

STATE ROUTE 11 AND THE OTAY MESA EAST PORT OF ENTRY

SAN DIEGO COUNTY, CALIFORNIA
DISTRICT 11–SD –ROUTE 11, 905, 125 (PM 0.0/2.8; PM R8.4/10.1; 0.5)
EA 056310/ PROJECT ID: 1100000023

FINAL TIER II ENVIRONMENTAL IMPACT REPORT/ ENVIRONMENTAL IMPACT STATEMENT

VOLUME 1 OF 2



Prepared by
U.S. Department of Transportation Federal Highway Administration
and
State of California Department of Transportation



MARCH 2012



CONSTRUCTION OF A NEW STATE ROUTE AND PORT OF ENTRY IN SAN DIEGO COUNTY IN AND
NEAR SAN DIEGO ON ROUTE 11 FROM ROUTE 905/11 SEPARATION TO MEXICO, AND ON ROUTE 125
FROM 0.8 MILES NORTH OF ROUTE 905/11 SEPARATION TO ROUTE 905/11 SEPARATION AND ON
ROUTE 905 FROM 0.1 MILE WEST OF BRITANIA BOULEVARD OVERCROSSING TO
ROUTE 905/11 SEPARATION

FINAL
TIER II ENVIRONMENTAL IMPACT REPORT/
ENVIRONMENTAL IMPACT STATEMENT

Submitted Pursuant to: (State) Division 13, California Public Resources Code
(Federal) 42 U.S.C. 4332 (2)(C) and 23 U.S.C. Section 139(i)

U.S. DEPARTMENT OF TRANSPORTATION
Federal Highway Administration

And

STATE OF CALIFORNIA
Department of Transportation

COOPERATING AGENCIES

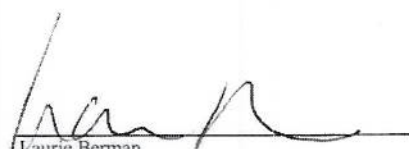
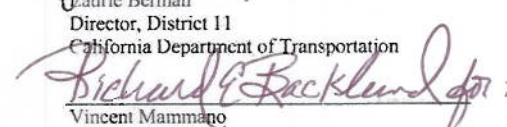
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RESPONSIBLE AGENCIES

California Transportation Commission
City of San Diego
County of San Diego
California Department of General Services
San Diego Association of Governments
California Department of Fish and Game
Regional Water Quality Control Board
California Public Utilities Commission

3/23/12
Date of Approval

3/29/12
Date of Approval


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Abstract: The proposed action represents Tier II of a two-phase process. Phase I identified the locations for the future implementation of State Route 11 (SR-11) and the Otay Mesa East Port of Entry (POE), both of which would be entirely new facilities. The Tier II process involves providing detailed environmental analysis of the proposed design alternatives for the new SR-11 toll highway, the POE and an associated Commercial Vehicle Enforcement Facility (CVEF), including SR-11 connectors to SR-905 and associated modifications to SR-905. Tier II objectives include increasing regional inspection capacities for commercial/personal vehicles and pedestrians; reducing northbound vehicle/pedestrian queues and wait times; accommodating projected increases in international commercial trade and personal vehicle border traffic; contributing to reduced congestion at border crossings and along regional transportation infrastructure; accommodating commercial goods movement and cross-border travel; minimizing impacts to the aquatic environment; accommodating bicycle- and transit-related border traffic; and supporting the 1998 "Binational Corridor Preservation for State Route 11 - Tijuana/Rosario 2000 and Site Designation for the East Otay Mesa-Mesa de Otay II Port of Entry" Letter of Intent. Four build alternatives and five design variations for the SR-11 corridor are evaluated in this Final Environmental Impact Report/Environmental Impact Statement (EIR/EIS), along with the No Build Alternative. The three SR-11 alternatives analyzed in the Draft EIR/EIS were the Two Interchange, One Interchange and No Interchange alternatives, while the design variations involve a no-toll option, a modified median design, two design options for the SR-905/SR-125/SR-11 Interchange, and a design option for the Siempre Viva Road Interchange. The POE and CVEF design and location would be the same under all three Draft EIR/EIS SR-11 alternatives and design variations. A modified two interchange alternative has been identified as the Preferred Alternative and is described and analyzed in this Final EIR/EIS. Modifications to the project design were made in response to public input and refined project design information. Potential benefits from the Tier II project would include provision of additional border crossing capacity to meet current and projected demand for the movement of people and goods between the United States and Mexico, as well the reduction of wait times and other inefficiencies associated with border crossings.

General Information about This Document

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It should be noted that at a future date the Federal Highway Administration, on behalf of the California Department of Transportation, may publish a notice in the Federal Register, pursuant to 23 USC Section 139(I), indicating that a final action has been taken on this project. If such notice is published, a lawsuit or other legal claim will be barred unless it is filed within 180 days after the date of publication of the notice (or within such shorter time period as is specified in the federal laws pursuant to which judicial review of the federal agency action is allowed). If no notice is published, then the lawsuit or claim can be filed as long as the periods of time provided by other federal laws that govern claims are met.

TABLE OF CONTENTS

VOLUME 1 OF 2:

<u>Chapter</u>	<u>Title</u>	<u>Page</u>
LIST OF ACRONYMS		xii
SUMMARY		
S.1	Overview of Project Area	S-2
S.2	Purpose and Need	S-2
S.3	Alternatives Considered.....	S-3
S.4	Joint CEQA/NEPA Document.....	S-11
S.5	Environmental Consequences.....	S-11
S.6	Cumulative Impacts	S-21
S.7	Avoidance, Minimization, and/or Mitigation Measures	S-22
S.8	Coordination with Public and Other Agencies	S-29
S.9	Related Projects	S-30
S.10	Identification of the Preferred Alternative.....	S-31
CHAPTER 1.0 – PROPOSED PROJECT.....		1-1
1.1	Introduction.....	1-1
1.2	Purpose and Need	1-2
1.2.1	Purpose of the Project	1-2
1.2.2	Need for the Project.....	1-3
1.2.3	Independent Utility and Logical Termini.....	1-9
1.2.4	Status of the Related SR-905 Project	1-9
CHAPTER 2.0 – PROJECT ALTERNATIVES		2-1
2.1	Project Description	2-1
2.1.1	Introduction/Background	2-1
2.1.2	Project Location and Local Land Use/Planning Framework	2-2
2.2	Alternatives.....	2-2
2.2.1	State Route 11	2-6
2.2.2	Otay Mesa East Port of Entry.....	2-20
2.2.3	Commercial Vehicle Enforcement Facility	2-29
2.2.4	Design Exceptions.....	2-33
2.2.5	No Build Alternative	2-34
2.2.6	Decision-making Process	2-35
2.3	Alternatives Considered but Eliminated from Further Discussion Prior to the Draft EIR/EIS	2-36
2.3.1	Central Alternative	2-36
2.3.2	Eastern Alternative.....	2-36
2.3.3	Local Road Alternative	2-37
2.3.4	TSM/TDM-Only Alternative	2-38
2.3.5	CVEF Alternatives	2-39
2.4	Permits and Approvals Needed.....	2-41

TABLE OF CONTENTS (cont.)

