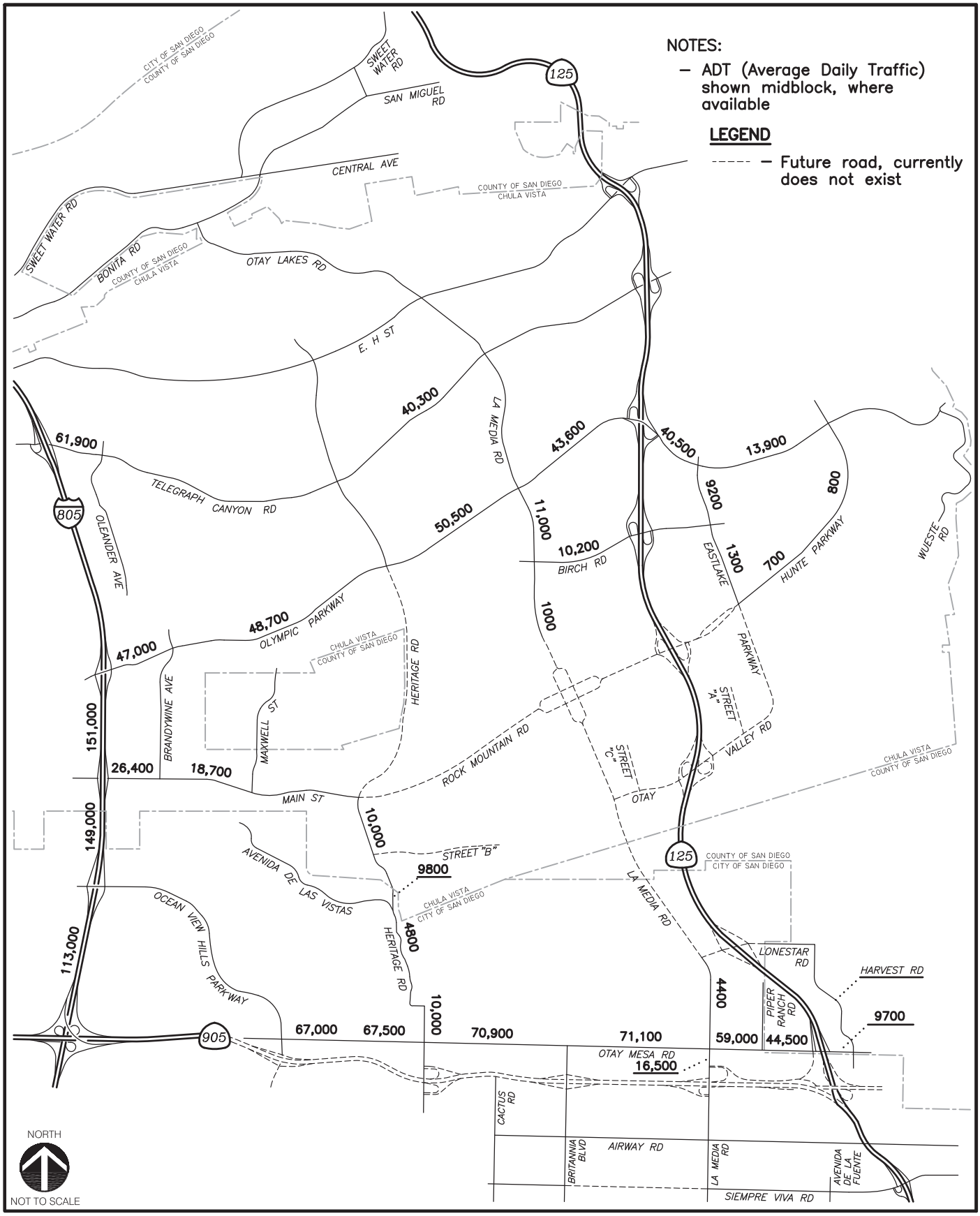


REV. 12/12/2010
N:\1885\Figures\LLG1885 FIG 3–1

LINSCOTT LAW & GREENSPAN engineers

Figure 3-1

Existing Roadway Conditions Diagram



REV. 11/30/2011
N:\1885\Figures\LLG1885 FIG 3-2

LINSCOTT LAW & GREENSPAN engineers

Figure 3-2

Existing Traffic Volumes

4.0 STUDY AREA, ANALYSIS APPROACH & METHODOLOGY

4.1 Study Area

The study area was determined based on SANDAG Congestion Management Program (CMP) which requires that a Project study area be established as follows:

- All Regional Significant Arterial system street segments where the Project will add 50 or more peak hour trips (500 ADT) in either direction.
- Mainline freeway locations where the Project will add 150 or more peak hour trips in either direction.

In order to determine which segments are forecasted to carry 500 Project ADT, the difference between the Year 2030 ADT from Alternative 3 and Alternative 1 was calculated. (Alternative 3 – Alternative 1 = Project ADT). If this volume was greater than 500 ADT, the road segment was included in the analysis. Section 11.0 further discusses the CMP Compliance. The following is a list of the study area street and freeway segments:

Street Segments

City of Chula Vista Roadways

Telegraph Canyon Road

1. I-805 to Oleander Avenue
2. Heritage Road to La Media Road

Olympic Parkway

3. I-805 to Brandywine Avenue
4. Brandywine Avenue to Heritage Road/Paseo Ranchero
5. Heritage Road/Paseo Ranchero to La Media Road
6. La Media Road to SR-125
7. SR-125 to Eastlake Parkway
8. Eastlake Parkway to Hunte Parkway
9. Hunte Parkway to Wueste Road

Birch Road

10. La Media Road to SR-125
11. SR-125 to Eastlake Parkway

Main Street

12. I-805 to Brandywine Avenue
13. Brandywine Avenue to Maxwell Road
14. Maxwell Road to Heritage Road

Main Street (Rock Mountain Road)

15. Heritage Road to Main Street/La Media Road Couplet

16. Main Street/La Media Road Couplet
17. Main Street/La Media Road Couplet to SR-125
18. SR-125 to Eastlake Parkway

Hunte Parkway

19. Eastlake Parkway to Exploration Falls Drive
20. Exploration Falls Drive to Olympic Parkway

Otay Valley Road

21. La Media Road to SR-125
22. SR-125 to Street "A"
23. Street "A" to Eastlake Parkway

Heritage Road

24. Olympic Parkway to Main Street
25. Main Street to City Boundary

La Media Road

25. Olympic Parkway to Birch Road
26. Birch Road to Main Street/La Media Road Couplet
27. Main Street/La Media Road Couplet
28. Main Street/La Media Road Couplet to Otay Valley Road
29. Otay Valley Road to Lonestar Road

Eastlake Parkway

30. Olympic Parkway to Birch Road
31. Birch Road to Hunte Parkway
32. Hunte Parkway to Otay Valley Road

City of San Diego Roadways

Heritage Road

33. City Boundary to Avenida de las Vistas
34. Avenida de las Vistas to Datsun Street/Otay Valley Road
35. Datsun Street/Otay Valley Road to Otay Mesa Road
36. Otay Mesa Road to future SR-905

La Media Road

37. Lonestar Road to Otay Mesa Road
38. Otay Mesa Road to SR-905

Otay Mesa Road

39. Otay Mesa Road to Corporate Center Drive
40. Corporate Center Drive to Heritage Road

41. Heritage Road to Britannia Boulevard
42. Britannia Boulevard to La Media Road
43. La Media Road to Piper Ranch Road
44. Piper Ranch Road to SR-125
45. SR-125 to Harvest Road

Airway Road

46. Cactus Road to Britannia Boulevard
47. Britannia Boulevard to La Media Road

Siempre Viva Road

48. Cactus Road to Britannia Boulevard
49. Britannia Boulevard to La Media Road
50. La Media Road to Avenida de la Fuente
51. Avenida de la Fuente to SR-905

Piper Ranch Road

52. Lonestar Road to Otay Mesa Road

County of San Diego Roadways

Bonita Road

53. Central Avenue to San Miguel Road

Sweetwater Road

54. Bonita Road to Park Drive

Freeway Segments

Interstate 805

1. Olympic Parkway/Orange Avenue to Main Street/Auto Park Drive
2. Main Street/Auto Park Drive to Palm Avenue
3. Palm Avenue to SR-905

State Route 125

4. Olympic Parkway to Birch Road
5. Birch Road to Main Street
6. Main Street to Otay Valley Road
7. Otay Valley Road to Lonestar Road
8. Lonestar Road to Otay Mesa Road
9. Otay Mesa Road to SR-905

State Route 905

10. I-805 to Ocean View Hills
11. Ocean View Hills to Heritage Road
12. Heritage Road to Britannia Road
13. Britannia Road to La Media Road
14. La Media Road to SR-125

It should be noted that based on the State Route 11 and the Otay Mesa East Port of Entry EIR, dated November 2010, LOS C or better operations are forecasted on the future SR-11. Since the addition of Project-related ADT to this facility would not result in a change in the forecasted acceptable LOS C operations, a freeway mainline analysis of SR-11 was not addressed in the level of service analyses included in this report.

4.2 Analysis Approach

The Project is a General Plan and General Development Plan Amendment. No specific development is being analyzed in the traffic study. The standard of practice in transportation planning is to analyze such a Project in the 20-year horizon time frame (i.e. Year 2030), since development will occur over a long period. The source for Year 2030 volumes in the South Bay region is the SANDAG traffic model. Furthermore, the standard of practice to analyze potential impacts in 2030 is to focus the analysis on street segments and conduct the analysis on an Average Daily Traffic (ADT) basis. For the purpose of this study, a limited peak hour intersection analysis was also conducted and is discussed later on in the report

There are several different land use and network options that could potentially be implemented in the future and therefore, several different traffic models were run with different assumptions. A total of nine (9) alternatives were run with different assumptions for the Project land uses, City/County of San Diego land uses, La Media Road bridge (in or out) and SR-125 (free or toll). The following is a description of the nine Traffic Model Alternatives.

Year 2030 Alternative 1 (Adopted General Plan) refers to the conditions and traffic volumes that will be implemented under build out of the adopted General Plan land uses and network in the Year 2030 with the exception of the deferral area (Villages 8 West, 8 East, 9, 10/University and the RTP) which uses 2001 adopted General Plan land uses. The future land uses and roadway network were assumed to include the adopted City of San Diego and County of San Diego General Plan land uses, and the La Media Road bridge crossing constructed with the SR-125 remaining a tollway.

Year 2030 Alternative 2 refers to the conditions that will exist under Alternative 1 conditions with the addition of the Project land uses for Otay Land Company Village 8 West and Village 9. All roadway segments were assumed to be built out to their classifications as identified in the adopted City of Chula Vista General Plan, County of San Diego General Plan, and the City of San Diego Otay Mesa Community Plan with the exception of the proposed network changes described in Section 2.2.1. The future land uses and roadway network were assumed to include the proposed

changes to the University and RTP land uses, the adopted City of San Diego and County of San Diego General Plan land uses, and the La Media Road bridge crossing constructed with the SR-125 remaining a tollway.

Year 2030 Alternative 3 refers to the conditions that will exist under Alternative 2 conditions, with the exception of the deletion of the La Media Road bridge crossing.

Year 2030 Alternative 4 refers to the conditions that will exist under Alternative 2 conditions, with the exception of the changes proposed for the City of San Diego Otay Mesa Community Plan Update Alternative 3B and County of San Diego GP Update land uses, which were coded as proposed.

Year 2030 Alternative 5 refers to the conditions that will exist under Alternative 3 conditions, with the exception of the changes proposed for the City of San Diego Otay Mesa Community Plan Update Alternative 3B and County of San Diego GP Update land uses, which were coded as proposed.

Year 2030 Alternative 6 refers to the conditions that will exist under Alternative 4 conditions, with the inclusion of the remaining LOA (JPB) land uses, which were coded as proposed.

Year 2030 Alternative 7 refers to the conditions that will exist under Alternative 5 conditions, with the inclusion of the remaining LOA (JPB) land uses, which were coded as proposed.

Year 2030 Alternative 8 refers to the conditions that will exist under Alternative 7 conditions, with the exception of SR-125 changing from a tollway to a freeway.

Year 2030 Alternative 9 refers to the conditions that will exist under Alternative 8 conditions, with the exception of the completion of the La Media Road bridge crossing.

Alternative 1 assumes build out of the GPU Preferred Alternative land uses and network in the Year 2030 with the exception of the deferral area (Villages 8 West, 8 East, 9, 10/University and the RTP) which uses 2001 adopted General Plan land uses.

Of the eight remaining alternatives, a focused analysis was conducted for Alternatives 3 and 7. Alternative 3 measures the direct impacts of the Project against Alternative 1 conditions. The Project itself consists of the proposed network changes listed in Section 2.2.1 and the proposed Project land uses. Alternative 7 measures the cumulative impacts of the Project. In addition to the Project network conditions and land uses, Alternative 7 includes the remaining land uses within the Project Area (Village 8 East and the Planning Area 10/ University Site) and City of San Diego Otay Mesa Community Plan Update and County of San Diego proposed General Plan Update land uses as reasonably foreseeable projects. For purposes of identifying impacts and providing mitigation, a detailed level of service analysis was conducted for both Alternatives 3 and 7 as compared to Alternative 1.

Table 4–1 shows the land use and network assumptions matrix prepared by the City of Chula Vista for each of the nine scenarios. It should be noted that references in the table to "JPB" refer to the other remaining party and their independent LOA.

In addition, an ***Existing + Project*** analysis is included in this study. Section 13.0 discusses this scenario in further detail.

TABLE 4–1
CITY OF CHULA VISTA LAND USE & NETWORK ASSUMPTIONS

EIR	ALT	Study Year Horizon	Transit Assumptions [6]	Project Land Uses	University & RTP Land Uses	Circulation Element	La Media Rd Xing	City of San Diego (Alt 3B)+County Land Uses [4]	SR-125 Tollway or Freeway	Select Zone Analysis by TAZ	Note/Filename
The Plan	1	2030	Reasonably Expected RTP	Adopted [1]	2001 Adopted	Adopted	Bridge is IN	Adopted	Toll	4391 & 4614 & 4373 (optional)	Adopted Plans (SANDAG Modeling)
CEQA Review Analyze the Proposed Project's Land Uses for Direct and Cumulative Impacts with Various Permutations of Circulation Element and Land Use Proposals											
Direct Impacts [2]	2	2030	Reasonably Expected RTP	Proposed OLC V.8W & 9 Only Blended Remainder	Proposed [5]	Proposed	Bridge is IN	Adopted	Toll	4391 & 4614 & 4373 (optional)	Alt 1 vs. 2 Analyzes the Impacts of OLC Proposed Project Changes for Direct Impacts – La Media Rd Bridge IN
Direct Impacts [2]	3	2030	Reasonably Expected RTP	Proposed OLC V.8W & 9 Only Blended Remainder	Proposed [5]	Proposed	Bridge is OUT	Adopted	Toll	4391 & 4614 & 4373 (optional)	Alt 1 vs. 3 Analyzes the Impacts of OLC Proposed Project Changes for Direct Impacts – La Media Rd Bridge OUT
Direct Impacts [2]	4	2030	Reasonably Expected RTP	Proposed OLC V.8W & 9 Only Blended Remainder	Proposed [5]	Proposed	Bridge is IN	City Alt 3B/County Referral Proposed	Toll	4391 & 4614 & 4373 (optional)	Alt 2 vs. 4 Analyzes the Impacts of Proposed City/County – La Media Rd Bridge IN
Direct Impacts [2]	5	2030	Reasonably Expected RTP	Proposed OLC V.8W & 9 Only Blended Remainder	Proposed [5]	Proposed	Bridge is OUT	City Alt 3B/County Referral Proposed	Toll	4391 & 4614 & 4373 (optional)	Alt 3 vs. 5 Analyzes the Impacts of Proposed City/County – La Media Rd Bridge OUT
Cumulative Impacts [3]	6	2030	Reasonably Expected RTP	Proposed JPB + OLC V.8W & 9 Only Blended Remainder	Proposed [5]	Proposed	Bridge is IN	City Alt 3B/County Referral Proposed	Toll	4391 & 4614 & 4373 (optional)	[Cumulatively] Alt 4 vs. 6 Analyzes the Impacts of Proposed Project – La Media Rd Bridge IN
Cumulative Impacts [3]	7	2030	Reasonably Expected RTP	Proposed JPB + OLC V.8W & 9 Only Blended Remainder	Proposed [5]	Proposed	Bridge is OUT	City Alt 3B/County Referral Proposed	Toll	4391 & 4614 & 4373 (optional)	[Cumulatively] Alt 5 vs. 7 Analyzes the Impacts of Proposed Project – La Media Rd Bridge OUT
Cumulative Impacts [3]	8	2030	Reasonably Expected RTP	Proposed JPB + OLC V.8W & 9 Only Blended Remainder	Proposed [5]	Proposed	Bridge is OUT	City Alt 3B/County Referral Proposed	Free	4391 & 4614 & 4373 (optional)	[Cumulatively] Analyzes the Impacts of Toll Removal Against All Previous Proposals – La Media Rd Bridge OUT
Cumulative Impacts [3]	9	2030	Reasonably Expected RTP	Proposed JPB + OLC V.8W & 9 Only Blended Remainder	Proposed [5]	Proposed	Bridge is IN	City Alt 3B/County Referral Proposed	Free	4391 & 4614 & 4373 (optional)	[Cumulatively] Analyzes the Impacts of Toll Removal Against All Previous Proposals – La Media Rd Bridge IN

Source: Agreement for Services Between the SANDAG Service Bureau and City of Chula Vista November 30, 2009

Footnotes:

1. Adopted here is defined as the 2005 GPU citywide land uses with an overlay of the 2005 hash marked area that includes land uses as determined by the 2001 City Council Adoption.
2. Direct Impacts are defined as Proposed OLC V. 8W & 9 land uses and impacts ONLY. Blended remainder. The analysis will follow and determine exclusive impacts of OLC V.8 W & 9 traffic.
3. Cumulative includes the remaining land uses within the Project Area (Village 8 East and the Planning Area 10/ University Site) and City of San Diego Otay Mesa Community Plan Update and County of San Diego proposed General Plan Update land uses as reasonably foreseeable projects. Proposed Project plus proposed OLC V. 8W & 9 traffic analysis plus blended remainder. These models will follow and determine traffic impacts of JPB & OLC V.8W & 9 traffic.
4. County land uses are at 100% buildout for all analyses.
5. Proposed University and RTP land uses are defined as part of the proposed Project
6. Transit assumptions are the Reasonably Expected RTP which includes only SBBRT as funded route.

4.3 Methodology

Level of service (LOS) is the term used to denote the different operating conditions which occur on a given roadway segment under various traffic volume loads. It is a qualitative measure used to describe a quantitative analysis taking into account factors such as roadway geometries, signal phasing, speed, travel delay, freedom to maneuver, and safety. Level of service provides an index to the operational qualities of a roadway segment or an intersection. Level of service designations range from A to F, with LOS A representing the best operating conditions and LOS F representing the worst operating conditions. Level of service designation is reported differently for signalized and unsignalized intersections, as well as for roadway segments.

4.4 Street Segments

Street segment analysis is based upon the comparison of daily traffic volumes (ADTs) to the City of Chula Vista, City of San Diego and County of San Diego roadway classification and capacity tables. These tables provide segment capacities for different street classifications, based on traffic volumes and roadway characteristics. The roadway classification and capacity tables are attached in ***Appendix B.***

4.5 Freeway Segments

Freeway segments were analyzed during the AM and PM peak hours based on the methodologies developed by CALTRANS District 11. The assessment of key freeway segments is necessary to satisfy the requirement of the CMP, as outlined later in the report. Freeway segment LOS is based on the volume to capacity ratio on the freeway.

The analysis of freeway segment LOS is based on the procedure developed by Caltrans District 11 based on methods described in the Highway Capacity Manual. The procedure involves comparing the peak hour volume of the mainline segment to the theoretical capacity of the roadway (V/C). The procedure for calculating freeway LOS involves the estimation of volume to capacity (V/C) ratio using the following equation:

$$V/C = \frac{((AADT \times Peak\ Hour\ Percent \times Directional\ Factor)/(Truck\ Terrain\ Factor))}{Lane\ Capacity}$$

AADT = Average Annual Daily Traffic
Peak Hour Percent = Percentage of ADT occurring during the peak hour.
Directional Factor = Percentage of peak hour traffic occurring in peak direction.
Truck Factor = Truck/terrain factor to represent influence of heavy vehicles & grades.
Capacity = 2,000 vehicles/lane/hour/lane for mainline, and 1,200 for auxiliary lanes.