<u>Chapter</u>	<u>Title</u>	<u>Page</u>
CHAPTER 3.0 – AFFECTED ENVIRONMENT; ENVIRONMENTAL CONSEQUENCES; AND AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES		
HUMAN ENVIRONMENT		
3.1	Existing and Future Land Use	3.1-2
3.1.1	Affected Environment	3.1-2
3.1.2	Environmental Consequences	3.1-16
3.1.3	Avoidance, Minimization, and/or Mitigation Measures	3.1-20
3.2	Consistency with Federal, State, Regional, and Local Plans and Programs	3.2-1
3.2.1	Affected Environment	3.2-1
3.2.2	Environmental Consequences	3.2-9
3.2.3	Avoidance, Minimization, and/or Mitigation Measures	3.2-19
3.3	Growth	3.3-1
3.3.1	Regulatory Setting.....	3.3-1
3.3.2	Affected Environment	3.3-1
3.3.3	Environmental Consequences	3.3-2
3.3.4	Avoidance, Minimization, and/or Mitigation Measures	3.3-9
3.4	Community Character and Cohesion.....	3.4-1
3.4.1	Regulatory Setting.....	3.4-1
3.4.2	Affected Environment	3.4-1
3.4.3	Environmental Consequences	3.4-8
3.4.4	Avoidance, Minimization, and/or Mitigation Measures	3.4-13
3.5	Relocations and Real Property Acquisition	3.5-1
3.5.1	Regulatory Setting.....	3.5-1
3.5.2	Affected Environment	3.5-1
3.5.3	Environmental Consequences	3.5-1
3.5.4	Avoidance, Minimization, and/or Mitigation Measures	3.5-15
3.6	Environmental Justice.....	3.6-1
3.6.1	Regulatory Setting.....	3.6-1
3.6.2	Affected Environment	3.6-1
3.6.3	Environmental Consequences	3.6-2
3.6.4	Avoidance, Minimization, and/or Mitigation Measures	3.6-6
3.7	Utilities/Emergency Services.....	3.7-1
3.7.1	Regulatory Setting.....	3.7-1
3.7.2	Affected Environment	3.7-1
3.7.3	Environmental Consequences	3.7-5
3.7.4	Avoidance, Minimization, and/or Mitigation Measures	3.7-9
3.8	Traffic and Transportation/Pedestrian and Bicycle Facilities.....	3.8-1
3.8.1	Regulatory Setting.....	3.8-1
3.8.2	Affected Environment	3.8-2
3.8.3	Environmental Consequences	3.8-5
3.8.4	Avoidance, Minimization, and/or Mitigation Measures	3.8-25

TABLE OF CONTENTS (cont.)

<u>Chapter</u>	<u>Title</u>	<u>Page</u>
HUMAN ENVIRONMENT (cont.)		
3.9	Visual/Aesthetics	3.9-1
3.9.1	Regulatory Setting.....	3.9-1
3.9.2	Affected Environment.....	3.9-1
3.9.3	Environmental Consequences	3.9-14
3.9.4	Avoidance, Minimization, and/or Mitigation Measures	3.9-25
3.10	Cultural Resources.....	3.10-1
3.10.1	Regulatory Setting.....	3.10-1
3.10.2	Affected Environment.....	3.10-1
3.10.3	Environmental Consequences	3.10-5
3.10.4	Avoidance, Minimization, and/or Mitigation Measures	3.10-6
PHYSICAL ENVIRONMENT		
3.11	Hydrology and Floodplain.....	3.11-1
3.11.1	Regulatory Setting.....	3.11-1
3.11.2	Affected Environment.....	3.11-2
3.11.3	Environmental Consequences	3.11-4
3.11.4	Avoidance, Minimization, and/or Mitigation Measures	3.11-9
3.12	Water Quality and Storm Water Runoff.....	3.12-1
3.12.1	Regulatory Setting.....	3.12-1
3.12.2	Affected Environment.....	3.12-4
3.12.3	Environmental Consequences	3.12-10
3.12.4	Avoidance, Minimization, and/or Mitigation Measures	3.12-13
3.13	Geology/Soils/Seismic/Topography	3.13-1
3.13.1	Regulatory Setting.....	3.13-1
3.13.2	Affected Environment.....	3.13-1
3.13.3	Environmental Consequences	3.13-5
3.13.4	Avoidance, Minimization, and/or Mitigation Measures	3.13-9
3.14	Paleontology	3.14-1
3.14.1	Regulatory Setting.....	3.14-1
3.14.2	Affected Environment.....	3.14-1
3.14.3	Environmental Consequences	3.14-3
3.14.4	Avoidance, Minimization, and/or Mitigation Measures	3.14-4
3.15	Hazardous Waste/Materials	3.15-1
3.15.1	Regulatory Setting.....	3.15-1
3.15.2	Affected Environment.....	3.15-1
3.15.3	Environmental Consequences	3.15-3
3.15.4	Avoidance, Minimization, and/or Mitigation Measures	3.15-4

TABLE OF CONTENTS (cont.)

<u>Chapter</u>	<u>Title</u>	<u>Page</u>
PHYSICAL ENVIRONMENT (cont.)		
3.16	Air Quality	3.16-1
3.16.1	Regulatory Setting.....	3.16-1
3.16.2	Affected Environment.....	3.16-5
3.16.3	Environmental Consequences	3.16-9
3.16.4	Avoidance, Minimization, and/or Mitigation Measures	3.16-20
3.16.5	Climate Change	3.16-21
3.17	Noise	3.17-1
3.17.1	Regulatory Setting.....	3.17-1
3.17.2	Affected Environment.....	3.17-3
3.17.3	Environmental Consequences	3.17-5
3.17.4	Avoidance, Minimization, and/or Mitigation Measures	3.17-11
3.18	Energy	3.18-1
3.18.1	Regulatory Setting.....	3.18-1
3.18.2	Affected Environment.....	3.18-1
3.18.3	Environmental Consequences	3.18-2
3.18.4	Avoidance, Minimization, and/or Mitigation Measures	3.18-4
BIOLOGICAL ENVIRONMENT		
3.19	Natural Communities.....	3.19-1
3.19.1	Regulatory Setting.....	3.19-1
3.19.2	Affected Environment.....	3.19-3
3.19.3	Environmental Consequences	3.19-8
3.19.4	Avoidance, Minimization, and/or Mitigation Measures	3.19-11
3.20	Wetlands and Other Waters	3.20-1
3.20.1	Regulatory Setting.....	3.20-1
3.20.2	Affected Environment.....	3.20-2
3.20.3	Environmental Consequences	3.20-4
3.20.4	Avoidance, Minimization, and/or Mitigation Measures	3.20-8
3.21	Plant Species.....	3.21-1
3.21.1	Regulatory Setting.....	3.21-1
3.21.2	Affected Environment.....	3.21-1
3.21.3	Environmental Consequences	3.21-3
3.21.4	Avoidance, Minimization, and/or Mitigation Measures	3.21-5

TABLE OF CONTENTS (cont.)

<u>Chapter</u>	<u>Title</u>	<u>Page</u>
BIOLOGICAL ENVIRONMENT (cont.)		
3.22	Animal Species	3.22-1
3.22.1	Regulatory Setting.....	3.22-1
3.22.2	Affected Environment.....	3.22-2
3.22.3	Environmental Consequences	3.22-5
3.22.4	Avoidance, Minimization, and/or Mitigation Measures	3.22-6
3.23	Threatened and Endangered Species	3.23-1
3.23.1	Regulatory Setting.....	3.23-1
3.23.2	Affected Environment.....	3.23-1
3.23.3	Environmental Consequences	3.23-6
3.23.4	Avoidance, Minimization, and/or Mitigation Measures	3.23-8
3.24	Invasive Species.....	3.24-1
3.24.1	Regulatory Setting.....	3.24-1
3.24.2	Affected Environment.....	3.24-1
3.24.3	Environmental Consequences	3.24-4
3.24.4	Avoidance, Minimization, and/or Mitigation Measures	3.24-5
ADDITIONAL IMPACTS		
3.25	Relationship between Local Short-term Uses of the Human Environment and the Maintenance and Enhancement of Long-term Productivity	3.25-1
3.25.1	Preferred Alternative and Draft EIR/EIS Build Alternatives and Variations.....	3.25-1
3.25.2	No Build Alternative	3.25-2
3.26	Irreversible and Irretrievable Commitments of Resources that would be Involved in the Proposed Program	3.26-1
3.27	Cumulative Impacts	3.27-1
3.27.1	Regulatory Setting.....	3.27-1
3.27.2	Transboundary Issues.....	3.27-1
3.27.3	Cumulative Analysis	3.27-3
CHAPTER 4.0 – CEQA EVALUATION		4-1
4.1	Determining Significance Under CEQA	4-1
4.2	Less than Significant Effects of the Proposed Project.....	4-2
4.3	Significant Environmental Effects of the Proposed Project (Mandatory Findings of Significance).....	4-6
4.4	Unavoidable Significant Environmental Effects	4-7
4.5	Significant Irreversible Environmental Changes	4-9
4.6	Growth-inducing Impacts	4-9
4.7	Climate Change	4-10
4.8	Mitigation Measures for Significant Impacts Under CEQA.....	4-24

TABLE OF CONTENTS (cont.)

VOLUME 2 OF 2:

<u>Chapter</u>	<u>Title</u>	<u>Page</u>
CHAPTER 5.0 – COMMENTS AND COORDINATION		5-1
5.1	Introduction.....	5-1
5.2	Phase I PEIR/PEIS Comments and Coordination Summary	5-1
5.2.1	Phase I Notice of Intent/Notice of Preparation	5-1
5.2.2	Phase I Public Meetings.....	5-1
5.2.3	Phase I Additional Program Outreach	5-2
5.2.4	Phase 1 SAFETEA-LU 6002 Coordination Plan.....	5-2
5.3	Tier II Comments and Coordination.....	5-3
5.3.1	Tier II Notice of Intent/Notice of Preparation	5-3
5.3.2	Tier II Public Meetings	5-3
5.3.3	Tier II Additional Project Outreach	5-4
5.3.4	Tier II SAFETEA-LU 6002 Coordination Plan.....	5-5
5.4	List of Persons, Organizations and Public Agencies that Commented on the Draft EIR/EIS	5-34
CHAPTER 6.0 – LIST OF PREPARERS		6-1
CHAPTER 7.0 – DISTRIBUTION LIST		7-1
CHAPTER 8.0 – REFERENCES		8-1

APPENDICES (INCLUDED IN VOLUME 2)

Appendix A:	Presidential Permit
Appendix B:	Design Exceptions
Appendix C:	List of Technical Studies
Appendix D:	Resources Evaluated Relative to the Requirements of Section 4(f)
Appendix E:	Farmland Conversion Impact Rating Form
Appendix F:	Caltrans Relocation Assistance Program
Appendix G:	Caltrans Title VI Policy Statement
Appendix H:	Traffic Data
Appendix I:	State Historic Preservation Officer (SHPO) Letters
Appendix J:	County of San Diego Floodplain Letter
Appendix K:	Worksheet A: Reasonable Allowance Calculation for Noise Abatement Based on Critical Design Receiver
Appendix L:	USFWS Consultation Letter
Appendix M:	Tier II Notice of Completion and Notice of Availability
Appendix N:	Environmental Commitments Record State Route 11/Otay Mesa East Port of Entry Project (Tier 11)
Appendix O:	CEQA Environmental Checklist
Appendix P:	Wetlands Only Practicable Alternative Findings
Appendix Q:	Air Quality Conformity Analysis
Appendix R:	Biological Opinion

TABLE OF CONTENTS (cont.)

LIST OF TABLES

(Note: Tables that have been substantially revised in the Final EIR/EIS are indicated by a line in the margin.)

<u>Table</u>	<u>Title</u>	<u>Page</u>
S-1	Summary of Potential Impacts – by Alternative/Variation.....	S-12
2-1	Summary of Otay Mesa East POE Conceptual Plan Major Facilities at Full Buildout.....	2-23
2-2	Summary of Otay Mesa East POE Conceptual Plan – Gross Square Footage of Major Facilities at Full Buildout.....	2-24
2-3	Summary of Construction and Related Costs of the Project.....	2-32
3.1-1	Characteristics of Proposed Land Development Projects in the Cumulative Study Area	3.1-6
3.1-2	Characteristics of Proposed Public Works Projects in the Cumulative Study Area	3.1-13
3.2-1	Consistency of Project Alternatives and Variations with State, Regional, and Local Plans and Executive Orders	3.2-16
3.3-1	Growth Forecasts for Population, Housing, and Employment.....	3.3-2
3.4-1	Socioeconomic Study Area, County, and U.S. Population and Housing Characteristics.....	3.4-3
3.5-1	Partial Parcel Acquisitions for the Build Alternatives	3.5-3
3.5-2	Partial Parcel Acquisitions in the Area East of Sanyo Avenue (Draft EIR/EIS Build Alternatives).....	3.5-8
3.5-3	Partial Parcel Acquisitions for R/W Near Siempre Viva Road (Two Interchange Alternative Only)	3.5-10
3.5-4	Estimated Property Tax Impacts for Taxable Parcel Partial Acquisitions by Alternative/Variation	3.5-13
3.5-5	Estimated Annual Sales Tax Revenue Generated by Alternative/Variation, 2015 and 2030.....	3.5-14
3.8-1	Level of Service Definitions	3.8-2
3.8-2	Summary of Two-way Average Daily Traffic Forecasts at International Border Crossings.....	3.8-7
3.8-3	ADT on SR-11 Main Line between SR-905/SR-125 and Enrico Fermi Drive and Interchanges in 2015 and 2035	3.8-10
3.8-4	Comparison of 2035 No Build to Build Alternative Freeway Segments	3.8-13
3.8-5	Comparison of 2035 No Build to Build Alternative Roadway Segments.....	3.8-14
3.8-6	Comparison of 2035 No Build to Build Alternative Intersections.....	3.8-17
3.8-7	Daily Two-way Border Crossing Vehicle and Pedestrian Forecasts	3.8-22
3.11-1	Proposed Cross Drain Facilities in the Eastern Portion of the Study Area	3.11-7
3.12-1	Receiving Water Bodies 303(d) List Summary	3.12-8
3.13-1	Description of Mapped Soil Characteristics	3.13-4
3.16-1	National and California Ambient Air Quality Standards, Effects, and Sources	3.16-3
3.16-2	Ambient Air Quality Summary	3.16-7
3.16-3	Sensitive Receptors in the Project Area	3.16-9
3.16-4	CO Concentrations 2030.....	3.16-11

TABLE OF CONTENTS (cont.)