The resulting V/C is then compared to accepted ranges of V/C values corresponding to the various Levels of Service for each facility classification, as shown in ***Table 4–2***. The corresponding Level of Service represents an approximation of existing or anticipated future freeway operating condition in the peak direction of travel during the peak hour.

Appendix C contains the relevant K and D factors listed in the Caltrans *Peak Hour Volume Data* and the truck factors from the *2007 Annual Average Daily Truck Traffic on the California State Highway System* utilized in the analysis.

4.6 Intersections

Signalized Intersections were analyzed under AM and PM peak hour conditions. Average vehicle delay was determined utilizing the methodology found in Chapter 16 of the *2000 Highway Capacity Manual (HCM),* with the assistance of the *Synchro* (version 7) computer software. The delay values (represented in seconds) were qualified with a corresponding intersection LOS.

Although intersections are not the main focus of this analysis, certain locations are analyzed in subsequent sections of this report.

TABLE 4–2
CALTRANS DISTRICT 11
FREEWAY SEGMENT LEVEL OF SERVICE DEFINITIONS

LOS	V/C	Congestion/Delay	Traffic Description
USED FOR FREEWAYS, EXPRESSWAYS AND CONVENTIONAL HIGHWAYS			
A	<0.41	None	Free flow
B	0.42-0.62	None	Free to stable flow, light to moderate volumes.
C	0.63-0.80	None to minimal	Stable flow, moderate volumes, freedom to maneuver noticeably restricted
D	0.81-0.92	Minimal to substantial	Approaches unstable flow, heavy volumes, very limited freedom to maneuver.
E	0.93-1.00	Significant	Extremely unstable flow, maneuverability and psychological comfort extremely poor.
USED FOR FREEWAYS AND EXPRESSWAYS			
F(0)	1.01-1.25	Considerable 0-1 hour delay	Forced flow, heavy congestion, long queues form behind breakdown points, stop and go.
F(l)	1.26-1.35	Severe 1-2 hour delay	Very heavy congestion, very long queues.
F(2)	1.36-1.45	Very Severe 2-3 hour delay	Extremely heavy congestion, longer queues, more numerous breakdown points, longer stop periods.
F(3)	>1.46	Extremely Severe 3+ hours of delay	Gridlock

Source: Caltrans District 11
Notes:
LOS = Level of Service
V/C = Volume/Capacity

5.0 SIGNIFICANCE CRITERIA

This report analyzes each study area location utilizing the appropriate jurisdictions' significance criteria. Therefore, City of Chula Vista roadways were analyzed using City of Chula Vista significance criteria, City of San Diego roadways were analyzed using its own significance criteria, and County of San Diego roadways were analyzed using County significance criteria.

Traffic impacts are defined as either "direct Project" impacts or "cumulative Project" impacts. Direct Project impacts are those impacts for which the addition of Project trips results in an identifiable degradation in level of service on freeway segments or roadway segments triggering the need for specific Project-related improvement strategies. Cumulative impacts are those in which the Project trips contribute to a poor level of service, at a nominal level. Again, for purposes of this report, Alternative 3 is analyzed using the "direct Project" impact criteria and Alternative 7 is analyzed using the "cumulative Project" impact criteria. The following is a description of the various jurisdictions' significance criteria.

5.1 City of Chula Vista

Street Links/Segments

a. Project specific (direct) impact if all the following criteria are met:
    i. Level of service is LOS D, LOS E, or LOS F.
    ii. Project trips comprise 5% or more of total segment volume.
    iii. Project adds greater than 800 ADT to the segment.

b. Cumulative impact if only (i) is met.

However, if the intersections along a LOS D or LOS E segment all operate at LOS D or better, the segment impact is considered not significant since intersection analysis is more indicative of actual roadway system operations than street segment analysis. If segment Level of Service is LOS F, impact is significant regardless of intersection LOS.

It should be noted that roadways classified as Gateway Streets, Urban Arterials, Commercial Boulevards, and Downtown Promenades allows for a minimum performance standard of LOS D.

Intersections

a. Project specific (direct) impact if all the following criteria are met:
    i. Level of service is LOS E or LOS F.
    ii. Project trips comprise 5% or more of entering volume.

b. Cumulative impact if only (i) is met.

5.2 City of San Diego

According to the City of San Diego's *Significance Determination Thresholds* report dated January 2007, a Project is considered to have a significant impact if the new Project traffic has decreased the operations of surrounding roadways by a City defined threshold. For projects deemed complete on or after January 1, 2007, the City defined threshold by roadway type or intersection is shown in ***Table 5–1***.

The impact is designated either a "direct" or "cumulative" impact. According to the City's *Significance Determination Thresholds* report,

> *"Direct* traffic impacts are those projected to occur at the time a proposed development becomes operational, including other developments not presently operational but which are anticipated to be operational at that time (near term)."
>
> *"Cumulative* traffic impacts are those projected to occur at some point after a proposed development becomes operational, such as during subsequent phases of a Project and when additional proposed developments in the area become operational (short-term cumulative) or when affected community plan area reaches full planned buildout (long-term cumulative)."
>
> It is possible that a Project's near term (direct) impacts may be reduced in the long term, as future projects develop and provide additional roadway improvements (for instance, through implementation of traffic phasing plans). In such a case, the Project may have direct impacts but not contribute considerably to a cumulative impact."
>
> For intersections and roadway segments affected by a Project, level of service (LOS) D or better is considered acceptable under both direct and cumulative conditions."

If the Project exceeds the thresholds in *Table 5–1*, then the Project may be considered to have a significant "direct" or "cumulative" Project impact. A significant impact can also occur if a Project causes the Level of Service to degrade from D to E, even if the allowable increases in *Table 5–1* are not exceeded. A feasible mitigation measure will need to be identified to return the impact within the City thresholds, or the impact will be considered significant and unmitigated.

TABLE 5–1
CITY OF SAN DIEGO
TRAFFIC IMPACT SIGNIFICANT THRESHOLDS

Level of Service with Project [b]	Allowable Increase Due to Project Impacts [a]				
	Freeways		Roadway Segments		Intersections
	V/C	Speed (mph)	V/C	Speed (mph)	Delay (sec.)
E	0.010	1.0	0.02	1.0	2.0
F	0.005	0.5	0.01	0.5	1.0

Footnotes:

a. If a proposed Project's traffic causes the values shown in the table to be exceeded, the impacts are determined to be significant. The Project applicant shall then identify feasible improvements (within the Traffic Impact Study) that will restore/and maintain the traffic facility at an acceptable LOS. If the LOS with the proposed Project becomes unacceptable (see note b), the Project applicant shall be responsible for mitigating the Project's direct significant and/or cumulatively considerable traffic impacts.

b. All LOS measurements are based upon Highway Capacity Manual procedures for peak-hour conditions. However, V/C ratios for roadway segments are estimated on an ADT/24-hour traffic volume basis (using Table 2 of the City's Traffic Impact Study Manual). The acceptable LOS for freeways, roadways, and intersections is generally "D" ("C" for undeveloped locations).

General Notes:

Delay = Average control delay per vehicle measured in seconds for intersections

LOS = Level of Service

V/C = Volume to Capacity Ratio (capacity at LOS E should be used)

Speed = Arterial speed measured in miles per hour for Congestion Management Program (CMP) analyses

Also, according to the City of San Diego's *Significance Determination Thresholds* report, other possible significant impacts that are not accounted for in *Table 5–1* include the following:

- If a Project would increase traffic hazards to motor vehicles, bicyclists or pedestrians due to proposed non-standard design features (e.g., poor sight distance, proposed driveway onto an access-restricted roadway), the impact would be significant. *Note: analysts should refer readers to a discussion of this issue in the Health and Safety section of the environmental document.*

- If a Project would result in the construction of a roadway which is inconsistent with the General Plan and/or a community plan, the impact would be significant if the proposed roadway would not properly align with other existing or planned roadways.

- If a Project would result in a substantial restriction in access to publicly or privately owned land, the impact would be significant.

5.3 County of San Diego

The following criterion was utilized to evaluate potential significant impacts, based on the *County of San Diego Guidelines for Determining Significance—Transportation and Traffic*, dated June 30, 2009.

Road Segments

Pursuant to the County's General Plan Public Facilities Element (PFE), new development must provide improvements or other measures to mitigate traffic impacts to avoid:

a. Reduction in Level of Service (LOS) below "C" for on-site Circulation Element roads;

b. Reduction in LOS below "D" for off-site and on-site abutting Circulation Element roads; and

c. "Significantly impacting congestion" on roads that operate at LOS "E" or "F". If impacts cannot be mitigated, the Project cannot be approved unless a statement of overriding findings is made pursuant to the State CEQA Guidelines. The PFE, however, does not include specific guidelines for determining the amount of additional traffic that would "significantly impact congestion" on such roads.

The County has created the following guidelines to evaluate likely traffic impacts of a proposed Project for road segments and intersections serving that Project site, for purposes of determining whether the development would "significantly impact congestion" on the referenced LOS E and F roads. The guidelines are summarized in ***Table 5–2***. The thresholds in *Table 5–2* are based upon average operating conditions on County roadways. It should be noted that these thresholds only establish general guidelines, and that the specific Project location must be taken into account in conducting an analysis of traffic impact from new development.

TABLE 5–2
MEASURES OF SIGNIFICANT PROJECT IMPACTS TO CONGESTION ON
CIRCULATION ELEMENT ROAD SEGMENTS
ALLOWABLE INCREASES ON CONGESTED ROAD SEGMENTS

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

General Notes:

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

***Off-Site Circulation Element Roads*—**PFE, Transportation, Policy 1.1 also addresses off-site Circulation Element roads. It states that "new development shall provide off-site improvements designed to contribute to the overall achievement of a Level of Service D on Circulation Element Roads." Implementation Measure 1.1.3 addressed projects that would significantly impact congestion on roads operating at LOS E or F. It states, "new development that would significantly impact congestion on roads operating at LOS E or F, either currently or as a result of the Project, will be denied unless improvements are scheduled to attain a LOS to D or better or appropriate mitigation is provided." The following significance guidelines define a method for evaluating whether or not increased traffic volumes generated or redistributed from a proposed Project will "significantly impact congestion" on County roads, operating at LOS E or F, either currently or as a result of the Project.

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

- The additional or redistributed ADT generated by the proposed Project will significantly increase congestion on a Circulation Element Road or State Highway currently operating at LOS E or LOS F, or will cause a Circulation Element Road or State Highway to operate at a LOS E or LOS F as a result of the proposed Project as identified in *Table 5–2*, or
- The additional or redistributed ADT generated by the proposed Project will cause a residential street to exceed its design capacity.

6.0 ANALYSIS OF EXISTING CONDITIONS

The analysis of existing conditions, where data collection was available, includes the assessment of the study area street segments and freeway segments.

6.1 Street Segments

Table 6–1 shows that under existing conditions, the study area street segments are calculated to currently operate at a LOS C or better on a daily basis except where noted below in bold typeface.

TABLE 6–1
EXISTING STREET SEGMENT OPERATIONS

Street Segment	Existing Capacity (LOS C/E) [a]	Existing	
		ADT [b]	LOS [c]
City of Chula Vista Roadways			
Telegraph Canyon Road			
I-805 to Oleander Ave	70,000	61,900	C
Heritage Road to La Media	50,000	40,300	B
Olympic Parkway			
I-805 to Brandywine Ave	50,000	47,000	C
Brandywine Ave to Heritage Rd/Paseo Ranchero	50,000	48,700	C
Heritage Rd/Paseo Ranchero to La Media	50,000	**50,500**	**D**
La Media Rd to SR-125	50,000	43,600	B
SR 125 to Eastlake Pkwy	70,000	40,500	A
Eastlake Pkwy to Hunte Pkwy	50,000	13,900	A
Birch Road			
La Media Rd to SR-125	40,000	10,200	A
Main Street			
I-805 to Brandywine Ave	50,000	26,400	A
Brandywine Ave to Maxwell St	50,000	18,700	A
Hunte Parkway			
Eastlake Pkwy to Exploration Falls Dr	50,000	700	A
Exploration Falls Dr to Olympic Pkwy	50,000	800	A
Heritage Road			
Main St to City Boundary	12,000	10,000	B
La Media Road			
Olympic Pkwy to Birch Rd	50,000	11,000	A
Birch Rd to Main St (Rock Mountain Rd)	50,000	1,000	A
Eastlake Parkway			
Olympic Pkwy to Birch Rd	40,000	9,200	A
Birch Rd to Hunte Pkwy	40,000	1,300	A

TABLE 6–1
EXISTING STREET SEGMENT OPERATIONS

Street Segment	Existing Capacity (LOS C/E) [a]	Existing	
		ADT [b]	LOS [c]
City of San Diego Roadways			
Heritage Road			
City Boundary to Avenida de las Vistas	15,000	9,800	C
Avenida de las Vistas to Datsun St/Otay Valley Rd	10,000	4,800	B
Datsun St/Otay Valley Rd to Otay Mesa Rd	10,000	**10,000**	**E**
La Media Road			
Lonestar Rd to Otay Mesa Rd	10,000	4,400	B
Otay Mesa Rd to Future SR-905	15,000	**16,500**	**F**
Otay Mesa Road			
Otay Mesa Rd to Corporate Center Dr	60,000	**67,000**	**F**
Corporate Center Dr to Heritage Rd	60,000	**67,500**	**F**
Heritage Rd to Britannia Blvd	60,000	**70,900**	**F**
Britannia Blvd to La Media Rd	60,000	**71,100**	**F**
La Media Rd to Piper Ranch Rd	45,000	**59,000**	**F**
Piper Ranch Rd to SR-125	45,000	**44,500**	**E**
SR-125 to Harvest Rd	40,000	9,700	A

Footnotes:

a. LOS "C" Capacity based on City of Chula Vista Roadway Classification Table. City and County of San Diego utilizes LOS "E" capacity thresholds. Chula Vista and San Diego Roadway Classification Tables are shown in *Appendix B.*

b. Average Daily Traffic.

c. Level of Service.

General Notes:

Bold typeface represents poor level of service.

6.2 Freeways

Table 6–2 summarizes the freeway mainline operations on Interstate 805 and State Route 905. As seen in *Table 6–2*, all segments are calculated to currently operate at acceptable levels of service.

TABLE 6–2
EXISTING FREEWAY MAINLINE OPERATIONS

Freeway Segment	Dir.	# of Lanes	Hourly Capacity [a]	ADT [b]	% K [c]		% D [c]		Truck Factor [d]	Peak Hour Volume [e]		V/C [f]		LOS	
					AM	PM	AM	PM		AM	PM	AM	PM	AM	PM
Interstate 805															
Olympic Pkwy/ Orange Ave to Main St/ Auto Park Dr	NB	4M+1A	9,200	151,000	0.0720	0.0801	0.5303	0.4534	0.931	6,193	5,890	0.673	0.640	C	C
	SB	4M+1A	9,200		0.0720	0.0801	0.4697	0.5466		5,485	7,101	0.596	0.772	B	C
Main St/ Auto Park Dr to Palm Ave	NB	4M+1A	9,200	149,000	0.0720	0.0801	0.5303	0.4534	0.931	6,111	5,812	0.664	0.632	C	C
	SB	4M+1A	9,200		0.0720	0.0801	0.4697	0.5466		5,412	7,007	0.588	0.762	B	C
Palm Ave to SR-905	NB	4M	8,000	113,000	0.0720	0.0801	0.5303	0.4534	0.931	4,634	4,408	0.579	0.551	B	B
	SB	4M+1A	9,200		0.0720	0.0801	0.4697	0.5466		4,105	5,314	0.446	0.578	B	B
State Route 905															
I-805 to Otay Mesa Road	EB	3M	6,000	60,000	0.0782	0.0864	0.6524	0.3353	0.935	3,274	1,859	0.546	0.310	B	B
	WB	3M	6,000		0.0782	0.0864	0.3476	0.6647		1,744	3,685	0.291	0.614	B	B

Footnotes:

a. Capacity calculated at 2000 vph per lane and 1200 vph per auxiliary lane
b. Existing ADT Volumes from CALTRANS 2008
c. Peak Hour Percentage (K) and Direction Split (D) from CALTRANS "2007 Traffic Volumes", June 2008
d. Truck Factor from "2007 Annual Average Daily Truck Traffic on the California State Highway System", Sept 2008
e. Peak Hour Volume = ((ADT)(K)(D)/Truck Factor)
f. V/C = ((ADT)(K)(D)/Truck Factor/Capacity)

LOS	V/C
A	<0.41
B	0.62
C	0.8
D	0.92
E	1
F(0)	1.25
F(1)	1.35
F(2)	1.45
F(3)	>1.46

General Notes:

Truck Factor data contained in *Appendix C.*

K and D percentages are contained in *Appendix C.*

M = Mainline

A = Auxiliary Lane

7.0 TRAFFIC MODELING PROCESS

In order to analyze the effects of the General Plan and General Development Plan Amendment, nine scenarios were established, as described in detail in Section 4.2. The SANDAG Series 11 "South Bay" transportation model was used for the Year 2030 to provide one base year model run and eight alternative model runs. Different land use and network forecasts were assumed for each of the alternatives as described previously in Section 2.2. This information was provided by the City of Chula Vista in direct coordination with SANDAG. Those alternatives identified as the "direct Project" and "cumulative Project", Alternatives 3 and 7, are further discussed in this section.

7.1 Trip Generation

The trip generation for the adopted General Plan and the Project alternatives was calculated based on the proposed changes in land use to the existing Chula Vista General Plan, University & RTP, and City and County of San Diego General Plans. ***Table 7–1*** shows the land use assumptions used for each of these scenarios.

TABLE 7–1
YEAR 2030 LAND USE

Scenario	General Plan Land Use	University and RTP Land Use	City of San Diego Otay Mesa Community Plan Alt 3B + County of San Diego GP Update Land Use
Alternative 1 (Adopted General Plan)	Adopted	Adopted	Adopted
Alternative 3 (Direct)	Proposed Project (OLC)	Proposed	Adopted
Alternative 7 (Cumulative)	Proposed Project (OLC) & JPB	Proposed	Proposed

Source:
City of Chula Vista SANDAG Modeling List, Nov. 30, 2009

General Notes:
A more detailed list of Project land uses is shown in *Table 2–1* and the complete list of land use inputs used in calculating the trip generation is included in *Appendix D.*

7.2 Trip Capture

The SANDAG model accounts for multi-modal means of transport, public transit, and mixed-use reductions when calculating traffic volumes. For instance, the model accounts for the synergy between the various uses and will match trips between nearby uses (such as residential and retail). This results in many trips remaining internal to the GPA and GDPA area and therefore, limits trips to the regional network.

The results output by the SANDAG model accounting for trip generation and trip capture calculated the Project (Villages 8 West, 9 and the RTP) to generate 113,073 total trips as shown in ***Table 7–2***.

In addition, it should be noted that there is a Bus Rapid Transit route planned through Village 9, which is included in the traffic model, and Village 8 West is transit ready as required by the General Plan.

TABLE 7–2
YEAR 2030 PROJECT TRIP GENERATION

Project Area	Alternative 3
	Volume (ADT)
Village 8 West	43,564
Village 9	56,123
Regional Technology Park	13,386
Total Trips	**113,073**

Source:
City of Chula Vista SANDAG Model, Nov. 30, 2009

General Notes:

1. Volume represents Average Daily Traffic volume generated by the SANDAG model.
2. A more detailed list of Project land uses is shown in *Table 2–1* and the complete list of land use inputs used in calculating the trip generation is included in Appendix D.
3. Alternative 7 contains no change in the Project trip generation.

Appendix D contains the Land Use Inventory Tables used in the SANDAG models.

7.3 Year 2030 Roadway Network

For the purpose of the Year 2030 analysis, all roadway segments were assumed to be built out to their classifications as identified in the City of Chula Vista General Plan, County of San Diego General Plan, and City of San Diego General Plan. The exceptions are the proposed specific changes listed below, as described in Section 2.2.1.

1. Eliminate southerly extension of La Media Road crossing the Otay River Valley.
2. Reclassify a portion of La Media Road from the southern portion of Village 8 extending south to the Active Recreation area from a six lane arterial to "Other Roads".
3. Change name of Rock Mountain Road to Main Street from the point of existing Heritage Road easterly to Eastlake Parkway.
4. Reclassify Main Street from a Town Center Arterial (Couplet) easterly of SR-125 to a Six-Lane Gateway.

5. Reclassify the Main Street/La Media Road Couplet from a Six-Lane Town Center Arterial (Couplet) to a Four-Lane Town Center Arterial (Couplet) within Village 8 West.
6. Reclassify and realign the segment of La Media Road from the Town Center Arterials at the Main Street/La Media Road Couplet south easterly to SR-125 as a Four-Lane Major.
7. Provide that Urban LOS D is acceptable for Town Center Arterials. A more detailed discussion of Town Center Arterial level of service is included in Section 910.0.
8. Eliminate requirement for park and ride facilities at the Village 9/University Bus Rapid Transit (BRT) stop.
9. Clarify that the mid-arterial SR-125 crossing between Villages 8 East and 9 is pedestrian only.

Table 7–3 summarizes the network assumptions for each of the analyzed scenarios.

TABLE 7–3
YEAR 2030 ROADWAY NETWORK

Scenario	Circulation Element	La Media Road Bridge	SR-125
Alternative 1 (Adopted General Plan)	Adopted	In	Tollway
Alternative 3 (Direct)	Proposed	Out	Tollway
Alternative 7 (Cumulative)	Proposed	Out	Tollway

Source:
City of Chula Vista SANDAG Modeling List, Nov. 30, 2009

In addition, the number of freeway mainline lanes, auxiliary lanes, and managed lanes were taken from the network assumptions used in the SANDAG South Bay model. Changes proposed to the freeway network for future conditions are shown below in ***Table 7–4***:

TABLE 7–4
YEAR 2030 FREEWAY CONDITIONS

Freeway Segment	Dir.	# of Lanes	
		Existing	Year 2030
Interstate 805			
Olympic Pkwy/Orange Ave to Main St/Auto Park Dr	NB	4M+1A	4M+1A+2ML
	SB	4M+1A	4M+1A+2ML
Main St/Auto Park Dr to Palm Ave	NB	4M+1A	4M+1A+2ML
	SB	4M+1A	4M+~~1~~2ML
Palm Ave to SR-905	NB	4M	4M+1A+2ML
	SB	4M+1A	4M+1A+2ML
State Route 125			
Olympic Pkwy to SR-905	NB	2M	2M
	SB	2M	2M
State Route 905			
I-805 to Ocean View Hills Pkwy	EB	3M	4M+1A
	WB	3M	4M+1A
Ocean View Hills Pkwy to Heritage Rd	EB	3M	4M
	WB	3M	4M+1A
Heritage Rd to Britannia Blvd	EB	3M	4M+1A
	WB	3M	4M+1A
Britannia Blvd to La Media Rd	EB	3M	4M+1A
	WB	3M	4M
La Media Rd to SR-125	EB	3M	4M
	WB	2M	4M

General Notes:

M = Mainline
A = Auxiliary Lane
ML = Managed Lanes

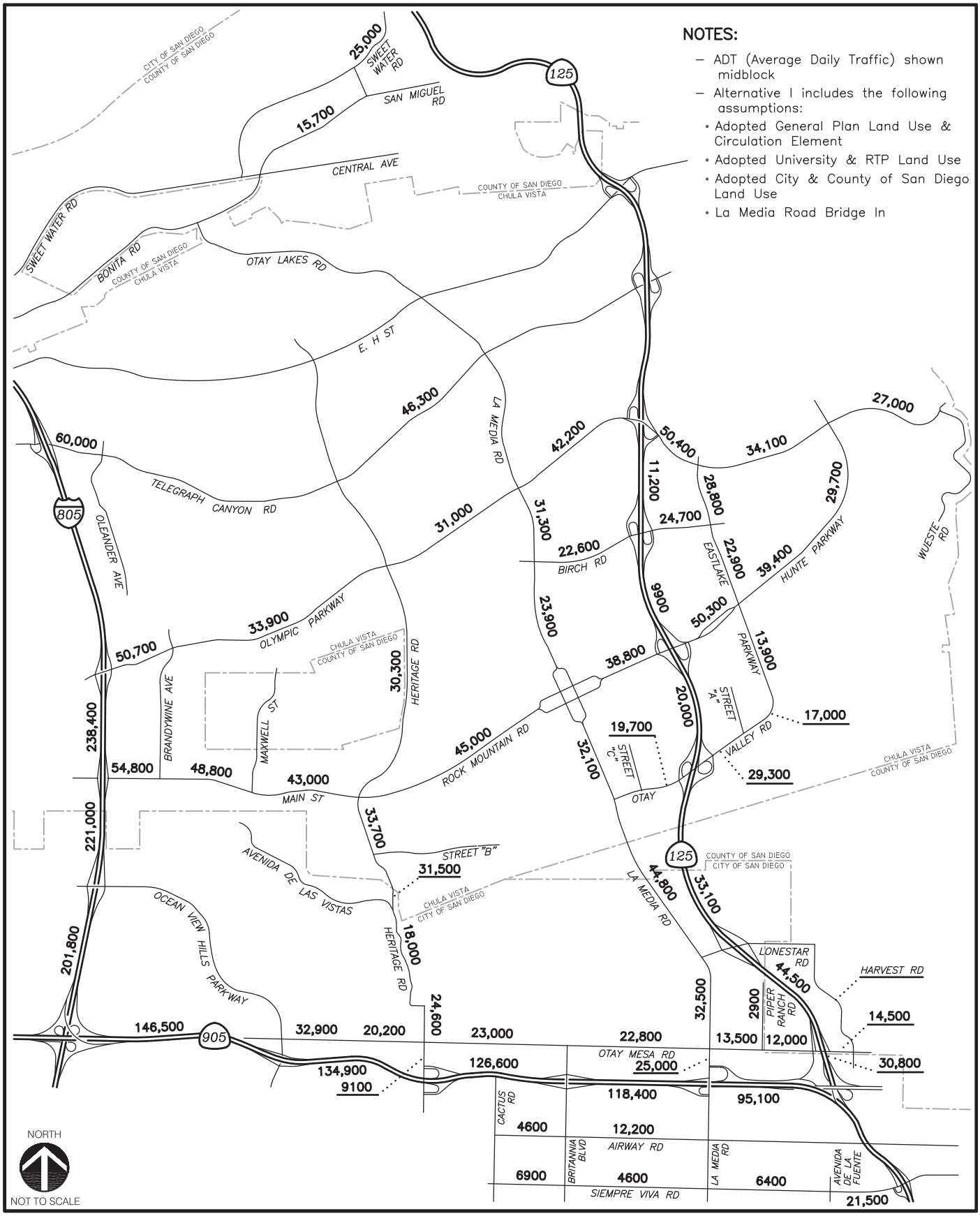
7.4 Year 2030 Forecast Volumes

All of the traffic volumes for the adopted General Plan conditions and Project alternatives were obtained from the SANDAG South Bay model. ***Figures 7–1***, ***7–2*** and ***7–3*** depict the Year 2030 average daily traffic volumes for Alternatives 1, 3 and 7, respectively.

Minor adjustments were made to reflect the most accurate possible travel patterns within the study area. Street segments affected by these adjustments are those in close proximity to Interstate 805 along Main Street and Olympic Parkway. The initial results from the traffic model indicated very high volumes utilizing the Main Street interchange at I-805 while significantly less vehicles were assumed to use Olympic Parkway, a parallel roadway less than one mile north of Main Street, which would be forecasted to operate at LOS B. It would not be practical to assume drivers would utilize a roadway operating at LOS F conditions when a parallel roadway located less than one mile away operates at LOS B conditions. It was therefore agreed upon with City Staff to shift 10,000 vehicle trips from Main Street to Olympic Parkway between I-805 and Heritage Road.

Additionally, it should be noted that some roadways experience either no change in daily trips or a decrease in daily trips under Alternatives 3 and 7 as compared to Alternative 1. This occurrence can partially be attributed to the proposed deletion of the La Media Road bridge. Due to the removal of this bridge, vehicles which would otherwise have used the bridge would be rerouted to parallel streets. This therefore results in no change or a decrease in volumes on roadways such as portions of Olympic Parkway, La Media Road, Main Street (Rock Mountain Road), Hunte Parkway, and Otay Mesa Road. Concurrently, it would lead to an increase in volumes along alternative roadways connecting Chula Vista to the City of San Diego, such as Heritage Road and SR-125.

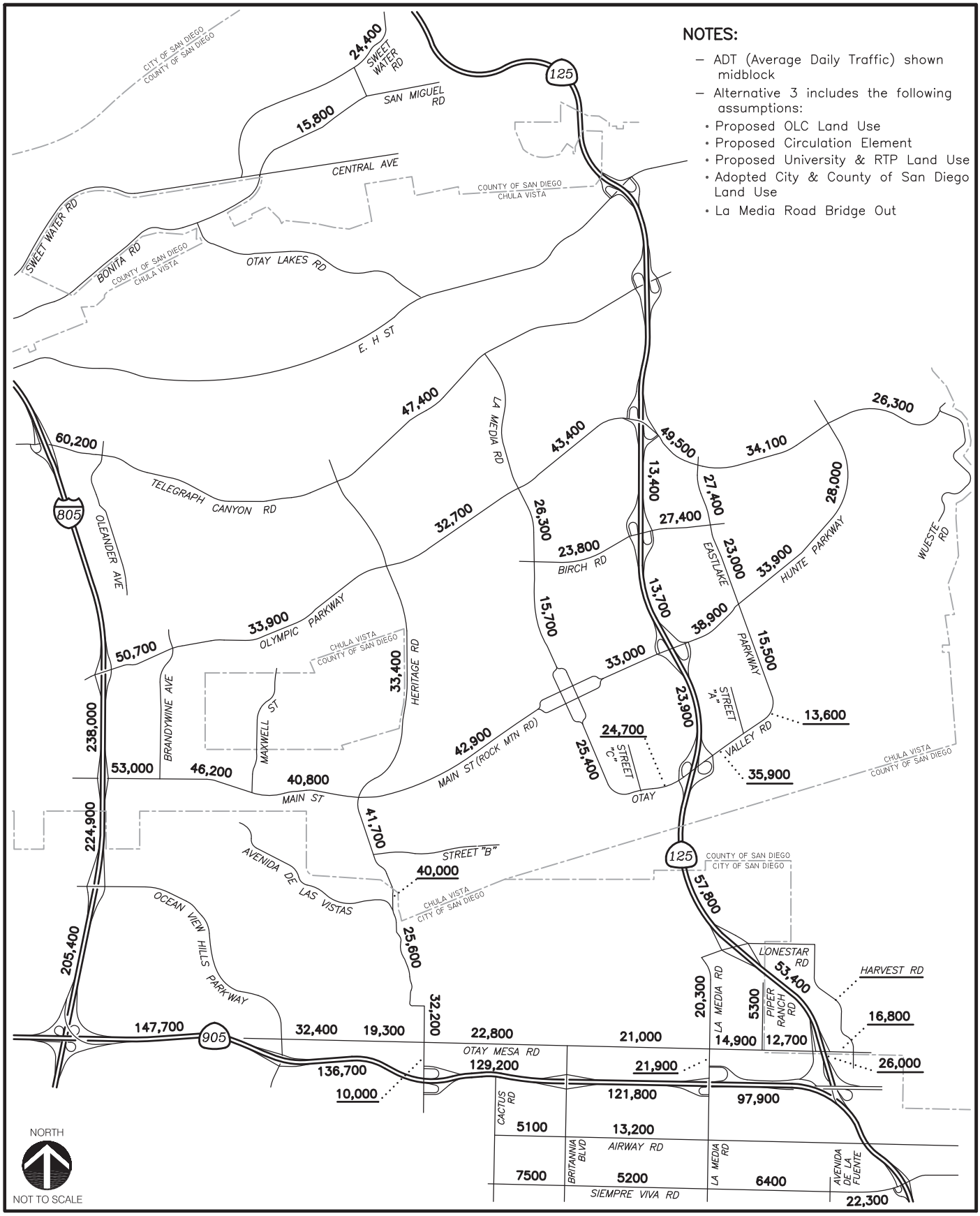
Appendix E contains the SANDAG model traffic volumes plots and the post-modeling reports for Alternatives 1, 3 and 7.



REV. 10/20/2011
N:\1885\Figures\LLG1885 FIG 7-1

Figure 7-1

Year 2030 Traffic Volumes
Alternative 1 (Adopted General Plan)

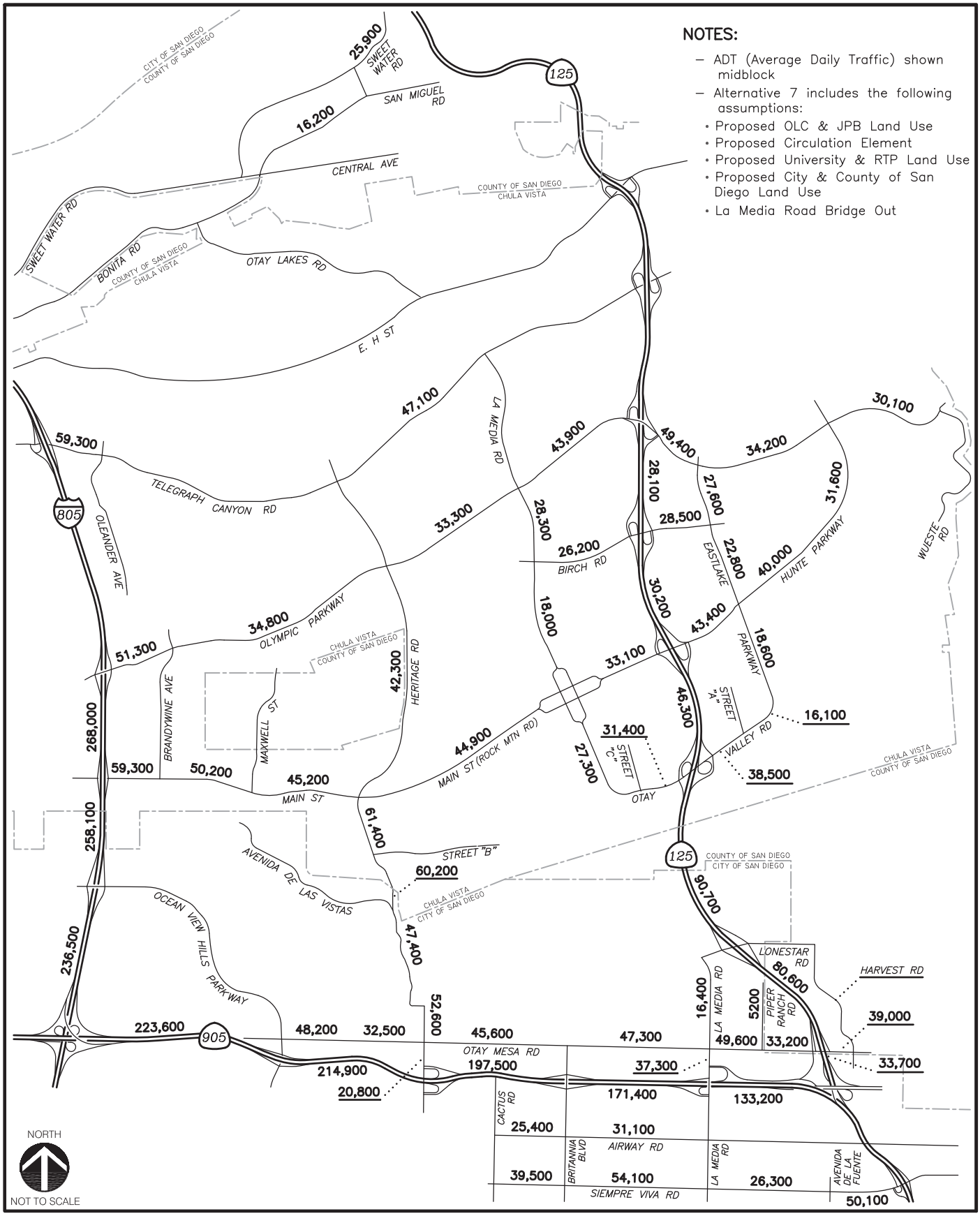


REV. 10/20/2011
N:\1885\Figures\LLG1885 FIG 7–2

LINSCOTT LAW & GREENSPAN engineers

Figure 7-2

Year 2030 Traffic Volumes
Alternative 3



REV. 10/20/2011
N:\1885\Figures\LLG1885 FIG 7–3

Figure 7-3

Year 2030 Traffic Volumes
Alternative 7

8.0 YEAR 2030 DIRECT & CUMULATIVE ANALYSIS

In order to calculate potential direct and cumulative impacts Alternatives 3 and 7 were analyzed against Alternative 1. Alternative 1 consists of the 2005 GPU adopted land uses and network assumptions throughout the Project Area with the exception of the deferral area which continues to use 2001 adopted General Plan land uses. This translates to mean that Year 2030 build out under Alternative 1 would use the 2005 GPU adopted land uses and network throughout the Project Area, with the exception of the deferral area which uses 2001 adopted General Plan land uses. Alternative 3 measures the ***direct*** impacts of the Project against the adopted General Plan (Alternative 1). The Project itself consists of the proposed network changes listed in Section 2.2.1 and the proposed Project land uses. Alternative 7 measures the ***cumulative*** impacts of the Project against the adopted General Plan. In addition to the Project network conditions and land uses, Alternative 7 includes the remaining land uses within the Project Area. These include those identified in the JPB LOA, the City of San Diego Otay Mesa Community Plan Update, and County of San Diego General Plan Updated land uses, as reasonably foreseeable projects. A level of service analysis was not conducted for the remaining six alternatives.

8.1 Year 2030 Alternative 1 – Adopted General Plan

8.1.1 *Segment Operations*

Table 8–1 shows that under the adopted General Plan land uses and network assumptions used in Alternative 1, the following street segments are calculated to operate at a LOS D or worse conditions in the City of Chula Vista:

- Olympic Parkway between I-805 NB Ramps to Brandywine Avenue – LOS D
- Main Street between I-805 to Brandywine Avenue – LOS D
- Main Street (Rock Mountain Road) between SR-125 and Eastlake Parkway – LOS D

All street segments in the City and County of San Diego are calculated to operate at acceptable LOS D or better conditions.

Figure 8–1 graphically shows the roadway segments level of service for Alternative 1.

8.1.2 *Freeway Mainline Operations*

Freeway segments were analyzed during the AM and PM peak hours based on the methodologies developed by CALTRANS District 11. The procedure involves comparing the peak hour volume of the mainline segment to the theoretical capacity of the roadway (V/C). The procedure for calculating freeway LOS involves the estimation of volume to capacity (V/C) ratio using the following equation:

$$V/C = \frac{((AADT \times Peak\ Hour\ Percent \times Directional\ Factor)/(Truck\ Terrain\ Factor))}{Lane\ Capacity}$$

A detailed discussion of the freeway analysis methodology is contained in Section 4.5 of the report. ***Table 8–3*** contains the freeway factors used to analyze I-805, SR-125 and SR-905. It should be

noted that the SANDAG South Bay model includes the addition of managed lanes on Interstate 805 within the study area.

Table 8–4 shows the freeway mainline operations on I-805, SR-125 and SR-905 for Alternative 1 conditions. As shown in *Table 8–4*, for the Year 2030 with the adopted General Plan land uses and network assumptions used in Alternative 1, the following locations operate at LOS E or worse conditions:

Interstate 805

- PM Southbound: Olympic Parkway/Orange Avenue to Main Street/Auto Park Drive
- PM Southbound: Main Street/Auto Park Drive to Palm Avenue

State Route 905

- PM Westbound: I-805 to Ocean View Hills Parkway
- AM Eastbound: Ocean View Hills Parkway to Heritage Road

8.2 Year 2030 Alternative 3 – Direct Project

8.2.1 *Segment Operations*

Table 8–1 shows that for the Year 2030 with the proposed GPA and GDPA land uses and network assumptions used in Alternative 3 (direct Project), the following street segments are calculated to operate at a LOS D or worse conditions in the City of Chula Vista:

- Olympic Parkway between I-805 NB Ramps to Brandywine Avenue – LOS D
- Main Street between I-805 to Brandywine Avenue – LOS D
- Otay Valley Road between SR-125 and Street "A" – LOS E

All street segments in the City and County of San Diego are calculated to operate at acceptable LOS D or better conditions.

Figure 8–2 graphically shows the roadway segments level of service for Alternative 3.