LIST OF TABLES (cont.)

<u>Table</u>	<u>Title</u>	<u>Page</u>
3.16-5	PM ₁₀ and PM _{2.5} Trends at the Donovan Correctional Center Monitoring Station	3.16-13
3.16-6	Total MSAT Emissions for 2015 and 2030	3.16-16
3.16-7	Estimated Construction Emissions – All Build Alternatives	3.16-20
3.17-1	Noise Levels of Common Activities	3.17-2
3.17-2	Existing Noise Levels at Receivers in the Project Area	3.17-3
3.17-3	Predicted Future Noise Levels for the Draft EIR/EIS Build Alternatives	3.17-6
3.17-4	Predicted Future Noise Levels in the Sanyo Avenue Area with the 46-foot Median Variation of the Draft EIR/EIS Alternatives	3.17-9
3.17-5	Construction Equipment Noise	3.17-11
3.19-1	Impact Summary for Natural Communities	3.19-8
3.19-2	Proposed Mitigation Summary for Direct Impacts to Natural Communities of Concern	3.19-14
3.20-1	Impact Summary for Jurisdictional Features	3.20-5
3.21-1	Special Status Plant Species Potentially Occurring or Known to Occur in the BSA	3.21-2
3.22-1	Special Status Animal Species Potentially Occurring or Known to Occur in the BSA	3.22-2
3.23-1	Listed Species and Critical Habitat Potentially Occurring or Known to Occur in the BSA	3.23-2
3.24-1	Invasive or Noxious Plant Species Found in the BSA	3.24-2
3.27-1	Anticipated Cumulative Public Works Projects and Impacts	3.27-7
3.27-2	Anticipated Cumulative Land Development Projects and Impacts	3.27-9
4-1	Future Noise Levels at Sensitive Receptor Locations – Project Build Alternatives	4-4
4-2	Average Difference in Regional CO ₂ Emissions – Draft EIR/EIS Alternatives	4-17
4-3	Climate Change Strategies	4-20
5-1	Project Coordination Groups and Organizations	5-4

TABLE OF CONTENTS (cont.)

LIST OF FIGURES		
<u>Figure</u>	<u>Title</u>	<u>On or Follows Page</u>
1-1	Regional Location Map	1-10
1-2	Project Area Map	1-10
1-3	Conceptual Otay Mesa East Cross-Border Circulation Plan	1-10
1-4	Phases of the SR-905 Project	1-10
2-1	Phase I Program Alternatives	2-42
2-2	Comparative Overview of the Preferred Alternative and the Two Interchange Alternative	2-42
2-3	Comparative Overview of the Draft EIR/EIS Build Alternatives	2-42
2-4	Cross-Sections of SR-11 in the Sanyo Avenue Area: Preferred Alternative and Two Interchange Alternative (with 22-foot Median)	2-42
2-5	Cross-Sections of SR-11 in the Sanyo Avenue Area: Two Interchange Alternative (with 22-foot Median) and 46-foot Median Variation	2-42
2-6	Cross-Sections of SR-11 in the Sanyo Avenue Area: One and No Interchange Alternatives (with 22-foot Median) and 46-foot Median Variation	2-42
2-7	Typical Cross-Section of SR-11 with 62-foot Median (All Build Alternatives)	2-42
2-8a	Major Project Features West of SR-905/SR-125/SR-11 Interchange (Preferred Alternative)	2-42
2-8b	Major Project Features West of SR-905/SR-125/SR-11 Interchange (Preferred Alternative)	2-42
2-9	SR-905/SR-125/SR-11 Interchange (Preferred Alternative)	2-42
2-10a	Major Project Features West of SR-905/SR-125/SR-11 Interchange (All Draft EIR/EIS Build Alternatives)	2-42
2-10b	Major Project Features West of SR-905/SR-125/SR-11 Interchange (All Draft EIR/EIS Build Alternatives)	2-42
2-11	SR-905/SR-125/SR-11 Interchange and Variations (All Draft EIR/EIS Alternatives)	2-42
2-12	Cross-Sections of SR-905 Modifications Under All Build Alternatives	2-42
2-13a	Preferred Alternative - Major Project Features Sheet A	2-42
2-13b	Preferred Alternative - Major Project Features Sheet B	2-42
2-13c	Preferred Alternative - Major Project Features Sheet C	2-42
2-13d	Preferred Alternative - Major Project Features Sheet D	2-42
2-14a	Two Interchange Alternative - Major Project Features Sheet A	2-42
2-14b	Two Interchange Alternative - Major Project Features Sheet B	2-42
2-14c	Two Interchange Alternative - Major Project Features Sheet C	2-42
2-14d	Two Interchange Alternative - Major Project Features Sheet D	2-42
2-15	Siempre Viva Road Full Interchange Variation of the Two Interchange Alternative	2-42
2-16a	One Interchange Alternative - Major Project Features Sheet A	2-42
2-16b	One Interchange Alternative - Major Project Features Sheet B	2-42
2-16c	One Interchange Alternative - Major Project Features Sheet C	2-42
2-16d	One Interchange Alternative - Major Project Features Sheet D	2-42
2-17a	No Interchange Alternative - Major Project Features Sheet A	2-42
2-17b	No Interchange Alternative - Major Project Features Sheet B	2-42
2-17c	No Interchange Alternative - Major Project Features Sheet C	2-42
2-17d	No Interchange Alternative - Major Project Features Sheet D	2-42

TABLE OF CONTENTS (cont.)

LIST OF FIGURES (cont.)		
<u>Figure</u>	<u>Title</u>	<u>On or Follows Page</u>
2-18	Typical Electronic Toll Collection Facilities.....	2-42
2-19	Updated Conceptual Layout of Mexican Otay II POE	2-42
2-20	Comparison of POE/CVEF Footprints	2-42
2-21	Preferred Alternative Conceptual Layout of the Otay Mesa East POE and CVEF	2-42
2-22	Draft EIR/EIS Conceptual Otay Mesa East POE and CVEF Layout	2-42
3.1-1	Existing Land Uses in the Land Use Study Area.....	3.1-22
3.1-2	Planned Land Uses in the San Diego/Tijuana Border Region	3.1-22
3.2-1	Regional Transportation Plan 2030 Revenue Constrained Network	3.2-20
3.2-2a	East Otay Mesa Specific Plan Circulation Plan Map.....	3.2-20
3.2-2b	East Otay Mesa Specific Plan Land Use Designations.....	3.2-20
3.2-3	Adopted Otay Mesa Community Plan Land Use Designations.....	3.2-20
3.3-1	Socioeconomic Study Area: Census Tract 100.15.....	3.3-10
3.4-1	Transit Service	3.4-14
3.8-1	2009 Existing ADT and LOS.....	3.8-28
3.8-2	2030 Traffic Forecasts from the EOMSP	3.8-28
3.8-3	2015 and 2035 Volumes and LOS – Preferred Alternative	3.8-28
3.8-4	2015 and 2035 Volumes and LOS – Two Interchange Alternative	3.8-28
3.8-5	2015 and 2035 Volumes and LOS - One Interchange Alternative	3.8-28
3.8-6	2015 and 2035 Volumes and LOS – No Interchange Alternative	3.8-28
3.8-7	2015 ADT and LOS – No Build Alternative	3.8-28
3.8-8	2035 ADT and LOS – No Build Alternative	3.8-28
3.8-9	2015 ADT and LOS - Preferred Alternative.....	3.8-28
3.8-10	2015 ADT and LOS – Two Interchange Alternative.....	3.8-28
3.8-11	2015 ADT and LOS - One Interchange Alternative	3.8-28
3.8-12	2015 ADT and LOS - No Interchange Alternative.....	3.8-28
3.8-13	2035 ADT and LOS - Preferred Alternative.....	3.8-28
3.8-14	2035 ADT and LOS - Two Interchange Alternative	3.8-28
3.8-15	2035 ADT and LOS - One Interchange Alternative	3.8-28
3.8-16	2035 ADT and LOS - No Interchange Alternative.....	3.8-28
3.9-1	Photo and Key View/Simulation Locations.....	3.9-28
3.9-2	Site Photographs 1 and 2	3.9-28
3.9-3	Site Photographs 3 and 4	3.9-28
3.9-4	Site Photograph 5.....	3.9-28
3.9-5	Site Photographs 6a and 6b.....	3.9-28
3.9-6	Site Photograph 7.....	3.9-28
3.9-7	Viewshed Map	3.9-28
3.9-8	Key View 1/Simulation 1	3.9-28
3.9-9	Key View 2/Simulation 2	3.9-28
3.9-10	Key View 3/Simulation 3	3.9-28
3.9-11	Key View 4/Simulation 4	3.9-28
3.9-12	Key View 5/Simulation 5	3.9-28

TABLE OF CONTENTS (cont.)

LIST OF FIGURES (cont.)

<u>Figure</u>	<u>Title</u>	<u>On or Follows Page</u>
3.9-13	Key View 6/Simulation 6	3.9-28
3.9-14	Key Views 7 and 8.....	3.9-28
3.9-15	Key Views 9 and 10.....	3.9-28
3.9-16	Conceptual Mitigation Measures	3.9-28
3.9-17	Conceptual Mitigation Measures	3.9-28
3.11-1	Project Area Drainage Map	3.11-10
3.11-2	Project Location within Local Hydrologic Designations.....	3.11-10
3.13-1	General Geology Map.....	3.13-10
3.13-2	Regional Fault Map	3.13-10
3.16-1	CO Hotspot Analysis Locations and Air Quality Monitoring Stations	3.16-22
3.17-1	Noise Receiver and Monitoring Locations	3.17-12
3.19-1	MSCP Designations and Proposed Mitigation Sites.....	3.19-16
3.19-2a	Vegetation/Impacts Map.....	3.19-16
3.19-2b	Vegetation/Impacts Map.....	3.19-16
3.19-3	Wildlife Corridors.....	3.19-16
3.19-4	Conserved Land.....	3.19-16
3.20-1	USACE Jurisdictional Areas/Impacts.....	3.20-10
3.20-2	CDFG Jurisdictional Areas/Impacts	3.20-10
3.21-1a	Special Status Species/Impacts.....	3.21-8
3.21-1b	Special Status Species/Impacts.....	3.21-8
3.21-1c	Special Status Species/Impacts.....	3.21-8
3.21-1d	Special Status Species/Impacts.....	3.21-8
3.23-1	Critical Habitat/Impacts.....	3.23-10
3.27-1	Cumulative Resource Study Areas	3.27-16
3.27-2	Anticipated Cumulative Development within the Project Vicinity	3.27-16
4-1	California Greenhouse Gas Forecast	4-14
4-2	Possible Effect of Traffic Operation Strategies in Reducing On-Road CO ₂ Emission	4-15
4-3	Fleet CO ₂ Emissions vs. Speed (Highway).....	4-16
4-4	Mobility Pyramid.....	4-18

LIST OF ACRONYMS AND ABBREVIATIONS

AADT	annual average daily traffic
AB	Assembly Bill
ACM	Asbestos Containing Materials
ACP	Asbestos cement pipe
ADA	Americans with Disabilities Act
ADT	average daily trips
AGR	agricultural supply
AI/TSE	anti-idling and truck stop electrification
AM	Morning
APCD	Air Pollution Control District
APE	Area of Potential Effect
APN	Assessor's Parcel Number
AQUA	aquaculture
ARB	California Air Resources Board
Basin Plan	RWQCB Water Quality Control Plan for the San Diego Basin
BCC	Bird of (federal) Conservation Concern
BIOL	preservation of biological habitats of special significance
BLM	Bureau of Land Management
BMI	benthic macroinvertebrate
BMO	Biological Mitigation Ordinance
BMPs	best management practices
BMS	building management system
BO	Biological Opinion
BRCA	Biological Resource Core Area
BRT	Bus Rapid Transit
BSA	Biological Study Area
BTS	U.S. Bureau of Transportation Statistics
CAAQS	California Ambient Air Quality Standards
CAL FIRE	California Department of Forestry and Fire Protection
Cal/OSHA	California Division of Occupational Safety and Health
Caltrans	California Department of Transportation
CBC	California Building Code
CBP	U.S. Customs and Border Protection
CCAA	California Clean Air Act
CCR	California Code of Regulations
CCTV	closed-circuit television
CDC	California Department of Conservation
CDFG	California Department of Fish and Game
CDMG	California Division of Mines and Geology
CEC	California Energy Commission
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act of 1980
CERFA	Community Environmental Response Facilitation Act
CESA	California Endangered Species Act