8.2.2 *Freeway Mainline Operations*

Table 8–4 shows the freeway mainline operations on I-805, SR-125 and SR-905 for the Year 2030 Alternative 3 conditions. As shown in *Table 8–2*, for the Year 2030 with the proposed GPA and GDPA land uses and network assumptions used in Alternative 3 (direct Project), the following locations operate at LOS E or worse conditions:

Interstate 805

- PM Southbound: Olympic Parkway/Orange Avenue to Main Street/Auto Park Drive
- PM Southbound: Main Street/Auto Park Drive to Palm Avenue

State Route 905

- PM Westbound: I-805 to Ocean View Hills Parkway
- AM Eastbound: Ocean View Hills Parkway to Heritage Road
- PM Westbound: Britannia Boulevard to La Media Road

8.3 Year 2030 Alternative 7 – Cumulative Project

8.3.1 *Segment Operations*

Table 8–2 shows that for the Year 2030 with the remaining Project Area land uses (including JPB LOA densities), and City and County of San Diego proposed land uses in addition to the proposed Project, the following street segments are calculated to operate at LOS D or worse conditions in the City of Chula Vista:

- Olympic Parkway between I-805 NB Ramps to Brandywine Avenue – LOS D
- Olympic Parkway between Hunte Parkway and Wueste Road – LOS D
- Main Street between I-805 to Brandywine Avenue – LOS E
- Main Street between Brandywine Avenue and Maxwell Street – LOS D
- Otay Valley Road between La Media Road and SR-125 – LOS D
- Otay Valley Road between SR-125 and Street "A" – LOS F
- Heritage Road between Main Street and the City Boundary – LOS E

In the City of San Diego, the following street segments are calculated to operate at a LOS E or F conditions:

- Heritage Road between the City Boundary and Avenida de las Vistas – LOS F
- Heritage Road between Avenida de las Vistas and Datsun Street/Otay Valley Road – LOS E
- Heritage Road between Datsun Street/Otay Valley Road and Otay Mesa Road – LOS F

Both street segments in the County of San Diego are calculated to operate at acceptable LOS D or better conditions.

Figure 8–3 graphically shows the roadway segments level of service for Alternative 7.

8.3.2 *Freeway Mainline Operations*

Table 8–5 shows the freeway mainline operations on I-805, SR-125 and SR-905 for the Year 2030 cumulative conditions. As shown in *Table 8–5*, for the Year 2030 with the remaining Project Area land uses and City and County of San Diego proposed land uses in addition to the proposed Project, the following locations operate at LOS E or worse conditions:

Interstate 805

- AM Northbound: Olympic Parkway/Orange Avenue to Main Street/Auto Park Drive
- PM Southbound: Olympic Parkway/Orange Avenue to Main Street/Auto Park Drive
- PM Southbound: Main Street/Auto Park Drive to Palm Avenue
- PM Southbound: Palm Avenue to SR-905

State Route 125

- AM Northbound: Otay Valley Road to Lonestar Road
- PM Southbound: Otay Valley Road to Lonestar Road
- PM Southbound: Lonestar Road to Otay Mesa Road

State Route 905

- AM Eastbound: I-805 to Ocean View Hills Parkway
- PM Westbound: I-805 to Ocean View Hills Parkway
- AM Eastbound: Ocean View Hills Parkway to Heritage Road
- PM Westbound: Ocean View Hills Parkway to Heritage Road
- AM Eastbound: Heritage Road to Britannia Boulevard
- PM Westbound: Heritage Road to Britannia Boulevard
- AM Eastbound: Britannia Boulevard to La Media Road
- PM Westbound: Britannia Boulevard to La Media Road
- PM Westbound: La Media Road to SR-125

A summary of potential significant direct and cumulative impacts is discussed later on in this report.

TABLE 8–1
YEAR 2030 STREET SEGMENT OPERATIONS
DIRECT IMPACT DETERMINATION
ALTERNATIVE 1 VS. 3

City of Chula Vista Roadways	Adopted LOS "C" Capacity [a]	Alternative 1		Proposed LOS "C" Capacity [a]	Alternative 3		Measure of Significance	
		ADT [b]	LOS [c]		ADT	LOS	Direct Project Contributes "x" Amount Toward Traffic Volume	Direct Project Contributes "x" % Toward Traffic Volume
Telegraph Canyon Road								
I-805 to Oleander Ave	70,000	60,000	B	NC	60,200	B	200	0.3%
Heritage Road to La Media	50,000	46,300	C	NC	47,400	C	1,100	2.3%
Olympic Parkway								
I-805 to Brandywine Ave	50,000	**50,700**	**D**	NC	**50,700**	**D**	0	0.0%
Brandywine Ave to Heritage Rd/Paseo Ranchero	50,000	33,900	A	NC	33,900	A	0	0.0%
Heritage Rd/Paseo Ranchero to La Media	50,000	31,000	A	NC	32,700	A	1,700	5.2%
La Media Rd to SR-125	50,000	42,200	B	NC	43,400	B	1,200	2.8%
SR 125 to Eastlake Pkwy	70,000	50,400	A	NC	49,500	A	-900	-1.8%
Eastlake Pkwy to Hunte Pkwy	50,000	34,100	A	NC	34,100	A	0	0.0%
Hunte Pkwy to Wueste Rd	30,000	27,000	C	NC	26,300	B	-700	-2.7%
Birch Road								
La Media Rd to SR-125	40,000	22,600	A	NC	23,800	A	1,200	5.0%
SR-125 to Eastlake Pkwy	50,000	24,700	A	NC	27,400	A	2,700	9.9%
Main Street								
I-805 to Brandywine Ave	50,000	**54,800**	**D**	NC	**53,000**	**D**	-1,800	-3.4%
Brandywine Ave to Maxwell St	50,000	48,800	C	NC	46,200	C	-2,600	-5.6%
Maxwell S to Heritage Rd	50,000	43,000	B	NC	40,800	B	-2,200	-5.4%
Main Street (Rock Mountain Road)								
Heritage Rd to Main St/La Media Rd Couplet	50,000	45,000	C	NC	42,900	B	-2,100	-4.9%
Main St/La Media Rd Couplet to SR-125	50,000	38,800	B	NC	33,000	A	-5,800	-17.6%
SR-125 to Eastlake Pkwy	50,000	**50,300**	**D**	61,200 [d]	38,900	A	-11,400	-29.3%
Hunte Parkway								
Eastlake Pkwy to Exploration Falls Dr	50,000	39,400	B	NC	33,900	A	-5,500	-16.2%
Exploration Falls Dr to Olympic Pkwy	50,000	29,700	A	NC	28,000	A	-1,700	-6.1%

TABLE 8–1
YEAR 2030 STREET SEGMENT OPERATIONS
DIRECT IMPACT DETERMINATION
ALTERNATIVE 1 VS. 3

City of Chula Vista Roadways	Adopted LOS "C" Capacity [a]	Alternative 1		Proposed LOS "C" Capacity [a]	Alternative 3		Measure of Significance	
		ADT [b]	LOS [c]		ADT	LOS	Direct Project Contributes "x" Amount Toward Traffic Volume	Direct Project Contributes "x" % Toward Traffic Volume
Otay Valley Road								
La Media Rd to SR-125	30,000	19,700	A	NC	24,700	B	5,000	20.2%
SR-125 to Street "A"	30,000	29,300	C	NC	**35,900**	**E**	**6,600**	**18.4%**
Street "A" to Eastlake Pkwy	30,000	17,000	A	NC	13,600	A	1,600	8.6%
Heritage Road								
Olympic Pkwy to Main St (Rock Mountain Rd)	50,000	30,300	A	NC	33,400	A	3,100	9.3%
Main St (Rock Mountain Rd) to City Boundary	50,000	33,700	A	NC	41,700	B	8,000	19.2%
La Media Road								
Olympic Pkwy to Birch Rd	50,000	31,300	A	NC	26,300	A	-5,000	-19.0%
Birch Rd to Main St/La Media Rd Couplet	50,000	23,900	A	NC	15,700	A	-8,200	-52.2%
Main St/La Media Rd Couplet	50,000	32,100	A	30,000	25,400	B	-6,700	-26.4%
Main St/La Media Rd Couplet to Otay Valley Rd	50,000	32,100	A	30,000	25,400	B	-6,700	-26.4%
Otay Valley Rd to Lonestar Rd	50,000	44,800	C	NC	DNE	DNE	—	—
Eastlake Parkway								
Olympic Pkwy to Birch Rd	40,000	28,800	A	NC	27,400	A	-1,400	-5.1%
Birch Rd to Hunte Pkwy	40,000	22,900	A	NC	23,000	A	100	0.4%
Hunte Pkwy to Otay Valley Rd	30,000	13,900	A	NC	15,500	A	1,600	10.3%

TABLE 8–1
YEAR 2030 STREET SEGMENT OPERATIONS
DIRECT IMPACT DETERMINATION
ALTERNATIVE 1 VS. 3

City of San Diego Roadways	Adopted LOS "E" Capacity [a]	Alternative 1			Proposed LOS "E" Capacity [a]	Alternative 3			Measure of Significance
		ADT [b]	LOS [c]	V/C [e]		ADT	LOS	V/C	Δ V/C [f]
Heritage Road									
City Boundary to Avenida de las Vistas	50,000	31,500	B	0.53	NC	40,000	C	0.67	0.14
Avenida de las Vistas to Datsun St/Otay Valley Rd	50,000	18,000	A	0.36	NC	25,600	B	0.51	0.15
Datsun St/Otay Valley Rd to Otay Mesa Rd	50,000	24,600	B	0.49	NC	32,200	C	0.64	0.15
Otay Mesa Rd to SR-905	50,000	9,100	A	0.18	NC	10,000	A	0.20	0.02
La Media Road									
Lonestar Rd to Otay Mesa Rd	60,000	32,500	B	0.54	NC	20,300	A	0.34	(0.20)
Otay Mesa Rd to SR-905	60,000	25,000	A	0.42	NC	21,900	A	0.37	(0.05)
Otay Mesa Road									
Otay Mesa Rd to Corporate Center Dr	60,000	32,900	B	0.55	NC	32,400	B	0.65	0.10
Corporate Center Dr to Heritage Rd	60,000	20,200	A	0.34	NC	19,300	A	0.39	0.05
Heritage Rd to Britannia Blvd	60,000	23,000	A	0.38	NC	22,800	A	0.46	0.07
Britannia Blvd to La Media Rd	60,000	22,800	A	0.38	NC	21,000	A	0.42	0.04
La Media Rd to Piper Ranch Rd	80,000	13,500	A	0.17	NC	14,900	A	0.25	0.08
Piper Ranch Rd to SR-125	50,000	12,000	A	0.24	NC	12,700	A	0.32	0.08
SR-125 to Harvest Rd	50,000	14,500	A	0.29	NC	16,800	A	0.42	0.13
Airway Road									
Cactus Rd to Britannia Blvd	40,000	4,600	A	0.12	NC	5,100	A	0.13	0.01
Britannia Blvd to La Media Rd	40,000	12,200	A	0.31	NC	13,200	A	0.33	0.03
Siempre Viva Road									
Cactus Rd to Britannia Blvd	60,000	6,900	A	0.12	NC	7,500	A	0.13	0.01
Britannia Blvd to La Media Rd	60,000	4,600	A	0.08	NC	5,200	A	0.09	0.01
La Media Rd to Avenida de la Fuente	60,000	6,400	A	0.11	NC	6,400	A	0.11	0.00
Avenida de la Fuente to SR-905	60,000	21,500	A	0.36	NC	22,300	A	0.37	0.01
Piper Ranch Road									
Lonestar Rd to Otay Mesa Rd	30,000	2,900	A	0.10	NC	5,300	A	0.18	0.08

TABLE 8–1
YEAR 2030 STREET SEGMENT OPERATIONS
DIRECT IMPACT DETERMINATION
ALTERNATIVE 1 VS. 3

County of San Diego Roadways	Adopted LOS "E" Capacity [a]	Alternative 1		Proposed LOS "E" Capacity [a]	Alternative 3		Measure of Significance
		ADT [b]	LOS [c]		ADT	LOS	Direct Project Δ in Volume
Bonita Road							
Central Ave to San Miguel Rd	37,000	15,700	B	NC	15,800	B	100
Sweetwater Road							
Bonita Rd to Park Dr	37,000	25,000	C	NC	24,400	B	(600)

Footnotes:

a. LOS "C" Capacity based on City of Chula Vista Roadway Classification Table. City and County of San Diego utilizes LOS "E" capacity thresholds. Chula Vista and San Diego Roadway Classification Tables are shown in *Appendix B.*

b. Average Daily Traffic.

c. Level of Service.

d. Under Adopted General Plan, 6-Lane Gateway allows for LOS D operations.

e. V/C = Volume to Capacity Ratio.

f. Δ V/C = Increase in V/C due to Project.

g. A significant direct impact is calculated at this location due to the downsize of the Main Street/La Media Road couplet from 6 lanes to 4 lanes.

General Notes:

Bold typeface represents unacceptable level of service based on appropriate jurisdiction's significance criteria.

Shading represents potential significant impact.

DNE = Does not exist

NC = No Change in roadway capacity.

TABLE 8–2
YEAR 2030 STREET SEGMENT OPERATIONS
CUMULATIVE IMPACT DETERMINATION
ALTERNATIVE 1 VS. 7

City of Chula Vista Roadways	Adopted LOS "C" Capacity [a]	Alternative 1		Proposed LOS "C" Capacity [a]	Alternative 7		Measure of Significance	
		ADT [b]	LOS [c]		ADT	LOS	Cumulative Project Contributes "x" Amount Toward Traffic Volume	Cumulative Project Contributes "x" % Toward Traffic Volume
Telegraph Canyon Road								
I-805 to Oleander Ave	70,000	60,000	B	NC	59,300	B	-700	-1.2%
Heritage Road to La Media	50,000	46,300	C	NC	47,100	C	800	1.7%
Olympic Parkway								
I-805 to Brandywine Ave	50,000	**50,700**	**D**	NC	**51,300**	**D**	**600**	**1.2%**
Brandywine Ave to Heritage Rd/Paseo Ranchero	50,000	33,900	A	NC	34,800	A	900	2.6%
Heritage Rd/Paseo Ranchero to La Media	50,000	31,000	A	NC	33,300	A	2,300	6.9%
La Media Rd to SR-125	50,000	42,200	B	NC	43,900	C	1,700	3.9%
SR 125 to Eastlake Pkwy	70,000	50,400	A	NC	49,400	A	-1,000	-2.0%
Eastlake Pkwy to Hunte Pkwy	50,000	34,100	A	NC	34,200	A	100	0.3%
Hunte Pkwy to Wueste Rd	30,000	27,000	C	NC	**30,100**	**D**	**3,100**	**10.3%**
Birch Road								
La Media Rd to SR-125	40,000	22,600	A	NC	26,200	A	3,600	13.7%
SR-125 to Eastlake Pkwy	50,000	24,700	A	NC	28,500	A	3,800	13.3%
Main Street								
I-805 to Brandywine Ave	50,000	**54,800**	**D**	NC	**59,300**	**E**	**4,500**	**7.6%**
Brandywine Ave to Maxwell St	50,000	48,800	C	NC	**50,200**	**D**	**1,400**	**2.8%**
Maxwell S to Heritage Rd	50,000	43,000	B	NC	45,200	C	2,200	4.9%
Main Street (Rock Mountain Road)								
Heritage Rd to Main St/La Media Rd Couplet	50,000	45,000	C	NC	44,900	C	-100	-0.2%
Main St/La Media Rd Couplet to SR-125	50,000	38,800	B	NC	33,100	A	-5,700	-17.2%
SR-125 to Eastlake Pkwy	50,000	**50,300**	**D**	61,200 [d]	43,400	B	-6,900	-15.9%
Hunte Parkway								
Eastlake Pkwy to Exploration Falls Dr	50,000	39,400	B	NC	40,000	B	600	1.5%
Exploration Falls Dr to Olympic Pkwy	50,000	29,700	A	NC	31,600	A	1,900	6.0%

TABLE 8–2
YEAR 2030 STREET SEGMENT OPERATIONS
CUMULATIVE IMPACT DETERMINATION
ALTERNATIVE 1 VS. 7

City of Chula Vista Roadways	Adopted LOS "C" Capacity [a]	Alternative 1		Proposed LOS "C" Capacity [a]	Alternative 7		Measure of Significance	
		ADT [b]	LOS [c]		ADT	LOS	Cumulative Project Contributes "x" Amount Toward Traffic Volume	Cumulative Project Contributes "x" % Toward Traffic Volume
Otay Valley Road								
La Media Rd to SR-125	30,000	19,700	A	NC	**31,400**	**D**	**11,700**	**37.3%**
SR-125 to Street "A"	30,000	29,300	C	NC	**38,500**	**F**	**9,200**	**23.9%**
Street "A" to Eastlake Pkwy	30,000	17,000	A	NC	16,100	A	4,100	19.4%
Heritage Road								
Olympic Pkwy to Main St (Rock Mountain Rd)	50,000	30,300	A	NC	42,300	B	12,000	28.4%
Main St (Rock Mountain Rd) to City Boundary	50,000	33,700	A	NC	**61,400**	**E**	**27,700**	**45.1%**
La Media Road								
Olympic Pkwy to Birch Rd	50,000	31,300	A	NC	28,300	A	-3,000	-10.6%
Birch Rd to Main St/La Media Rd Couplet	50,000	23,900	A	NC	18,000	A	-5,900	-32.8%
Main St/La Media Rd Couplet	50,000	32,100	A	30,000	27,200	C	-4,900	-18.0%
Main St/La Media Rd Couplet to Otay Valley Rd	50,000	32,100	A	30,000	27,300	C	-4,800	-17.6%
Otay Valley Rd to Lonestar Rd	50,000	44,800	C	NC	DNE	DNE	—	—
Eastlake Parkway								
Olympic Pkwy to Birch Rd	40,000	28,800	A	NC	27,600	A	-1,200	-4.3%
Birch Rd to Hunte Pkwy	40,000	22,900	A	NC	22,800	A	-100	-0.4%
Hunte Pkwy to Otay Valley Rd	30,000	13,900	A	NC	18,600	A	4,700	25.3%

TABLE 8–2
YEAR 2030 STREET SEGMENT OPERATIONS
CUMULATIVE IMPACT DETERMINATION
ALTERNATIVE 1 VS. 7

City of San Diego Roadways	Adopted LOS "E" Capacity [a]	Alternative 1			Proposed LOS "E" Capacity [a]	Alternative 7			Measure of Significance
		ADT [b]	LOS [c]	V/C [e]		ADT	LOS	V/C	Δ V/C [f]
Heritage Road									
City Boundary to Avenida de las Vistas	50,000	31,500	B	0.53	NC	**60,200**	**F**	**1.00**	**0.48**
Avenida de las Vistas to Datsun St/Otay Valley Rd	50,000	18,000	A	0.36	NC	**47,400**	**E**	**0.95**	**0.59**
Datsun St/Otay Valley Rd to Otay Mesa Rd	50,000	24,600	B	0.49	NC	**52,600**	**F**	**1.05**	**0.56**
Otay Mesa Rd to SR-905	50,000	9,100	A	0.18	NC	20,800	B	0.42	0.23
La Media Road									
Lonestar Rd to Otay Mesa Rd	60,000	32,500	B	0.54	NC	16,400	A	0.27	(0.27)
Otay Mesa Rd to SR-905	60,000	25,000	A	0.42	NC	37,300	C	0.62	0.21
Otay Mesa Road									
Otay Mesa Rd to Corporate Center Dr	60,000	32,900	B	0.55	NC	48,200	C	0.96	0.42
Corporate Center Dr to Heritage Rd	60,000	20,200	A	0.34	NC	32,500	B	0.65	0.31
Heritage Rd to Britannia Blvd	60,000	23,000	A	0.38	NC	45,600	C	0.91	0.53
Britannia Blvd to La Media Rd	60,000	22,800	A	0.38	NC	47,300	C	0.95	0.57
La Media Rd to Piper Ranch Rd	80,000	13,500	A	0.17	NC	49,600	C	0.83	0.66
Piper Ranch Rd to SR-125	50,000	12,000	A	0.24	NC	33,200	C	0.83	0.59
SR-125 to Harvest Rd	50,000	14,500	A	0.29	NC	39,000	C	0.98	0.69
Airway Road									
Cactus Rd to Britannia Blvd	40,000	4,600	A	0.12	NC	25,400	C	0.64	0.52
Britannia Blvd to La Media Rd	40,000	12,200	A	0.31	NC	31,100	D	0.78	0.47
Siempre Viva Road									
Cactus Rd to Britannia Blvd	60,000	6,900	A	0.12	NC	39,500	C	0.66	0.54
Britannia Blvd to La Media Rd	60,000	4,600	A	0.08	NC	54,100	D	0.90	0.83
La Media Rd to Avenida de la Fuente	60,000	6,400	A	0.11	NC	26,300	B	0.44	0.33
Avenida de la Fuente to SR-905	60,000	21,500	A	0.36	NC	50,100	D	0.84	0.48
Piper Ranch Road									
Lonestar Rd to Otay Mesa Rd	30,000	2,900	A	0.10	NC	5,200	A	0.17	0.08

TABLE 8–2
YEAR 2030 STREET SEGMENT OPERATIONS
CUMULATIVE IMPACT DETERMINATION
ALTERNATIVE 1 VS. 7

County of San Diego Roadways	Adopted LOS "E" Capacity [a]	Alternative 1		Proposed LOS "E" Capacity [a]	Alternative 7		Measure of Significance
		ADT [b]	LOS [c]		ADT	LOS	Cumulative Project Δ in Volume
Bonita Road							
Central Ave to San Miguel Rd	37,000	15,700	B	NC	16,200	B	500
Sweetwater Road							
Bonita Rd to Park Dr	37,000	25,000	C	NC	25,900	C	900

Footnotes:

a. LOS "C" Capacity based on City of Chula Vista Roadway Classification Table. City and County of San Diego utilizes LOS "E" capacity thresholds. Chula Vista and San Diego Roadway Classification Tables are shown in *Appendix B*.

b. Average Daily Traffic.

c. Level of Service.

d. Under Adopted General Plan, 6-Lane Gateway allows for LOS D operations.

e. V/C = Volume to Capacity Ratio.

f. Δ V/C = Increase in V/C due to Project.

g. A significant cumulative impact is calculated at this location due to the downsize of the Main Street/La Media Road couplet from 6 lanes to 4 lanes.