CGS	California Geological Survey
CFD	community facilities district
CFR	Code of Federal Regulations
CH ₄	methane
CHIN	Caltrans Highway Information Network
CHP	California Highway Patrol
CIA	Community Impact Assessment
City	City of San Diego
CLUP	Comprehensive Land Use Plan
CMS	changeable message signs
CNPS	California Native Plant Society
CO	carbon monoxide
CO ₂	carbon dioxide
COMM	commercial sport fishing
County	County of San Diego
COZEPP	Construction Zone Enhanced Enforcement Program
CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources
CSP	Cumulative Seasonal Precipitation
CT	census tract
CTC	California Transportation Commission
CVEF	Commercial Vehicle Enforcement Facility
CWA	Clean Water Act
cy	cubic yard(s)
dB	decibels
DET	Design Energy Target
Desk Guide	Caltrans Environmental Justice in Transportation Planning and Investments Desk Guide
DGS	California Department of General Services
DHS	U.S. Department of Homeland Security
DoD	U.S. Department of Defense
DOS	U.S. Department of State
DOT	U.S. Department of Transportation
DPLU	County Department of Planning and Land Use
DPP	design pollution prevention
DPW	County Department of Public Works
DSA	disturbed soil areas
DTSC	California Department of Toxic Substances Control
DU	dwelling unit
DWR	California Department of Water Resources
ECR	Environmental Commitments Record
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EO	Executive Order
EOMPOA	East Otay Mesa Property Owners Association
EOMSMD	East Otay Mesa Sewer Maintenance District
EOMSP	East Otay Mesa Business Park Specific Plan (formerly known as East Otay Mesa Specific Plan)
EOMSPA	East Otay Mesa Specific Plan Amendment (or Area)
EPA	U.S. Environmental Protection Agency

ESA	Endangered Species Act or Environmentally Sensitive Area
EST	estuarine habitat
ETC	Electronic Toll Collection
FAST	CBP's Fast and Secure Trade program
FCAA	Federal Clean Air Act
FDA	U.S. Food and Drug Administration
FEIS/FEIR	Final Environmental Impact Statement/Final Environmental Impact Report
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
FIFRA	Federal Insecticide, Fungicide and Rodenticide Act
Form 106	Form NRCS-CPA-106
FPPA	Farmland Protection Policy Act
FTA	Federal Transit Administration
FSTIP	Federal Statewide Transportation Improvement Program
FWG	Freight Working Group
FY	fiscal year(s)
GHG	Green House Gas
GMAP	Goods Movement Action Plan
GMS	Goods Movement Strategy
GSA	General Services Administration
H ₂ S	Hydrogen Sulfide
HA	Hydrolic Area
HCP	Habitat Conservation Plan
HDM	highway design manual
HDPE	High Density Polyethylene
HFC	hydrofluorocarbons
HHS	U.S. Department of Health and Human Services
HELIX	HELIX Environmental Planning, Inc.
HOV	high occupancy vehicle
HPSR	Historical Properties Survey Report
HSA	Hydrogeologic Site Assessment
HU	Hydrologic Unit
HUD	U.S. Department of Housing and Urban Development
HVAC	Heating, Ventilating and Air Conditioning
I-	Interstate
IBC	International Building Code
IBI	Index of Biotic Integrity
IBWC	International Boundary and Water Commission
ICE-IO	U.S. Immigration and Customs Enforcement – Investigations Office
IGR	Intergovernmental Review
IMPlan	Instituto Municipal de Planeación
IND	industrial service supply
IPCC	Intergovernmental Panel on Climate Change
IRIS	Integrated Risk Information System
ISA	Hazardous Waste Initial Site Assessment
ISC	Interagency Security Committee

ISL	inductive sign lighting
ITS	intelligent transportation systems
KM	kilometers
LBA Realty	LBA Realty Fund III – Company ILLC
LBP	lead-based paint
LED	light emitting diodes
LEDPA	least environmentally damaging practicable alternative
LEED	Leadership in Energy and Environmental Design
LHS	Location Hydraulic Study
LOS	level of service
LPC	Light Pollution Code
LPOE	Land Port of Entry
LSAA	Lake or Streambed Alteration Agreement
MAR	marine habitat
MBTA	Migratory Bird Treaty Act
MCE	Maximum Credible Earthquake
MEP	maximum extent practicable
Metro System	City of San Diego’s Metro Sewer System
mgd	million gallons per day
mg/kg	milligram per kilogram
MHPA	Multi-Habitat Planning Area
MIGR	migration of aquatic organisms
MLD	Most Likely Descendent
MLS	Mass Loading Station
MMT	million metric tons
MPG	miles per gallon
mph	miles per hour
MPO	Metropolitan Planning Organization
MS4	Municipal Separate Storm Sewer System
MSA	Major Statistical Area
MSAT	mobile source air toxics
MSCP	Multiple Species Conservation Program
MSE	Mechanically Stabilized Earth/Embankment
MSL	mean sea level
MTS	Metropolitan Transit Service
MUN	municipal and domestic supply
MUP	Major Use Permit
MWD	Metropolitan Water District of Southern California
NAAQS	National Ambient Air Quality Standards
NAC	noise abatement criteria
NADR	Noise Abatement Decision Report
NAFTA	North American Free Trade Agreement
NAHC	Native American Heritage Commission
NATA	National Air Toxics Assessment
NAV	navigation
NCCP	Natural Community Conservation Planning
NEPA	National Environmental Policy Act

NES	Natural Environment Study
NHPA	National Historic Preservation Act of 1966, as amended
NHTSA	National Highway Traffic Safety Administration
NII	Non-Intrusive Inspection
N ₂ O	nitrous oxide
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NOP	Notice of Preparation
NO ₂	nitrogen dioxide
NO _x	Nitrogen Oxides
NPDES	National Pollutant Discharge Elimination System
NPMS	National Pipeline Mapping System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NSR	noise study report
NWP	Nationwide Permit
O ₃	ozone
OHWM	ordinary high water mark
OHV	Off-highway vehicle
OMCP	Otay Mesa Community Plan
OMTS	Otay Mesa Trunk Sewer
OSHA	Occupational Safety & Health Administration
OSP	Otay Subregional Plan
OVRP	Otay Valley Regional Park
OWD	Otay Water District
PA	Programmatic Agreement
PAHs	polycyclic aromatic hydrocarbons
Pb	lead
PCBs	polychlorinated biphenyls
PCE	Primary Constituent Elements
PDS	Program Development Study (or Project Design Study)
PDT	Project Development Team
PEIR/PEIS	Program Environmental Impact Report/Statement
PFC	perfluorocarbons
PG Films	PG Films, LLC
PID	Project Initiation Document
PM	particulate matter (or afternoon)
PM _{2.5}	fine particulate matter with a diameter of 2.5 microns or less
PM ₁₀	fine particulate matter with a diameter of 10 microns or less
PM Guidance	Transportation Conformity Guidance for Qualitative Hot-spot Analyses in PM _{2.5} and PM ₁₀ Nonattainment and Maintenance Areas
POAQC	projects of air quality concern
POE	port of entry
POM	polycyclic organic matter
PMP	Paleontological Mitigation Plan
ppm	parts per million
PRA	Paleontological Resource Assessment

PRC	Public Resources Code
Protocol	Transportation-Level Carbon Monoxide Protocol
psi	pounds per square inch
PSR	Project Study Report
PUC	Public Utilities Code
PVC	polyvinyl chloride
RAP	relocation assistance program
RARE	rare, threatened and endangered species
RCA	resource conservation area
RCP	Regional Comprehensive Plan (or Resource Conservation Plan)
RCRA	Resource Conservation and Recovery Act of 1976
REC-1	contact recreation
REC-2	non-contact recreation
ROD	Record of Decision
ROG	Reactive Organic Gases
RPO	Resource Protection Ordinance
RSA	Resource Study Area
RTIP	Regional Transportation Improvement Program
RTP	Transportation Plan for the San Diego Region (also referred to as Mobility 2030)
R/W	right-of-way
RWQCB	San Diego Regional Water Quality Control Board
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
SAMP	Special Area Management Plan
SANDAG	San Diego Association of Governments
Sanyo	Sanyo E and E Corporation
SB	Senate Bill
SBI	Secure Border Initiative
SCS	Sustainable Communities Strategy
SCT	Mexican Secretariat of Communication and Transportation
SDAB	San Diego Air Basin
SDCWA	San Diego County Water Authority
SDG&E	San Diego Gas & Electric
SDMSE	San Diego Medical Services Enterprise
SDNHM	San Diego Natural History Museum
SDRFPD	San Diego Rural Fire Protection District
Sempra	Sempra Energy Company
SENTRI	Secure Electronic Network for Travelers Rapid Inspection
SER	standard environmental reference
sf	square foot (feet)
SF ₆	sulfur hexafluoride
SHELL	shellfish harvesting
SHPO	State Historic Preservation Officer
SIDUE	Mexican Secretariat of Urban Development of the State of Baja California
SIP	State Implementation Plan
SMP	Soil Management Plan
SO ₂	sulfur dioxide

SPA	specific plan amendment
SPWN	spawning, reproduction and/or early development
SR	State Route
Special Animal	taxa of greatest conservation need to CDFG
SRA	Subregional Areas
SRE	Mexican Secretariat of Foreign Relations
SSC	State Species of Special Concern
Subarea Plan	MSCP Subarea Plan
SVOCs	semi-volatile organic compounds
SWAMP	Surface Water Ambient Monitoring Program
SWDR	Storm Water Data Report
SWIS	Solid Waste Information System
SWMP	Storm Water Management Plan
SWP	State Water Project
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TDCs	Targeted Design Constituents
TDM	transportation demand management
TDS	Total Dissolved Solids
TMC	transportation management center
TMDL	total maximum daily load
TMP	Traffic Management Plan
TMS	traffic loop monitoring stations
TNM	Traffic Noise Model
TPH	total petroleum hydrocarbons
Traffic Report	Tier II Traffic Technical Report
TSCA	Toxic Substances Control Act
TSM	transportation system management
UFC	Unified Facilities Criteria
U.S.	United States
USACE	United States Army Corps of Engineers
USC	United States Code
USDA	U.S. Department of Agriculture
USFWS	United States Fish and Wildlife Service
USSCS	U.S. Soil Conservation Service
UST	underground storage tank
US-VISIT	U.S. Visitor and Immigrant Status Indicator Technology project
VACIS	vehicle and cargo inspection system
V/C	volume-to-capacity
VIA	Visual Impact Assessment
VOCs	volatile organic compounds
VMT	vehicle miles traveled
VRPA	VRPA Technologies
WARM	warm freshwater habitat
WDRs	Waste Discharge Requirements
Weston	Weston Solutions, Inc.
WHTI	Western Hemisphere Travel Initiative

WILD	wildlife habitat
WIM	weigh-in-motion
WMA	Watershed Management Area
WPCP	Water Pollution Control Plan
WURMP	Watershed Urban Runoff Management Program
WUS	Waters of the United States
WWM	Wastewater Management
WWTP	Wastewater Treatment Plant
°F	degrees Fahrenheit
µg/m ³	micrograms per cubic meter

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Summary

SUMMARY

The California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA) propose the construction of the following facilities in San Diego County (County): a new toll highway, State Route (SR-) 11, with connectors to SR-905 and associated modifications to SR-905; the new Otay Mesa East Port of Entry (POE); and a Commercial Vehicle Enforcement Facility (CVEF). The project analyzed in this document (referenced herein as the “proposed project” or “project”) includes these three major elements in the general location shown on Figure 1-1, *Regional Location Map*.

The proposed project is a joint project by Caltrans and FHWA, and is subject to state and federal environmental review requirements. Project documentation, therefore, has been prepared in compliance with both the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). FHWA is the lead agency under NEPA. Caltrans is the lead agency under CEQA.

FHWA/Caltrans have prepared this Final Environmental Impact Report/Environmental Impact Statement (Final EIR/EIS) to inform the public and decision-makers about the potential environmental effects of the proposed project, to identify the Preferred Alternative for the proposed project and to describe the potential environmental effects resulting from the identification of the Preferred Alternative. It is based on the associated technical studies and input received during the public comment period.

This Final EIR/EIS contains:

- A line in the margin to indicate where substantive, non-editorial changes between the draft and final document have occurred;
- Copies of the Notice of Availability and Notice of Completion for the Draft EIR/EIS;
- A list of persons, organizations, and public agencies that commented on the Draft EIR/EIS during the circulation period (December 3, 2010 to February 1, 2011);
- Copies of comments received in response to the Draft EIR/EIS; and,
- Caltrans/FHWA’s responses to substantive environmental points raised in the review and consultation process.

The Final EIR/EIS discusses the proposed project and the environmental compliance process; discusses the purpose and need for the project; describes the proposed project alternatives; discusses existing environmental conditions in the project area; and assesses the proposed project’s potential environmental impacts. The document also addresses the extent to which the proposed project would incrementally add to environmental effects caused by other projects; identifies substantial environmental effects of the proposed project that could not be avoided if it is implemented; describes environmental effects found not to have the potential to result in significant environmental effects and therefore not requiring detailed analysis in the EIR/EIS; and provides lists of personnel and agencies contacted during EIR/EIS preparation, references cited, EIR/EIS preparers, and acronyms and abbreviations used.

The SR-11 and Otay Mesa East POE/CVEF facilities ultimately would be designed, financed, built and operated by multiple agencies, with this responsibility being shared by Caltrans/FHWA, the San Diego Association of Governments (SANDAG), the U.S. General Services Administration (GSA), U.S. Customs and Border Protection (CBP), the California Department of General Services (DGS), and the California Highway Patrol (CHP). For the purposes of this environmental document, Caltrans and FHWA are the CEQA/NEPA lead agencies, and the remaining agencies have been cooperating and/or participating agencies under NEPA and/or SAFETEA-LU.¹ Responsible agencies under CEQA include the California

¹ The Federal Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), passed in August 2005, authorizes the federal surface transportation projects for highways, highway safety and transit.

Transportation Commissions (CTC), the City of San Diego (City), the County, the California Department of General Services (DGS), SANDAG, the California Department of Fish and Game (CDFG), the Regional Water Quality Control Board (RWQCB), and the California Public Utilities Commission (CPUC). GSA is also conducting the POE Program Development Study (PDS) that is used in this Final EIR/EIS to define the future development concept for the POE. It is anticipated that FHWA and Caltrans would approve this Final EIR/EIS document and adopt a Record of Decision (ROD) for the entire Tier II project. It is anticipated that all of the identified agencies would work together in the implementation of the project.