General Notes:

Bold typeface represents unacceptable level of service based on appropriate jurisdiction's significance criteria.

Shading represents potential significant impact.

DNE = Does not exist

NC = No Change in roadway capacity.

TABLE 8–3
YEAR 2030 FREEWAY MAINLINE ANALYSIS INPUTS

Freeway Segment	Dir.	# of Lanes	Hourly Capacity [a]	% K [c]		% D [c]		Truck Factor [d]
				AM	PM	AM	PM	
Interstate 805								
Olympic Pkwy/Orange Ave to Main St/Auto Park Dr	NB	4M+1A+2ML	11,600	0.0720	0.0801	0.5303	0.4534	0.931
	SB	4M+1A+2ML	11,600	0.0720	0.0801	0.4697	0.5466	
Main St/Auto Park Dr to Palm Ave	NB	4M+1A+2ML	11,600	0.0720	0.0801	0.5303	0.4534	0.931
	SB	4M+12ML	10,400	0.0720	0.0801	0.4697	0.5466	
Palm Ave to SR-905	NB	4M+1A+2ML	11,600	0.0720	0.0801	0.5303	0.4534	0.931
	SB	4M+1A+2ML	11,600	0.0720	0.0801	0.4697	0.5466	
State Route 125								
Olympic Pkwy to Birch Rd	NB	2M	4,000	0.0720	0.0801	0.5303	0.4534	0.931
	SB	2M	4,000	0.0720	0.0801	0.4697	0.5466	
Birch Rd to Main St/Rock Mountain Rd	NB	2M	4,000	0.0720	0.0801	0.5303	0.4534	0.931
	SB	2M	4,000	0.0720	0.0801	0.4697	0.5466	
Main St/Rock Mountain Rd to Otay Valley Rd	NB	2M	4,000	0.0720	0.0801	0.5303	0.4534	0.931
	SB	2M	4,000	0.0720	0.0801	0.4697	0.5466	
Otay Valley Rd to Lonestar Rd	NB	2M	4,000	0.0720	0.0801	0.5303	0.4534	0.931
	SB	2M	4,000	0.0720	0.0801	0.4697	0.5466	
Lonestar Rd to Otay Mesa Rd	NB	2M	4,000	0.0720	0.0801	0.5303	0.4534	0.931
	SB	2M	4,000	0.0720	0.0801	0.4697	0.5466	
Otay Mesa Rd to SR-905	NB	2M	4,000	0.0720	0.0801	0.5303	0.4534	0.931
	SB	2M	4,000	0.0720	0.0801	0.4697	0.5466	
State Route 905								
I-805 to Ocean View Hills Pkwy	EB	4M+1A	9,200	0.0782	0.0864	0.6524	0.3353	0.935
	WB	4M+1A	9,200	0.0782	0.0864	0.3476	0.6647	
Ocean View Hills Pkwy to Heritage Rd	EB	4M	8,000	0.0782	0.0864	0.6524	0.3353	0.935
	WB	4M+1A	9,200	0.0782	0.0864	0.3476	0.6647	
Heritage Rd to Britannia Blvd	EB	4M+1A	9,200	0.0782	0.0864	0.6524	0.3353	0.935
	WB	4M+1A	9,200	0.0782	0.0864	0.3476	0.6647	
Britannia Blvd to La Media Rd	EB	4M+1A	9,200	0.0782	0.0864	0.6524	0.3353	0.935
	WB	4M	8,000	0.0782	0.0864	0.3476	0.6647	
La Media Rd to SR-125	EB	4M	8,000	0.0782	0.0864	0.6524	0.3353	0.935
	WB	4M	8,000	0.0782	0.0864	0.3476	0.6647	

Footnotes:

a. Capacity calculated at 2000 vph per lane and 1200 vph per auxiliary lane
b. Peak Hour Percentage (K) and Direction Split (D) from CALTRANS "2007 Traffic Volumes", June 2008. I-805 northbound and southbound K and D percentages and truck factors used on SR-125 since data is not available.
c. Truck Factor from "2007 Annual Average Daily Truck Traffic on the California State Highway System", Sept 2008

General Notes:

Truck Factor data contained in *Appendix C.*
K and D percentages are contained in *Appendix C.*
M = Mainline
A = Auxiliary Lane
ML = Managed Lanes

TABLE 8–4
YEAR 2030 FREEWAY MAINLINE OPERATIONS
DIRECT IMPACT DETERMINATION
ALTERNATIVES 1 VS. 3

Freeway Segment	Dir.	Alternative 1			V/C [c]		LOS		Alternative 3			V/C		LOS		Δ V/C [d]	
		ADT [a]	AM [b]	PM [b]	AM	PM	AM	PM	ADT	AM	PM	AM	PM	AM	PM	AM	PM
Interstate 805																	
Olympic Pkwy/ Orange Ave to Main St/Auto Park Dr	NB	238,400	9,777	9,300	0.843	0.802	D	D	238,000	9,771	9,294	0.842	0.801	D	D	-0.001	0.000
	SB		8,660	11,211	0.747	0.966	C	**E**		8,655	11,205	0.746	0.966	C	**E**	0.000	-0.001
Main St/Auto Park Dr to Palm Ave	NB	221,000	9,064	8,621	0.781	0.743	C	C	224,900	9,233	8,783	0.796	0.757	C	C	0.015	0.014
	SB		8,028	10,393	0.772	0.999	C	**E**		8,178	10,588	0.786	1.018	C	**F(0)**	0.014	**0.019**
Palm Ave to SR-905	NB	201,800	8,276	7,872	0.713	0.679	C	C	205,400	8,424	8,012	0.726	0.691	C	C	0.013	0.012
	SB		7,330	9,490	0.632	0.818	C	D		7,461	9,659	0.643	0.833	C	D	0.011	0.015
State Route 125																	
Olympic Pkwy to Birch Rd	NB	11,200	459	437	0.115	0.109	B	B	13,400	550	523	0.137	0.131	B	B	0.023	0.021
	SB		407	527	0.102	0.132	B	B		487	630	0.122	0.158	B	B	0.020	0.026
Birch Rd to Main St/Rock Mountain Rd	NB	9,900	406	386	0.102	0.097	B	B	13,700	562	534	0.140	0.134	B	B	0.039	0.037
	SB		360	466	0.090	0.116	B	B		498	644	0.124	0.161	B	B	0.035	0.045
Main St/Rock Mountain Rd to Otay Valley Rd	NB	20,000	820	780	0.205	0.195	B	B	23,900	980	932	0.245	0.233	B	B	0.040	0.038
	SB		726	941	0.182	0.235	B	B		868	1,124	0.217	0.281	B	B	0.035	0.046
Otay Valley Rd to Lonestar Rd	NB	33,100	1,357	1,291	0.339	0.323	B	B	57,800	2,370	2,255	0.593	0.564	B	B	0.253	0.241
	SB		1,202	1,557	0.301	0.389	B	B		2,100	2,718	0.525	0.680	B	C	0.224	0.290
Lonestar Rd to Otay Mesa Rd	NB	44,500	1,825	1,736	0.456	0.434	B	B	53,400	2,190	2,083	0.548	0.521	B	B	0.091	0.087
	SB		1,616	2,093	0.404	0.523	B	B		1,940	2,511	0.485	0.628	B	C	0.081	0.105
Otay Mesa Rd to SR-905	NB	30,800	1,263	1,201	0.316	0.300	B	B	26,000	1,066	1,014	0.267	0.254	B	B	-0.049	-0.047
	SB		1,119	1,448	0.280	0.362	B	B		944	1,223	0.236	0.306	B	B	-0.044	-0.056

TABLE 8–4
YEAR 2030 FREEWAY MAINLINE OPERATIONS
DIRECT IMPACT DETERMINATION
ALTERNATIVES 1 VS. 3

Freeway Segment	Dir.	Alternative 1			V/C [c]		LOS		Alternative 3			V/C		LOS		Δ V/C [d]	
		ADT [a]	AM [b]	PM [b]	AM	PM	AM	PM	ADT	AM	PM	AM	PM	AM	PM	AM	PM
State Route 905																	
I-805 to Ocean View Hills Pkwy	EB	146,500	7,994	4,539	0.869	0.493	D	B	147,700	8,059	4,576	0.876	0.497	D	B	0.007	0.004
	WB		4,259	8,998	0.463	0.978	B	**E**		4,294	9,072	0.467	0.986	B	**E**	0.004	0.008
Ocean View Hills Pkwy to Heritage Rd	EB	134,900	7,361	4,180	0.920	0.522	**E**	B	136,700	7,459	4,235	0.932	0.529	**E**	B	**0.012**	0.007
	WB		3,922	8,286	0.426	0.901	B	D		3,974	8,396	0.432	0.913	B	D	0.006	0.012
Heritage Rd to Britannia Blvd	EB	126,600	6,908	3,923	0.751	0.426	C	B	129,200	7,050	4,003	0.766	0.435	C	B	0.015	0.009
	WB		3,681	7,776	0.400	0.845	B	D		3,756	7,936	0.408	0.863	B	D	0.008	0.017
Britannia Blvd to La Media Rd	EB	118,400	6,460	3,668	0.702	0.399	C	B	121,800	6,646	3,774	0.722	0.410	C	B	0.020	0.011
	WB		3,442	7,272	0.430	0.909	B	D		3,541	7,481	0.443	0.935	B	**E**	0.012	**0.026**
La Media Rd to SR-125	EB	95,100	5,189	2,947	0.649	0.368	C	B	97,900	5,342	3,033	0.668	0.379	C	B	0.019	0.011
	WB		2,765	5,841	0.346	0.730	B	C		2,846	6,013	0.356	0.752	B	C	0.010	0.021

Footnotes:

a. ADT Volumes from SANDAG South Bay Models
b. Peak Hour Volume = ((ADT)(K)(D)/Truck Factor)
c. V/C = ((ADT)(K)(D)/Truck Factor/Capacity)
d. Δ V/C = Increase in V/C due to the Project

General Notes:

See *Table 8–4* for freeway analysis factors.
Bold typeface represents poor level of service.
Shading represents potential significant impact.

LOS	V/C
A	<0.41
B	0.62
C	0.8
D	0.92
E	1
F(0)	1.25
F(1)	1.35
F(2)	1.45

TABLE 8–5
YEAR 2030 FREEWAY MAINLINE OPERATIONS
CUMULATIVE IMPACT DETERMINATION
ALTERNATIVES 1 VS. 7

Freeway Segment	Dir.	Alternative 1			V/C [c]		LOS		Alternative 7			V/C		LOS		Δ V/C [d]	
		ADT [a]	AM [b]	PM [b]	AM	PM	AM	PM	ADT	AM	PM	AM	PM	AM	PM	AM	PM
Interstate 805																	
Olympic Pkwy/ Orange Ave to Main St/Auto Park Dr	NB	238,400	9,777	9,300	0.843	0.802	D	D	268,000	11,003	10,466	0.949	0.902	**E**	D	**0.106**	0.101
	SB		8,660	11,211	0.747	0.966	C	**E**		9,746	12,617	0.840	1.088	D	**F(0)**	0.094	**0.121**
Main St/Auto Park Dr to Palm Ave	NB	221,000	9,064	8,621	0.781	0.743	C	C	258,100	10,596	10,079	0.913	0.869	D	D	0.132	0.126
	SB		8,028	10,393	0.772	0.999	C	**E**		9,386	12,151	0.902	1.168	D	**F(0)**	0.131	**0.169**
Palm Ave to SR-905	NB	201,800	8,276	7,872	0.713	0.679	C	C	236,500	9,699	9,226	0.836	0.795	D	C	0.123	0.117
	SB		7,330	9,490	0.632	0.818	C	D		8,591	11,122	0.741	0.959	C	**E**	0.109	**0.141**
State Route 125																	
Olympic Pkwy to Birch Rd	NB	11,200	459	437	0.115	0.109	B	B	28,100	1,152	1,096	0.288	0.274	B	B	0.173	0.165
	SB		407	527	0.102	0.132	B	B		1,021	1,321	0.255	0.330	B	B	0.153	0.199
Birch Rd to Main St/Rock Mountain Rd	NB	9,900	406	386	0.102	0.097	B	B	30,200	1,239	1,178	0.310	0.295	B	B	0.208	0.198
	SB		360	466	0.090	0.116	B	B		1,097	1,420	0.274	0.355	B	B	0.184	0.239
Main St/Rock Mountain Rd to Otay Valley Rd	NB	20,000	820	780	0.205	0.195	B	B	46,300	1,899	1,806	0.475	0.452	B	B	0.270	0.256
	SB		726	941	0.182	0.235	B	B		1,682	2,177	0.420	0.544	B	B	0.239	0.309
Otay Valley Rd to Lonestar Rd	NB	33,100	1,357	1,291	0.339	0.323	B	B	90,700	3,720	3,538	0.930	0.885	**E**	D	**0.591**	0.562
	SB		1,202	1,557	0.301	0.389	B	B		3,295	4,265	0.824	1.066	D	**F(0)**	0.523	**0.677**
Lonestar Rd to Otay Mesa Rd	NB	44,500	1,825	1,736	0.456	0.434	B	B	80,600	3,306	3,144	0.826	0.786	D	C	0.370	0.352
	SB		1,616	2,093	0.404	0.523	B	B		2,928	3,790	0.732	0.948	C	**E**	0.328	**0.424**
Otay Mesa Rd to SR-905	NB	30,800	1,263	1,201	0.316	0.300	B	B	33,700	1,382	1,315	0.346	0.329	B	B	0.030	0.028
	SB		1,119	1,448	0.280	0.362	B	B		1,224	1,585	0.306	0.396	B	B	0.026	0.034

TABLE 8–5
YEAR 2030 FREEWAY MAINLINE OPERATIONS
CUMULATIVE IMPACT DETERMINATION
ALTERNATIVES 1 VS. 7

Freeway Segment	Dir.	Alternative 1			V/C [c]		LOS		Alternative 7			V/C		LOS		Δ V/C [d]	
		ADT [a]	AM [b]	PM [b]	AM	PM	AM	PM	ADT	AM	PM	AM	PM	AM	PM	AM	PM
State Route 905																	
I-805 to Ocean View Hills Pkwy	EB	146,500	7,994	4,539	0.869	0.493	D	B	223,600	12,201	6,928	1.326	0.753	**F(1)**	C	**0.457**	0.260
	WB		4,259	8,998	0.463	0.978	B	**E**		6,500	13,734	0.707	1.493	C	**F(3)**	0.244	**0.515**
Ocean View Hills Pkwy to Heritage Rd	EB	134,900	7,361	4,180	0.920	0.522	**E**	B	214,900	11,726	6,658	1.466	0.832	**F(3)**	D	**0.546**	0.310
	WB		3,922	8,286	0.426	0.901	B	D		6,248	13,200	0.679	1.435	C	**F(2)**	0.253	**0.534**
Heritage Rd to Britannia Blvd	EB	126,600	6,908	3,923	0.751	0.426	C	B	197,500	10,776	6,119	1.171	0.665	**F(0)**	C	**0.421**	0.239
	WB		3,681	7,776	0.400	0.845	B	D		5,742	12,131	0.624	1.319	C	**F(1)**	0.224	**0.473**
Britannia Blvd to La Media Rd	EB	118,400	6,460	3,668	0.702	0.399	C	B	171,400	9,352	5,311	1.017	0.577	**F(0)**	B	**0.314**	0.178
	WB		3,442	7,272	0.430	0.909	B	D		4,983	10,528	0.623	1.316	C	**F(1)**	0.193	**0.407**
La Media Rd to SR-125	EB	95,100	5,189	2,947	0.649	0.368	C	B	133,200	7,268	4,127	0.908	0.516	D	B	0.260	0.148
	WB		2,765	5,841	0.346	0.730	B	C		3,872	8,181	0.484	1.023	B	**F(0)**	0.138	**0.293**

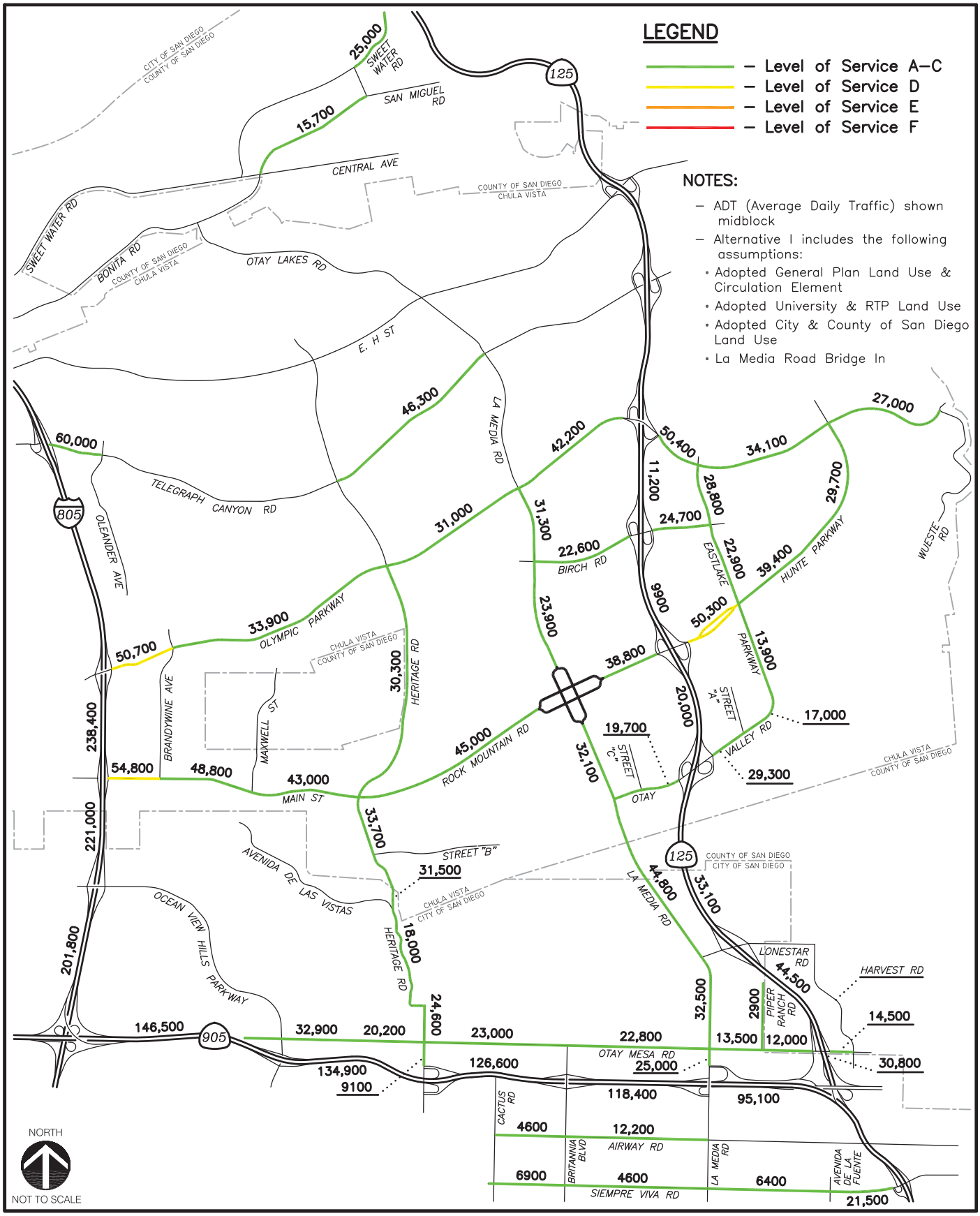
Footnotes:

a. ADT Volumes from SANDAG Southbay Models
b. Peak Hour Volume = ((ADT)(K)(D)/Truck Factor)
c. V/C = ((ADT)(K)(D)/Truck Factor/Capacity)
d. Δ V/C = Increase in V/C due to the Project

General Notes:

See *Table 8–4* for freeway analysis factors.
Bold typeface represents poor level of service.
Shading represents potential significant impact.

LOS	V/C
A	<0.41
B	0.62
C	0.8
D	0.92
E	1
F(0)	1.25
F(1)	1.35
F(2)	1.45

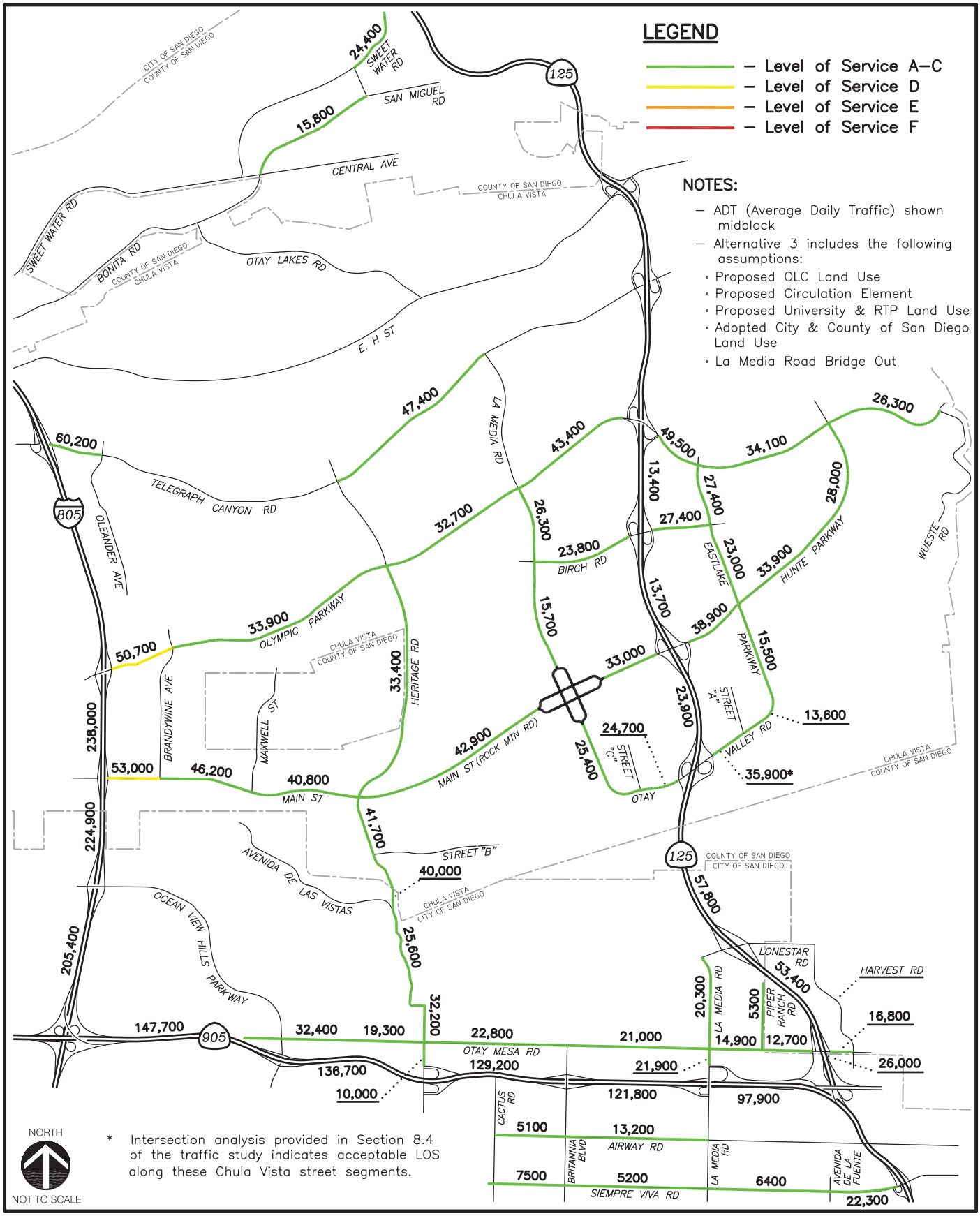


REV. 10/20/2011
N:\1885\Figures\LLG1885 FIG 8–1

Figure 8-1

Year 2030 Roadway Segment Level of Service

Alternative 1 (Adopted General Plan)

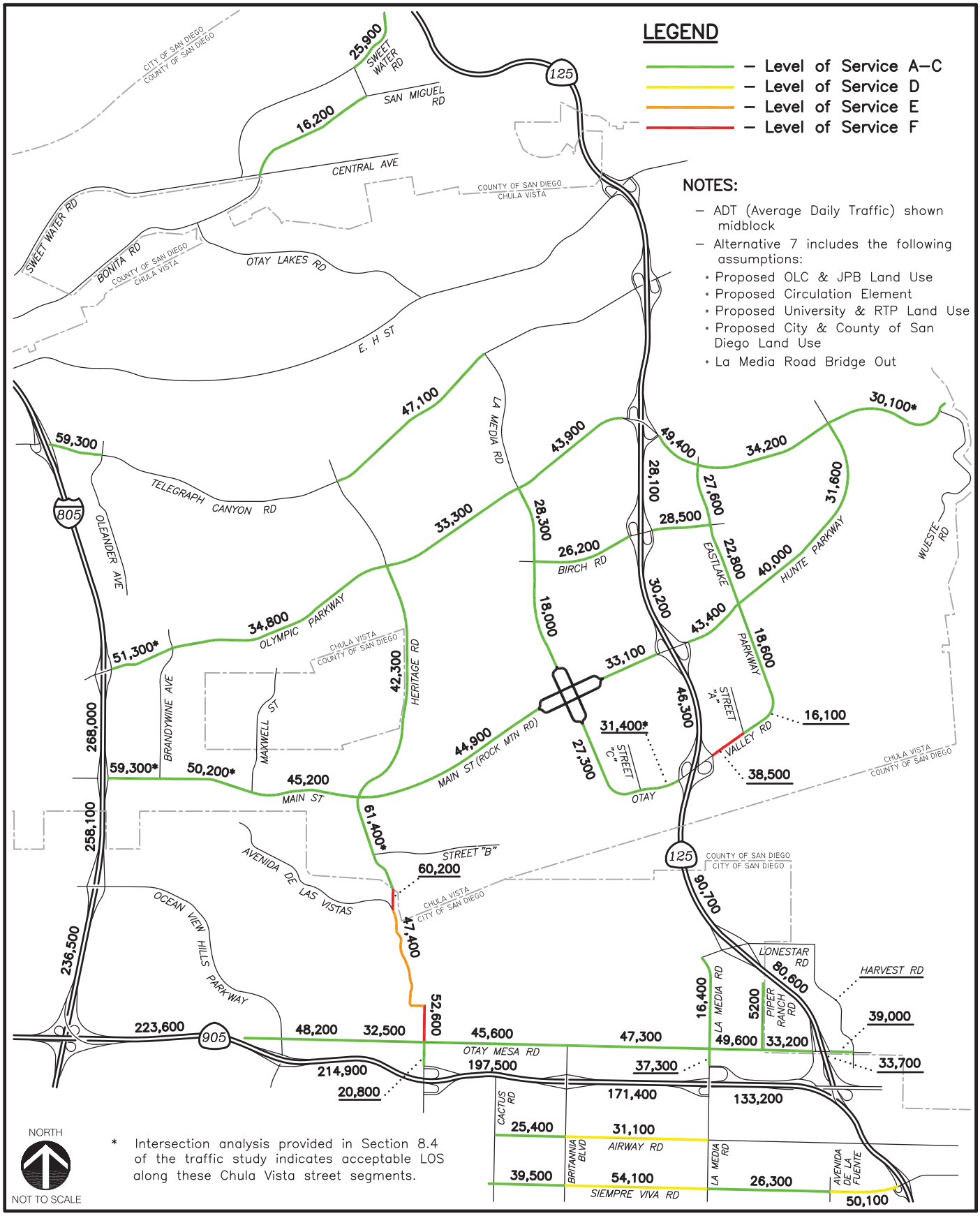


REV. 11/30/2011
N:\1885\Figures\LLG1885 FIG 8-2

LINSCOTT LAW & GREENSPAN engineers

Figure 8-2

Year 2030 Roadway Segment Level of Service
Alternative 3



REV. 11/30/2011
N:\1885\Figures\LLG1885 FIG 8–3

LINSCOTT LAW & GREENSPAN engineers

Figure 8-3

Year 2030 Roadway Segment Level of Service
Alternative 7

8.4 Deficient Roadway Segment Intersection Analysis

8.4.1 *Methodology*

Section 8.0 identifies deficient roadway segments in the City of Chula Vista both with and without the Project. Deficient roadway segments where potential significant impacts may occur with the implementation of the proposed Project are discussed in this section. As mentioned in the City's significance criteria in Section 5.1 of this report, a peak hour analysis is conducted at signalized intersections along a potentially impacted segment and the impact is considered significant only if at least one of the intersections does not meet City of Chula Vista peak hour level of service standard (LOS D). This methodology supports the notion that acceptable levels of service at intersections during peak hours along a segment are a valid indicator of adequate operations. If the intersections along a LOS D or LOS E operating segment all operate at LOS D or better during peak periods, the segment impact is considered not significant since intersection analysis is more indicative of actual roadway system operations than street segment analysis. If a segment Level of Service is LOS F, the impact is significant regardless of intersection LOS. This methodology only applies to City of Chula Vista roadways and not to City of San Diego or County of San Diego roadways.

Signalized intersections were analyzed under AM and PM peak hour conditions. Average vehicle delay was determined utilizing the methodology found in Chapter 16 of the *2000 Highway Capacity Manual (HCM),* with the assistance of the *Synchro* (version 7.0) computer software. The delay values (represented in seconds) were qualified with a corresponding intersection Level of Service (LOS).

The following is a list of the roadway segments and the corresponding signalized intersections along each segment which are analyzed where a potential direct impact is calculated to occur:

1. Otay Valley Road between SR-125 and Street "A" – LOS E
    - Otay Valley Road/SR-125 NB Ramps intersection
    - Otay Valley Road/Street "A" intersection

The following is a list of the roadway segments and the corresponding signalized intersections along each segment which are analyzed where a potential cumulative impact is calculated to occur:

2. Olympic Parkway between I-805 and Brandywine Avenue – LOS D
    - Olympic Parkway/I-805 NB Ramps intersection
    - Olympic Parkway/Oleander Avenue intersection
    - Olympic Parkway/Brandywine Avenue intersection

3. Olympic Parkway between Hunte Parkway and Wueste Road – LOS D
    - Olympic Parkway/Hunte Parkway intersection
    - Olympic Parkway/Olympic Vista Road intersection
    - Olympic Parkway/Wueste Road intersection

4. Main Street between I-805 Ramps and Brandywine Avenue – LOS E
    - Main Street/I-805 NB Ramps intersection
    - Main Street/Oleander Avenue intersection
    - Main Street/Brandywine Avenue intersection

5. Main Street between Brandywine Avenue and Maxwell Avenue – LOS D
    - Main Street/Brandywine Avenue intersection
    - Main Street/Auto Park Place intersection
    - Main Street/Maxwell Avenue intersection

6. Otay Valley Road between La Media Road and SR-125 – LOS D
    - Otay Valley Road/SR-125 SB Ramps intersection
    - Otay Valley Road/Street "C" intersection

7. Heritage Road between Main Street and the City Boundary – LOS E
    - Main Street/Heritage Road intersection
    - Heritage Road/Street "B" intersection

It should be noted that the significant impact identified on Otay Valley Road between SR-125 and Street "A" under Alternative 7 is forecasted to operate at LOS F conditions, thus intersection analysis cannot be used to justify adequate peak hour operations along these roadway segments.

8.4.2 *Year 2030 Network Assumptions & Peak Hour Intersection Volumes*

Future intersection lane geometries were taken from the Eastern Urban Center Traffic Impact Analysis conducted by Kimley-Horn and Associates, Inc., March 2009, and the Otay Ranch Villages 2, 3, & PA 18 B Traffic Impact Analysis conducted by LLG, October 2005 and are shown in ***Figure 8–4***. ***Appendix F*** contains the excerpts from the above referenced studies.

ADT volumes for Alternatives 3 and 7 were obtained from the SANDAG South Bay model and peak hour turning movement volumes were forecasted using a template in EXCEL developed by LLG. This template determines peak hour traffic at an intersection from future ADT volumes using the relationship between existing peak hour turning movements and the existing ADT volumes. This same relationship can be assumed to generally continue in the future. Since existing volumes were not available at some of the intersections analyzed, Year 2030 volumes from the Eastern Urban Center Traffic Impact Analysis conducted by Kimley-Horn and Associates, Inc., March 2009, were used to forecast future traffic patterns. This methodology was repeated for the volumes obtained from the Chula Vista Auto Park Traffic Impact Analysis conducted by LLG, February 2004. Since the interchange of SR-125 and Otay Valley Road currently does not exist, the turning movement volumes were forecasted based on peak hour turning movement factors derived from the ADT's on each leg of each intersection.

8.4.3 *Year 2030 Intersection Analysis*

Table 8–6 shows the potentially impacted roadway segments and the intersections located along each segment. As shown in *Table 8–6*, all intersections along City of Chula Vista roadways in which a potential significant impact was calculated are forecasted to operate at LOS D or better. Therefore, only a single significant impact on Otay Valley Road between SR-125 and Street "A" is calculated to remain in the cumulative condition.

Appendix G contains the peak hour turning movement volumes and intersection analysis worksheets for Alternatives 3 and 7.

TABLE 8–6
CITY OF CHULA VISTA SEGMENT IMPACTS & INTERSECTION ANALYSIS
SIGNIFICANT IMPACT DETERMINATION

Impacted Segment	Deficient LOS [b]	Corresponding Signalized Intersection(s)	AM		PM	
			Delay [a]	LOS	Delay	LOS
Potential Direct Impacts						
1. Otay Valley Road between SR-125 and Street "A"	E	Otay Valley Rd/SR-125 NB Ramps	14.2	B	14.1	B
		Otay Valley Rd/Street "A"	25.3	C	25.4	C
Potential Cumulative Impacts						
2. Olympic Parkway between I-805 NB Ramps and Brandywine Avenue	D	Olympic Pkwy/I-805 NB Ramps	46.0	D	37.5	D
		Olympic Pkwy/Oleander Ave	19.5	B	20.4	C
		Olympic Pkwy/Brandywine Ave	54.4	D	37.1	D
3. Olympic Parkway between Hunte Parkway and Wueste Road	D	Olympic Pkwy/Hunte Pkwy	25.9	C	29.0	C
		Olympic Pkwy/Olympic Vista Rd	23.1	C	13.3	B
		Olympic Pkwy/Wueste Rd	7.9	A	5.4	A
4. Main Street between I-805 NB Ramps and Brandywine Avenue	E	Main St/I-805 NB Ramps	31.2	C	32.1	C
		Main St/Oleander Ave	7.6	A	6.0	A
		Main St/Brandywine Ave	52.9	D	36.4	D
5. Main Street between Brandywine Avenue and Maxwell Avenue	D	Main St/Brandywine Ave	52.9	D	36.4	D
		Main St/Auto Park Pl	10.2	B	9.8	A
		Main St/Maxwell Ave	9.2	B	8.9	A
6. Otay Valley Road between La Media Road and SR-125	D	Otay Valley Rd/SR-125 SB Ramps	9.3	A	12.6	B
		Otay Valley Rd/Street "C"	18.5	B	20.9	C
7. Heritage Road between Main Street and the City Boundary	E	Main St/Heritage Rd	38.2	D	41.8	D
		Heritage Rd/Street "B"	15.7	B	18.8	B

Footnotes:

a. Average delay expressed in seconds per vehicle.
b. Level of Service.

General Notes:

Future intersection geometries along Olympic Parkway and Heritage Road based on Chula Vista Eastern Urban Center Traffic Impact Analysis, March 2009 prepared by Kimley-Horn and Associates, Inc. and Otay Ranch Villages 2, 3, & PA 18 B Traffic Impact Analysis conducted by LLG, October 2005. See *Figure 8–4*.

8.5 Caltrans Interchange Analysis

Three interchange locations within the Otay Mesa area of the City of San Diego were analyzed to identify potential significant impacts associated with the Project. The locations analyzed in this report are the SR-125/Lonestar Road, SR-905/Heritage Road, and SR-905/La Media Road interchanges. These three interchanges currently do not exist, but are proposed as part of the SANDAG Year 2030 street network.

8.5.1 *Methodology*

Average intersection vehicle delay was determined utilizing the methodology found in Chapter 16 of the *2000 Highway Capacity Manual (HCM),* with the assistance of the *Synchro* (version 7.0) computer software. The delay values (represented in seconds) were qualified with a corresponding intersection Level of Service (LOS).

8.5.2 *Year 2030 Alternative 7 Network Assumptions & Peak Hour Intersection Volumes*

State Route 125/Lonestar Road Interchange

Katz, Okitsu & Associates (KOA) conducted a traffic study for the SR-125 South Corridor Project in March 2005. The interchange of SR-125 and Lonestar Road was included in the report. Intersection lane geometry and traffic volumes were taken from this report. In comparing these volumes to those output by Alternative 7, the volumes used in the KOA study were moderately higher due to preliminary assumptions for SR-125, which also assumed the completion of the La Media Road bridge over the Otay River Valley. In order to accurately represent the Alternative 7 SR-125 volumes forecasted by the most recent SANDAG South Bay model, engineering adjustments were made to reflect Alternative 7 conditions.

State Route 905/La Media Road Interchange

A Caltrans Project Study Report (PSR) was conducted for State Route 905 in February 2007. The intersection lane geometry and volumes forecasted at the interchange of SR-905 and La Media Road were available in this report. In comparing these volumes to those output by Alternative 7, the volumes in the PSR were moderately higher. This is likely due to the Caltrans study including the La Media Road bridge over the Otay River Valley. Traffic patterns observed in the Caltrans report were accounted for in forecasting Alternative 7 turning movement volumes.

State Route 905/Heritage Road Interchange

The Caltrans SR-905 PSR did not contain intersection lane geometry or volumes for the Heritage Road interchange. Therefore, the intersection lane geometry needed to be assumed. Traffic volumes were forecasted using the similar travel patterns forecasted at the SR-905 and La Media Road interchange.

Figure 8–4 shows the future lane geometries assumed in the analysis. ***Appendix H*** contains the excerpts from the Katz, Okitzu, & Associates SR-125 South Corridor Study, March 2005 and the Caltrans SR-905 PSR, February 2007.

8.5.3 *Year 2030 Alternative 7 Interchange Analysis*

Table 8–7 shows the results of the interchange analysis performed under Alternative 7 conditions. As shown in *Table 8–7*, all intersections are calculated to operate at acceptable LOS D or better conditions.

Appendix I contains the peak hour turning movement volumes and interchange analysis worksheets.

TABLE 8–7
INTERCHANGE OPERATIONS
ALTERNATIVE 7

Intersection	Control Type	Peak Hour	Alternative 7	
			Delay [a]	LOS [b]
1. SR-125 SB Ramps/Lonestar Road	Signal	AM	33.6	C
		PM	36.4	D
2. SR-125 NB Ramps/Lonestar Road	Signal	AM	26.4	C
		PM	20.9	C
3. SR-905 WB Ramps/ Heritage Road	Signal	AM	7.3	A
		PM	11.2	B
4. SR-905 EB Ramps/ Heritage Road	Signal	AM	10.7	B
		PM	16.7	B
5. SR-905 WB Ramps/ La Media Road	Signal	AM	17.5	B
		PM	20.4	C
6. SR-905 EB Ramps/ La Media Road	Signal	AM	39.0	D
		PM	38.6	D

Footnotes:

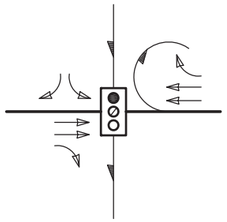
a. Average delay expressed in seconds per vehicle.
b. Level of Service.
c. Intersection lane geometries based on SR-125 South Corridor Study by KOA, March 2005 and Caltrans SR-905 PSR, February 2007. See *Figure 8–4* and *Appendix H.*

SIGNALIZED

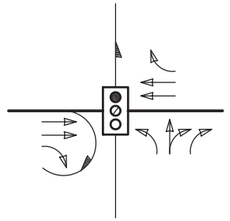
DELAY/LOS THRESHOLDS

Delay	LOS
0.0 ≤ 10.0	A
10.1 to 20.0	B
20.1 to 35.0	C
35.1 to 55.0	D
55.1 to 80.0	E
≥ 80.1	F

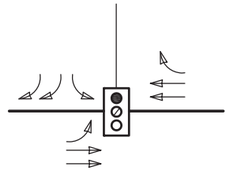
1 Otay Valley Road/ SR 125 SB Ramps



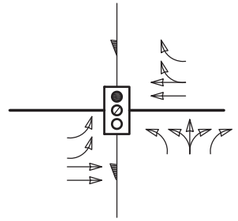
2 Otay Valley Road/ SR 125 NB Ramps



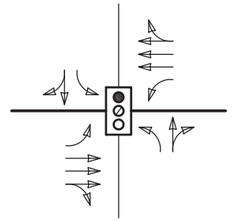
3 Otay Valley Road/ Street "A"



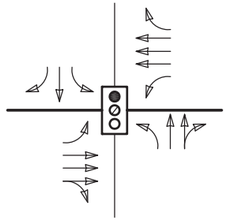
4 Olympic Parkway/ I-805 NB Ramps



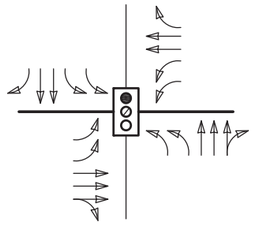
5 Olympic Parkway/ Oleander Avenue



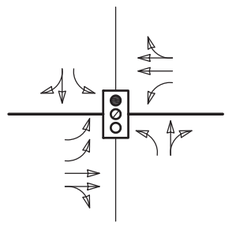
6 Olympic Parkway/ Brandywine Avenue



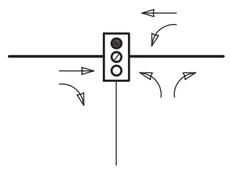
7 Olympic Parkway/ Hunte Parkway



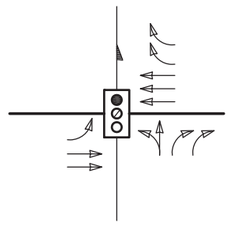
8 Olympic Parkway/ Olympic Vista Road



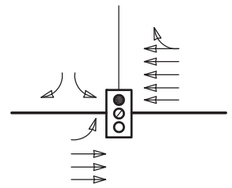
9 Olympic Parkway/ Wueste Road



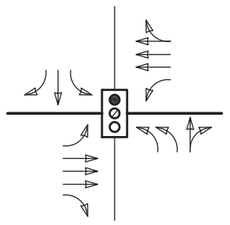
10 Main Street/ I-805 NB Ramps



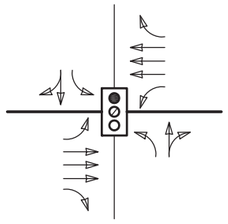
11 Main Street/ Oleander Avenue



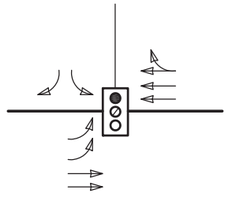
12 Main Street/ Brandywine Avenue



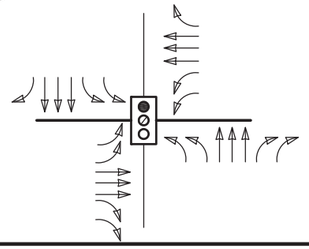
13 Main Street/ Auto Park Place



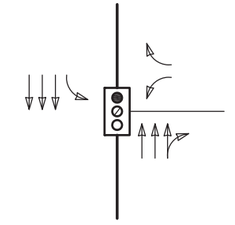
14 Main Street/ Maxwell Avenue



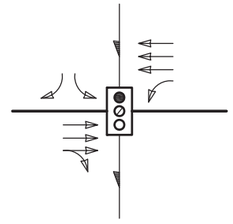
15 Main Street/ Heritage Road



16 Street "B"/ Heritage Road

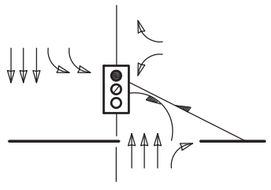


17 Lonestar Road/ SR-125 SB Ramps

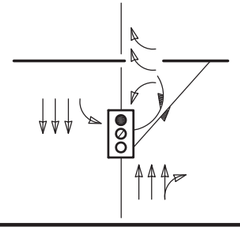


18 Lonestar Road/ SR-125 NB Ramps

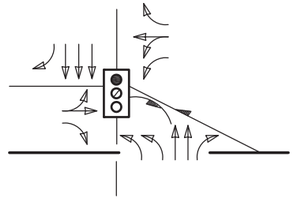
19 SR-905 WB Ramps/ Heritage Road



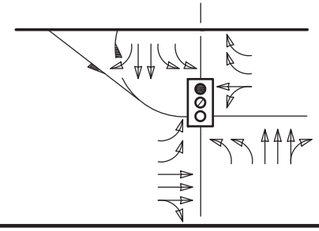
20 SR-905 EB Ramps/ Heritage Road



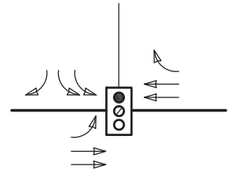
21 SR-905 WB Ramps/ La Media Road



22 SR-905 EB Ramps/ La Media Road



23 Otay Valley Road/ Street "C"



East–West/North–South

SOURCES:
- Chula Vista Eastern Urban Center Traffic Impact Analysis (TIA), March 2009 prepared by Kimley–Horn & Associates Inc;
- Otay Ranch Villages 2, 3, & Planning Areas 18B TIA, October 2005 prepared by LLG;
- SR–125 South Corridor Study, March 2005 prepared by Katz, Okitsu & Associates;
- Caltrans SR–905 Project Study Report (PSR), February 2007;
- LLG 2010.

NORTH

NOT TO SCALE

REV. 12/20/2010
N:\1885\Figures\Geometrics\LLG1885 Figure 8–4.dwg

LINSCOTT LAW & GREENSPAN engineers

Figure 8-4

Year 2030 Intersection Lane geometry

9.0 DISCUSSION OF PROPOSED CIRCULATION ELEMENT CHANGES

As previously discussed in this report, several network changes are proposed by the GPA and GDPA. As a result of these changes, substantial shifts in traffic patterns are expected to occur. The following is a discussion of the changes to the circulation network and the corresponding difference in traffic volumes observed in the model.

Reclassification of Main Street from a Six-Lane Town Center Arterial (Couplet) easterly of SR-125 to a Six-Lane Gateway: Under the adopted General Plan, this roadway is forecasted to operate at LOS D conditions. With the proposed reclassification, the significance threshold is increased from an LOS C capacity of 50,000 to an Urban Core LOS D capacity of 61,200. As a result of this reclassification, the segment along Main Street east of SR-125 is calculated to operate efficiently with the Project.

Reclassify the Main Street/La Media Road Town Center Arterial (Couplet) from a Six-Lane Couplet to a Four-Lane Couplet: Due to the unique operations of Town Center Arterials, a typical roadway segment LOS analysis was not conducted. The analysis of and detailed discussion on the Couplet is provided in Section 10.0 of this report.

Reclassify and realign the segment of La Media Road from the Town Center Arterials at the Main Street/La Media Road Couplet south easterly to SR-125 from a Six-Lane Prime to a Four-Lane Major: Under the adopted General Plan, this roadway is forecasted to operate at LOS A conditions. With the proposed reclassification, the significance threshold is decreased from an LOS C capacity of 50,000 to 30,000. However, even with the reduction in lanes along this roadway, the segment along La Media Road south of the Town Center Arterials to Otay Valley Road is calculated to continue to operate efficiently with the Project.

Eliminate La Media Road crossing the Otay River Valley: The La Media Road bridge is within both the City of Chula Vista and City of San Diego jurisdiction and is planned to be a 6-Lane Prime Arterial crossing the Otay River Valley in the City of San Diego Otay Mesa Community Plan. Under the adopted City of San Diego General Plan, this roadway is forecasted to operate at LOS C conditions. This connection would serve as a parallel route to I-805 and Heritage Road to the west, and SR-125 to the east. With the deletion of this bridge from the circulation network, the 65,000 trips expected under Alternative 7 to utilize this roadway would be rerouted to the roadways mentioned above. This is reflected in the modeling process and as a result of this deletion, potential impacts are more likely to occur, especially degradations in LOS along Heritage Road.

10.0 MAIN STREET/LA MEDIA ROAD TOWN CENTER ARTERIAL OPERATIONS

Village 8 West proposes a mixture of land uses and intensities that includes a pedestrian-oriented mixed-use Town Center, single-family and multi-family residential uses surrounding a typical village core, public open space, and an elementary and middle school. In order to better serve the pedestrian-oriented Town Center, a unique roadway system was designed consisting of "Couplets" and other pedestrian-oriented arterial street designs, designated as a "Town Center Arterial", at the intersection of La Media Road and Main Street in the center of Village 8 West. This unique street system classification or arterial was established to better serve the Village 8 West Town Center, implement the policies in the adopted General Plan and preserve the community character. According to the adopted Chula Vista General Plan Land Use and Transportation Element (CVGP LUT) Chapter 5.0, Section 5.5.5:

> "The Town Center Arterial is intended for use primarily in the East Planning Area's Otay Ranch Subarea. Many conflicting movements are reduced through the use of paired one-way streets that may include on-street parking, wider sidewalks, and neckdowns at intersections. The Town Center Arterial provides a more efficient traffic flow by eliminating wide roadway arterials, with their inherent long signal cycle lengths and segregated left turn lanes at major intersections, and it creates a more energized, mixed-use pedestrian-oriented community within an enlarged urban transit network."

However, due to the unique roadway design associated with Town Center Arterials, there is no established method by which to analyze the future operation of this type of roadway. A traditional segment analyses would be inaccurate because the signalized intersections within the couplet are connected by 200 to 500 feet long roadway segments. The operation of these segments would be dictated by the operating conditions of the adjacent signalized intersections.

Therefore, the individual intersections within the couplet were analyzed and included in the traffic study to determine the levels of service at each location. Acceptable levels of service through the intersections are a clearer indication that traffic will flow through the couplet at acceptable levels of service. The peak hour analysis conducted for intersections is a better determinant for levels of service than a V/C daily roadway analysis. A Highway Capacity Software (HCS) analysis was conducted at the signalized intersections proposed to control the traffic flow through the couplet.

The intersection of La Media Road and Main Street will be constructed as a pair of one-way streets that form a couplet. The operational benefits of the couplet allow the series of intersections to carry a higher volume of traffic more efficiently and with acceptable levels of service. A total of four new signalized intersections will be constructed within the couplet to allow higher traffic volumes to move efficiently between Main Street and La Media Road. By separating the intersection of Main Street/La Media Road into four smaller intersections, left turn phases can be eliminated thereby improving the efficiently of the signal cycle. Shorter cycle lengths and fewer phases result in lower delay and improved traffic flows. Also, the width of the intersection is significantly decreased, improving access for pedestrians and reducing pedestrian cross time at the traffic signal. Total

conflicting traffic volumes through the series of four smaller intersections are lower than the total intersection volume of single point intersection, thereby allowing shorter cycle lengths and improved safety for pedestrians.

Table 10–1 displays the results of the Town Center Arterial intersection analysis for Alternatives 1, 3 and 7. From the results shown in this table, it can therefore be concluded that the Main Street/La Media Road Town Center Arterials, as proposed by the Project (four-lane couplet with two-lanes traveling in each direction), are calculated to operate efficiently with the proposed Project.

Appendix J contains the Main Street/La Media Road Couplet peak hour turning movement volumes and intersection analysis worksheets

TABLE 10–1
MAIN STREET/LA MEDIA ROAD COUPLET OPERATIONS

Intersection	Control Type	Peak Hour	Alternative 1		Alternative 3		Alternative 7	
			Delay [a]	LOS [b]	Delay	LOS	Delay	LOS
1. Main Street (Westbound) / La Media Road (Southbound)	Signal	AM	22.0	C	17.8	B	19.3	B
		PM	37.5	D	21.9	C	25.4	C
2. Main Street (Westbound) / La Media Road (Northbound)	Signal	AM	22.7	C	17.3	B	17.7	B
		PM	30.5	C	20.4	C	21.4	C
3. Main Street (Eastbound) / La Media Road (Southbound)	Signal	AM	23.0	C	18.1	B	20.0	C
		PM	28.0	C	23.9	C	31.1	C
4. Main Street (Eastbound) / La Media Road (Northbound)	Signal	AM	11.6	B	10.0	B	10.2	B
		PM	18.5	B	12.6	B	13.0	B

Footnotes:
a. Average delay expressed in seconds per vehicle.
b. Level of Service.
c. Intersection lane geometries based on RBF August 2011 HCS analysis for the Villages 8 West and 9 Traffic Studies, August 2011.

SIGNALIZED

DELAY/LOS THRESHOLDS

Delay	LOS
0.0 ≤ 10.0	A
10.1 to 20.0	B
20.1 to 35.0	C
35.1 to 55.0	D
55.1 to 80.0	E
≥ 80.1	F

11.0 SR-125 Mid-Arterial Crossing Between Main Street & Otay Valley Road

According to the adopted Otay Ranch General Development Plan, a pedestrian pathway designated as a Regional Riding and/or Hiking Trail is planned over the SR-125 between Villages 8 East and 9. The crossing is planned just north of Otay Valley Road and south of Main Street. This crossing is proposed in the Otay Ranch GDP to provide for a localized connection between Villages 8 East and 9, with its primary purpose to accommodate patrons of the future commercial and office uses in Village 9 as well as the future university. The GDPA continues to propose the mid-arterial pedestrian crossing as part of the Project. ***Appendix K*** contains an illustration showing the location of the mid-arterial crossing.

Based on a review of the traffic volumes within the general vicinity of the mid-arterial crossing, it is recommended that this connection be made to accommodate pedestrians and bicycles. A pedestrian pathway instead of a vehicular crossing will allow for better integration of pedestrian traffic, minimize street crossing, and relieve traffic at intersections and on roadways. In addition, as mentioned in Section 9.0, CEQA 2010 Guidelines promote multi-model design aspects for future roadways. According to paragraph "f" on page 251 of the CEQA Guidelines Appendices, Project features that "conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities" could result in a potential significant impact. By the pedestrian crossing being built as part of the proposed Project, no significant impact would result; the Project will conform with the adopted policies of the Otay Ranch GDP and relieve traffic at intersections and on roadways by better integrating pedestrian traffic and minimizing street crossings.

12.0 CONGESTION MANAGEMENT PROGRAM COMPLIANCE

The Congestion Management Program (CMP), adopted on November 22, 1991, is intended to link land use, transportation and air quality through level of service performance. The CMP requires an Enhanced CEQA Review for projects that are expected to generate more than 2,400 ADT or more than 200 peak hour trips. As the Project trip generation exceeds the CMP thresholds a CMP analysis is triggered.

In 1993, the Institute of Transportation Engineers California Border Section and the San Diego Region Traffic Engineer's Council established a set of guidelines to be used in the preparation of traffic impact studies that are subject to the Enhanced CEQA review process. These guidelines were updated in January 2008. This published document is titled *2008 Congestion Management Program Update*. The guidelines require that a Project study area be established as follows:

- All streets and intersections on CMP arterials where the Project will add 50 or more peak hour trips in either direction.
- Mainline freeway locations where the Project will add 150 or more peak hour trips in either direction.

Based on the CMP guidelines, the CMP facilities requiring analysis are Interstate 805, the future State Route 905, and State Route 125 and Otay Mesa Road-Interim State Route 905 (905 West to 905 East). This analysis is provided in ***Table 8–2*** of this report. ***Table 8–1*** shows the roadway segment analysis for Otay Mesa Road-Interim State Route 905 (905 West to 905 East). Based on the State Route 11 and the Otay Mesa East Port of Entry EIR, dated November 2010, LOS C or better operations are forecasted on the future SR-11. Since the addition of Project-related ADT to this facility would not result in a change in the forecasted acceptable LOS C operations, a freeway mainline analysis of SR-11 was not addressed in the level of service analyses included in this report.

It should be noted that as of May 8, 2009, the SANDAG Board of Directors voted to direct staff to work with local jurisdictions that wished to prepare resolutions electing to opt out of the state CMP. A majority of the jurisdictions representing a majority of the population have adopted resolutions electing to be exempt from the state CMP.

Assembly Bill (AB) 2419, passed in 1996, allows congestion management agencies to "opt out" of the state CMP process. Section 65088.3 of the California Government Code states *"This chapter does not apply in a county in which a majority of local governments, collectively comprised of the city councils and the county board of supervisors, which in total also represent a majority of the population in the county, each adopt resolutions electing to be exempt from the congestion management program."* Over the past year, 14 out of the 19 local jurisdictions, representing a majority of the population in San Diego County have adopted resolutions electing to be exempt from the state CMP process. The City of Chula Vista has adopted this resolution and currently utilizes the City of Chula Vista Capital Improvement Program, Fiscal Year 2010-2011, as the primary tool to provide solutions for congestion.

13.0 EXISTING + PROJECT SCENARIO

13.1 Introduction

CEQA mandates the assessment of existing (ground) conditions with Project build-out conditions. The Existing + Project study scenario assumes the proposed Project would be fully built out immediately and the corresponding full build-out traffic volumes added to existing roadway volumes and infrastructure. Thus, the Existing + Project analysis presumes the existing environment (existing traffic volumes, existing roadway infrastructure, and existing land uses) plus full build out of the Project immediately. This means that future increases in traffic volumes attributable to other development projects are not accounted for in the corresponding change in trip distribution patterns that accompany changing land uses. In any event, a long-range development Project such as the proposed Project is not anticipated to reach full build-out until after the Year 2030. Notwithstanding, an Existing + Project analysis has been conducted and the results of the analysis are presented in this section.

13.2 Analysis

The following analysis is a discussion of potential Project impacts in relation to existing conditions. For the purpose of the analysis, the street network within the Project Area was assumed to be the same as existing on-the-ground conditions.

As needed for this analysis, the Project-Only volumes generated by Village 8 West, Village 9 and the RTP were distributed onto the existing street network and added to the existing traffic volumes to establish the Existing + Project condition.

13.2.1 *Segment Operations*

Table 13–1 shows that under the Existing + Project condition, the following street segments are calculated to operate at a LOS D or worse conditions in the City of Chula Vista:

- Olympic Parkway between I-805 and Brandywine Avenue – LOS F
- Olympic Parkway between Brandywine Avenue and Heritage Road/Paseo Ranchero – LOS F
- Olympic Parkway between Heritage Road/Paseo Ranchero and La Media Road – LOS F
- Olympic Parkway between La Media Road and SR-125 – LOS D
- Birch Road between La Media Road and SR-125 – LOS E
- La Media Road between Olympic Parkway and Birch Road – LOS E
- Eastlake Parkway between Birch Road and Hunte Parkway – LOS E

Based on the study area network of the RBF traffic study, Project traffic volumes were not distributed to City and County of San Diego roadways.

13.2.2 *Freeway Mainline Operations*

Table 13–2 shows the freeway mainline operations on I-805 and SR-905 for the Existing + Project condition. As shown in *Table 13–2*, all freeway segment locations operate at LOS D or better conditions.

TABLE 13–1
EXISTING + PROJECT
STREET SEGMENT OPERATIONS

City of Chula Vista Roadways	Existing Capacity (LOS C/E) [a]	Existing		Existing + Project	
		ADT [b]	LOS [c]	ADT	LOS
Telegraph Canyon Road					
I-805 to Oleander Ave	70,000	61,900	C	61,900	C
Heritage Road to La Media	50,000	40,300	B	42,236	B
Olympic Parkway					
I-805 to Brandywine Ave	50,000	47,000	C	**63,463**	**F**
Brandywine Ave to Heritage Rd/Paseo Ranchero	50,000	48,700	C	**69,785**	**F**
Heritage Rd/Paseo Ranchero to La Media Rd	50,000	**50,500**	**D**	**84,383**	**F**
La Media Rd to SR-125	50,000	43,600	B	**53,712**	**D**
SR 125 to Eastlake Pkwy	70,000	40,500	A	50,181	A
Eastlake Pkwy to Hunte Pkwy	50,000	13,900	A	20,895	A
Hunte Pkwy to Wueste Rd				5,915	A
Birch Road					
La Media Rd to SR-125	40,000	10,200	A	**46,546**	**E**
Main Street					
I-805 to Brandywine Ave	50,000	26,400	A	26,831	A
Brandywine Ave to Maxwell St	50,000	18,700	A	18,700	A
Main Street (Rock Mountain Road)					
Heritage Rd to Main St/La Media Rd Couplet	DNE	DNE	DNE	DNE	DNE
Main St/La Media Rd Couplet to SR-125	DNE	DNE	DNE	DNE	DNE
SR-125 to Eastlake Pkwy	DNE	DNE	DNE	DNE	DNE
Hunte Parkway					
Eastlake Pkwy to Exploration Falls Dr	50,000	700	A	12,737	A
Exploration Falls Dr to Olympic Pkwy	50,000	800	A	11,013	A
Otay Valley Road					
La Media Rd to SR-125	DNE	DNE	DNE	DNE	DNE
SR-125 to Street "A"	DNE	DNE	DNE	DNE	DNE
Street "A" to Eastlake Pkwy	DNE	DNE	DNE	DNE	DNE
Heritage Road					
Olympic Pkwy to Main St (Rock Mountain Rd)	DNE	DNE	DNE	DNE	DNE
Main St (Rock Mountain Rd) to City Boundary	12,000	10,000	B	10,000	B
La Media Road					
Olympic Pkwy to Birch Rd	50,000	11,000	A	**56,946**	**E**
Birch Rd to Main St/La Media Rd Couplet	50,000	1,000	A	3,585	A
Main St/La Media Rd Couplet					
Main St/La Media Rd Couplet to Otay Valley Rd	DNE	DNE	DNE	DNE	DNE
Otay Valley Rd to Lonestar Rd	DNE	DNE	DNE	DNE	DNE

TABLE 13–1
EXISTING + PROJECT
STREET SEGMENT OPERATIONS

City of Chula Vista Roadways	Existing Capacity (LOS C/E) [a]	Existing		Existing + Project	
		ADT [b]	LOS [c]	ADT	LOS
Eastlake Parkway					
Olympic Pkwy to Birch Rd	40,000	9,200	A	25,115	A
Birch Rd to Hunte Pkwy	40,000	1,300	A	**46,864**	**E**
Hunte Pkwy to Otay Valley Rd	DNE	DNE	DNE	DNE	DNE

Footnotes:

a. LOS "C" Capacity based on City of Chula Vista Roadway Classification Table. The Chula Vista Roadway Classification Table is shown in *Appendix B.*

b. Average Daily Traffic.

c. Level of Service.

General Notes:

Bold typeface represents unacceptable level of service based on the City's significance criteria.

Shading represents potential significant impact.

DNE = Does not exist

TABLE 13–2
EXISTING + PROJECT
FREEWAY MAINLINE OPERATIONS

Freeway Segment	Dir.	# of Lanes	Hourly Capacity [a]	Existing			V/C [d]		LOS		Existing + Project			V/C		LOS	
				ADT [b]	AM [c]	PM [c]	AM	PM	AM	PM	ADT	AM	PM	AM	PM	AM	PM
Interstate 805																	
Olympic Pkwy/ Orange Ave to Main St/Auto Park Dr	NB	4M+1A	9,200	151,00	6,193	5,890	0.673	0.640	C	C	156,756	6,429	6,115	0.699	0.665	C	C
	SB	4M+1A	9,200		5,485	7,101	0.596	0.772	B	C		5,694	7,372	0.619	0.801	B	D
Main St/Auto Park Dr to Palm Ave	NB	4M+1A	9,200	149,000	6,111	5,812	0.664	0.632	C	C	154,756	6,347	6,037	0.690	0.656	C	C
	SB	4M+1A	9,200		5,412	7,007	0.588	0.762	B	C		5,621	7,278	0.611	0.791	B	C
Palm Ave to SR-905	NB	4M	8,000	113,000	4,634	4,408	0.579	0.551	B	B	115,301	4,729	4,498	0.591	0.562	B	B
	SB	4M+1A	9,200		4,105	5,314	0.446	0.578	B	B		4,188	5,422	0.455	0.589	B	B
State Route 905																	
I-805 to Otay Mesa Rd	EB	3M	6,000	60,000	3,274	1,859	0.546	0.310	B	B	60,000	3,274	1,859	0.546	0.310	B	B
	WB	3M	6,000		1,744	3,685	0.291	0.614	B	B		1,744	3,685	0.291	0.614	B	B

Footnotes:

a. Capacity calculated at 2000 vph per lane and 1200 vph per auxiliary lane
b. Existing ADT Volumes from CALTRANS 2008
c. Peak Hour Volume = ((ADT)(K)(D)/Truck Factor)
d. V/C = ((ADT)(K)(D)/Truck Factor/Capacity)

General Notes:

Truck Factor data contained in *Table 6–2* and *Appendix C*.
K and D percentages are contained in *Table 6–2* and *Appendix C*.
M = Mainline
A = Auxiliary Lane

LOS	V/C
A	<0.41
B	0.62
C	0.8
D	0.92
E	1
F(0)	1.25
F(1)	1.35
F(2)	1.45

14.0 CITY OF CHULA VISTA GROWTH MANAGEMENT PROGRAM

The Growth Management Oversight Commission (GMOC) was created to provide independent annual review of City compliance with the Growth Management Ordinance (GMO, adopted in 1991), which sets forth threshold standards related to eleven public facilities and services, including: Air Quality, Drainage, Fire and Emergency Services, Fiscal, Libraries, Parks and Recreation, Police, Schools, Sewer, Traffic and Water. Each spring, the GMOC presents its annual report and recommendations to the City Council and Planning Commission at a joint workshop. As a part of the City's Growth Management Program (GMP), a stand-alone traffic analysis was prepared to determine if the GMOC thresholds are projected to be reached or exceeded, and whether mitigation measures are necessary to remain compliant with the requirements of the GMP.

The Chula Vista Traffic Monitoring Program (TMP)is used to assess the operating performance of the City's arterial street system in order to determine compliance with the Threshold Standards of the GMP. Recent GMOC traffic studies have indicated that the segment of westbound Olympic Parkway between Heritage Road and Oleander Avenue during the AM peak hour period would be the first to fall below City Growth Management Traffic threshold standards as traffic volumes increase over time with this Project and other projects east of I-805. The traffic analysis titled: *Olympic Parkway Capacity Enhancement Analysis*, (prepared by LLG dated July 21, 2011) concluded that a potential impact would occur on the segment of westbound Olympic Parkway between Oleander Avenue and Heritage Road/Paseo Ranchero under near-term conditions (Years 0-4) based on the City of Chula Vista's TMP methodology.

15.0 SIGNIFICANCE OF IMPACTS AND MITIGATION MEASURES

15.1 Significance of Impacts

Based on the analysis of the roadway and freeway segments, and the established significance criteria for the City of Chula Vista, City of San Diego and County of San Diego, significant impacts were calculated at the following locations.

15.1.1 *Direct Impacts*

Roadway Segments

No roadway segment direct impacts were calculated in the City of Chula Vista.

It should be noted that although Section 8.0 identifies deficient roadway segments in the City of Chula Vista where potential significant impacts may occur with the implementation of the proposed Project, the application of the City's significance criteria in Section 5.1 states that the impact is considered significant only if an intersection along the impacted segment does not meet City of Chula Vista peak hour level of service standards, LOS D. This methodology supports the notion that acceptable levels of service at intersections during peak hours along a segment are a valid indicator of adequate operations. Therefore, if the intersections along a LOS D or LOS E operating segment all operate at LOS D or better during peak periods, the segment impact is considered not significant since intersection analysis is more indicative of actual roadway system operations than street segment analysis. As a result of this analysis methodology, ***no*** significant direct impacts are calculated within the City of Chula Vista.

No roadway segment direct impacts were calculated in the City and County of San Diego assuming future roadway classifications.

Freeway Segments

Interstate 805

a. Olympic Parkway/Orange Avenue to Main Street/Auto Park Drive
b. Main Street/Auto Park Drive to Palm Avenue

State Route 905

c. I-805 to Ocean View Hills Parkway
d. Britannia Boulevard to La Media Road

15.1.2 *Cumulative Impacts*

Roadway Segments

One cumulative impact was calculated in the City of Chula Vista.

e. Otay Valley Road between SR-125 and Street "A"

It should be noted that although Section 8.0 identifies deficient roadway segments in the City of Chula Vista where potential significant impacts may occur with the implementation of the proposed Project, the application of the City's significance criteria in Section 5.1 states that the impact is considered significant only if an intersection along the potentially impacted segment does not meet City of Chula Vista peak hour level of service standards, LOS D. This methodology supports the notion that acceptable levels of service at intersections during peak hours along a segment are a valid indicator of adequate operations. Therefore, if the intersections along a LOS D or LOS E operating segment all operate at LOS D or better during peak periods, the segment impact is considered not significant since intersection analysis is more indicative of actual roadway system operations than street segment analysis. As a result of this analysis methodology, ***one*** significant cumulative impact is calculated within the City of Chula Vista.

In the City of San Diego, cumulative impacts were calculated on the following roadway segments:

f. Heritage Road between the City Boundary and Avenida de las Vistas
g. Heritage Road between Avenida de las Vistas and Datsun Street/Otay Valley Road
h. Heritage Road between Datsun Street/Otay Valley Road and Otay Mesa Road

No roadway segment cumulative impacts were calculated in the County of San Diego assuming future roadway classifications.

Freeway Segments

Interstate 805

i. Olympic Parkway/Orange Avenue to Main Street/Auto Park Drive
j. Olympic Parkway/Orange Avenue to Main Street/Auto Park Drive
k. Main Street/Auto Park Drive to Palm Avenue
l. Palm Avenue to SR-905

State Route 125

m. Otay Valley Road to Lonestar Road
n. Otay Valley Road to Lonestar Road
o. Lonestar Road to Otay Mesa Road

State Route 905

p. I-805 to Ocean View Hills Parkway
q. I-805 to Ocean View Hills Parkway
r. Ocean View Hills Parkway to Heritage Road
s. Ocean View Hills Parkway to Heritage Road
t. Heritage Road to Britannia Boulevard
u. Heritage Road to Britannia Boulevard

State Route 905 (Continued)

v. Britannia Boulevard to La Media Road
w. Britannia Boulevard to La Media Road
x. La Media Road to SR-125

15.1.3 *Existing + Project Impacts*

Roadway Segments

Seven (7) roadway segment impacts were calculated in the City of Chula Vista.

y. Olympic Parkway between I-805 and Brandywine Avenue
z. Olympic Parkway between Brandywine Avenue and Heritage Road/Paseo Ranchero
aa. Olympic Parkway between Heritage Road/Paseo Ranchero and La Media Road
bb. Olympic Parkway between La Media Road and SR-125
cc. Birch Road between La Media Road and SR-125
dd. La Media Road between Olympic Parkway and Birch Road
ee. Eastlake Parkway between Birch Road and Hunte Parkway

Freeway Segments

No freeway segment impacts are calculated under the Existing + Project condition.

15.2 Mitigation Measures

15.2.1 *Direct Impacts*

Roadway Segments

Since no roadway segment direct impacts were calculated in the City of Chula Vista and City and County of San Diego under the direct Project scenario, mitigation measures are unnecessary.

Freeway Segments

a-d:

The TransNet Extension and Ordinance document, developed by SANDAG, provides for the implementation of the San Diego Transportation Improvement Program, which will result in countywide transportation facility and service improvements for highways, in addition to other modes of transit, to support smart growth development and related environmental mitigation and enhancement projects. As a part of this document, the Regional Transportation Congestion Improvement Program (RTCIP) has been established to require local agencies to collect a specified exaction from the private sector for each newly constructed residential housing unit in that jurisdiction to put toward the RTCIP. These exactions shall ensure future development contributes its proportional share of the funding needed to pay for the Regional Arterial System and related regional transportation facility improvements, as defined by the SANDAG Regional Transportation Plan (RTP). The RTCIP revenue will be used to construct improvements on the Regional Arterial

System such as new or widened arterials, traffic signal coordination and other traffic improvements, freeway interchange and related freeway improvements, railroad grade separations, and improvements required for regional express and rail transit. The City of Chula Vista should coordinate with SANDAG to ensure the proposed Project dedicates the appropriate funds toward the RTCIP in order to mitigate potential freeway impacts.

The funding of the RTCIP is implemented through the City's Capital Improvement Program. The City of Chula Vista Capital Improvement Program designates the payment of Transportation Development Impact Fees (TDIF) of which portions are contributed to the SANDAG RTCIP fund for regional roadway facilities. The Eastern TDIF was established by Council in January 1998 and covers the eastern territories of Chula Vista. This $230 million program consisting of approximately 70 transportation related improvement projects has helped finance improvements to the I-805 interchanges, major arterial roadways and needed traffic signals. The fiscal year (FY) 2010-11 update will incorporate any land use changes adopted since year 2005, provide project costs for recently completed TDIF projects and provide updated estimates for several arterial roadways and bridge projects.

15.2.2 *Cumulative Impacts*

Roadway Segments

The following is recommended to mitigate the potential significant cumulative impacts in the City of Chula Vista:

e. **Otay Valley Road between SR-125 and Street "A"** – Increase the capacity of this segment to a 5-Lane Major with three lanes traveling in the westbound direction with at the number 3 lane trapping onto the SR-125 NB On-Ramp and two lanes traveling in the eastbound direction. This would result in acceptable LOS D operations.

f-h. **Heritage Road between the City Boundary and Otay Mesa Road –** Increase the capacity of this segment located in the City of San Diego to 6-Lane Expressway standards. This would result in acceptable LOS D or better operations.

However, the improvements required to mitigate the impacts along Heritage Road fall within the jurisdiction of the City of San Diego which has a plan for funding and implementation of the facility. Because the improvements cannot be assured at the time of need, the mitigation measure is considered infeasible.

Freeway Segments

i-x:

The TransNet Extension and Ordinance document, developed by SANDAG, provides for the implementation of the San Diego Transportation Improvement Program, which will result in countywide transportation facility and service improvements for highways, in addition to other modes of transit, to support smart growth development and related environmental mitigation and enhancement projects. As a part of this document, the Regional Transportation Congestion Improvement Program (RTCIP) has been established to require local agencies to collect a specified

exaction from the private sector for each newly constructed residential housing unit in that jurisdiction to put toward the RTCIP. These exactions shall ensure future development contributes its proportional share of the funding needed to pay for the Regional Arterial System and related regional transportation facility improvements, as defined by the SANDAG Regional Transportation Plan (RTP). The RTCIP revenue will be used to construct improvements on the Regional Arterial System such as new or widened arterials, traffic signal coordination and other traffic improvements, freeway interchange and related freeway improvements, railroad grade separations, and improvements required for regional express and rail transit. The City of Chula Vista should coordinate with SANDAG to ensure the proposed Project and cumulative project dedicates the appropriate funds toward the RTCIP in order to mitigate potential freeway impacts.

The funding of the RTCIP is implemented through the City's Capital Improvement Program. The City of Chula Vista Capital Improvement Program designates the payment of Transportation Development Impact Fees (TDIF) of which portions are contributed to the SANDAG RTCIP fund for regional roadway facilities. The Eastern TDIF was established by Council in January 1998 and covers the eastern territories of Chula Vista. This $230 million program consisting of approximately 70 transportation related improvement projects has helped finance improvements to the I-805 interchanges, major arterial roadways and needed traffic signals. The fiscal year (FY) 2010-11 update will incorporate any land use changes adopted since year 2005, provide project costs for recently completed TDIF projects and provide updated estimates for several arterial roadways and bridge projects.

15.2.3 *Existing + Project Impacts*

Roadway Segments

y-ee:

Seven roadway segment impacts were calculated in the Existing + Project condition. Mitigation under this scenario is not included as part of the proposed Project because while a potentially significant impact is identified, it is not realistic to expect the Project to be built at once and to generate the calculated traffic on existing roads. Rather, additional mitigation is proposed pursuant to the City's GMP.

Section 14.0 of the report discusses the City's GMP and the results of the 2001 LLG analysis which specifically analyzed Olympic Parkway. In order to mitigate the potential roadway segment impacts along Olympic Parkway, Birch Road, La Media Road and Eastlake Parkway, these roadways shall be included in the annual traffic monitoring report prepared by the GMOC. Specifically, the following is recommended:

- If the planning analysis indicates an impact of LOS D, E or F, along these potentially impacted roadway segments, the GMO method shall be utilized. Under the City's GMO, the threshold for a cumulative impact is considered LOS D for more than 2 hours. The GMO states that if the LOS D threshold is exceeded for more than 2 hours, then all development may be suspended until acceptable operating conditions can be achieved.

In addition, specific to the Olympic Parkway impact, an expanded traffic analysis was prepared (*Olympic Parkway Capacity Enhancement Analysis*, LLG 2011) to monitor new development in the Eastern Territories with respect to the existing available capacity on Olympic Parkway east of 1-805. The study determined if GMO thresholds are projected to be reached or exceeded, and whether mitigation measures are necessary to remain compliant with the requirements of the GMP. In conformance with the requirements of the GMP, a peak-hour arterial analysis was conducted on the segment of westbound Olympic Parkway between Heritage Road and Oleander Avenue under near term conditions (Years 0-4) based on the City's TMP methodology. This methodology is used to assess the operating performance of the City's arterial street system in order to determine compliance with the Threshold Standards of the GMP.

Based on the LLG study, the segment of westbound Olympic Parkway between Heritage Road and Oleander Avenue during the AM peak hour would be the first to fall below GMO traffic threshold standards as traffic volumes increase over time with this project and other projects east of I-805. The analysis demonstrated that GMO thresholds would not be reached along Olympic Parkway until building permits for 2,463 dwelling units have been issued for projects east of I-805.The projected 2,463 dwelling unit threshold is used by the City to determine when cumulative impacts may occur along the corridor. The following mitigation measure has been identified in the event the GMO threshold is reached:

- ~~At any time p~~Prior to the issuance of the building permit for the 2,463rd dwelling unit for development east of 1-805 commencing from April 4, 2011 the applicant may;
  - Prepare a traffic study that demonstrates, to the satisfaction of the City Engineer, that the circulation system has additional capacity without exceeding the GMO traffic threshold standards, or
  - Demonstrate that other improvements are constructed which provide the additional necessary capacity to comply with the GMO traffic threshold to the satisfaction of the City Engineer, or
  - Agree to the City Engineer's selection of an alternative method of maintaining GMO traffic threshold compliance, or
  - Enter into agreement, approved by the City, with other Otay Ranch developers that alleviates congestion and achieves GMO traffic threshold compliance for Olympic Parkway. The Agreement will identify the deficiencies in transportation infrastructure that will need to be constructed, the parties that will construct said needed infrastructure, a timeline for such construction, and provides assurances for construction, in accordance with the City's customary requirements, for said infrastructure.
- If GMO compliance cannot be achieved through l-a, b, c or d above, then the City ~~shall~~ may, in its sole discretion, stop issuing new building permits within the Project Area after building permits for 2,463 dwelling units (DU) have been issued for any development east of 1-805 after April 4, 2011, until such time that GMO traffic threshold standard compliance can be assured to the satisfaction of the City Manager.

- These measures shaft constitute full compliance with growth management objectives and policies in accordance with the requirements of the General Plan, Chapter 10 with regard to traffic thresholds set forth in the GMO, for the Olympic Parkway facilities described above.

Freeway Segments

Since no freeway segment impacts were calculated under the Existing + Project condition, mitigation measures are unnecessary.

End of Report