It should be noted that, at the time of publication of this Final EIR/EIS, the designs of the POE and CVEF are not as advanced as the design of SR-11. As the designs advance, it will be necessary for the lead agency(s) to conduct reviews to determine whether additional impacts are likely to occur. If new impacts are identified, additional environmental review and documentation may be required.

This document is a joint CEQA/NEPA document. Some impacts determined to be significant under CEQA may not lead to a determination of significance under NEPA, because NEPA is concerned with the significance of the project as a whole, while CEQA separately evaluates the significance of project impacts with respect to each environmental issue

S.1 OVERVIEW OF PROJECT AREA

Proposed SR-11 would extend generally east and south for approximately 2.1 miles from the east side of the approved SR-905/SR-125 Interchange (near Harvest Road), terminating at the proposed Otay Mesa East POE/CVEF site at the United States (U.S.) - Mexico international border. Extending west from approximately Harvest Road, the project would also include approximately 2.1 miles of connectors linking SR-11 to SR-905, and associated modifications to SR-905. The majority of SR-11 and the entire POE/CVEF site would be located within the County, in the East Otay Mesa Specific Plan (EOMSP; recently renamed as the East Otay Mesa Business Park Specific Plan) community planning area, while the westernmost portion of proposed SR-11, its connectors, and associated modifications to SR-905 would occur primarily within state right-of-way (R/W) and would be located within the City, in the Otay Mesa Community Plan (OMCP) area.

SR-11 is included in the SANDAG 2050 Revenue Constrained Highway Network of the Regional Transportation Plan (RTP; SANDAG 2011); the 2010 Regional Transportation Improvement Program (RTIP) as amended (SANDAG 2011), which covers Fiscal Years 2010/2011 through 2014/15; and the SAFETEA-LU List of High Priority Projects in San Diego. It is shown conceptually on the circulation elements of the EOMSP and the County General Plan as well as the OMCP and the City General Plan. The Otay Mesa East POE is also shown on the County's land use plan for the EOMSP, and in the RTP.

Major actions proposed by other governmental agencies in the Otay Mesa area include: Caltrans construction of SR-905 and the SR-905/SR-125 Interchange, and the I-805 Managed Lanes South project; the GSA/CBP improvements to the existing Otay Mesa POE and the San Ysidro POE; County and City road improvement projects including widening a portion of Otay Mesa Road, widening a border corridor truck route near La Media Road, and building Lonestar Road (a new road); construction of new South Bay Bus Rapid Transit (BRT) facilities by SANDAG; construction of a new fire station by the San Diego Rural Fire Protection District (SDRFPD); and construction of the Otay Mesa Recycled Water Supply Link by the Otay Water District.

S.2 PURPOSE AND NEED

The proposed facilities are being studied under a two-tier process, pursuant to Section 1508.28 of the federal Council on Environmental Quality (CEQ) Guidance and Sections 15152 and 15168 of CEQA.

Under the first tier (referred to as Phase I) a Program Environmental Impact Report/Phase I Environmental Impact Statement (PEIR/PEIS) was prepared and approved/certified in 2008; this document addressed SR-11 and the POE at a programmatic level and identified the preferred location of the facilities. As a result of the Phase I environmental process, a conditional Presidential Permit for the project (included as Appendix A of this Final EIR/EIS) was granted by the U.S. State Department in November 2008. The proposed project would constitute the second tier of planning and environmental clearance for the development of a new POE in the San Diego/Tijuana region, along with development of associated SR-11, which would connect the new POE to the existing and planned roadway system in the area, and a new CVEF for CHP inspection of trucks entering California from Mexico. This Tier II Final EIR/EIS addresses several design and operational alternatives for the POE, SR-11 and the CVEF. The Phase I PEIR/PEIS identified the following project purpose, which also applies to the Tier II project:

- Increase inspection processing capacities for commercial and personal vehicles and pedestrians in the San Diego/Tijuana region
- Reduce northbound vehicle and pedestrian queues and wait times to cross the border at other POEs in the region
- Accommodate projected increases in international trade and personal cross-border travel in the region in a safe and secure manner
- Contribute to reductions in congestion at existing POEs
- Accommodate commercial goods movement and cross-border travel to and from the Otay Mesa East POE

The new POE is needed because the capacities of the existing POEs in the region are currently being exceeded, causing excessive border wait times for those engaged in commercial and personal vehicle trips. Trade and travel in this area are forecasted to continue to grow, and border delays are expected to increase correspondingly. Transportation and land use planning agencies on both sides of the border have identified the longer-term need for a third border crossing and associated transportation facilities in the San Diego/Tijuana area. While various proposed improvements to the existing POEs can enhance the flow of goods and people, growth is outstripping capacity at the existing facilities. On the Mexican side of the border, the two existing POEs are particularly constrained from expansion due to surrounding dense development. Even with maximum renovation at the regional POEs, congestion levels would continue to increase. Local, regional and bi-national land use studies (cited in Chapter 1.0) have identified the eastern side of Otay Mesa as the preferred general location for a new POE, and a corresponding POE site has been identified on the Mexico side of the border. With implementation of the POE, SR-11 becomes a critical facility to connect the POE with the regional highway system north of the border via SR-905 and SR-125, and to adequately handle the increased commercial and passenger vehicle traffic associated with a POE. Similarly, the proposed POE necessitates access to an existing or new CVEF for the CHP to conduct safety/weight inspections on incoming trucks.

S.3 ALTERNATIVES CONSIDERED

The alternatives addressed in this Final EIR/EIS were developed by a multi-disciplinary team to achieve the project purpose and need while avoiding or minimizing environmental impacts. Under evaluation in this document are three build alternatives (referred to as the Two Interchange, One Interchange, and No Interchange alternatives), with several design/operational variations, as well as the No Build Alternative, which were evaluated in the Draft EIR/EIS. In addition, as discussed in Section S.10, a Preferred Alternative has been identified that considers agency and public input received during the Draft EIR/EIS public review process and represents a refinement of the Two Interchange Alternative, that also incorporates the SR-125 Connector Variation and a connection associated with the Siempre Viva Road Full Interchange Variation; these variations were also addressed in the Draft EIR/EIS. The Preferred Alternative

is evaluated in this Final EIR/EIS as a fourth build alternative. The alternatives that were analyzed in the Draft EIR/EIS (hereafter referenced as the Draft EIR/EIS build alternatives in this Final EIR/EIS) share the same design for the proposed improvements to SR-905 to accommodate the connection with SR-11, as well as the same conceptual designs for the POE and CVEF. The Preferred Alternative includes modifications to the eastern POE boundary resulting in a reduction in the overall POE area to reduce impacts to sensitive species; changes to the internal POE layout to reflect the latest design concept under evaluation in the PDS; refinements and additions to conceptual plans for utility relocations and drainage facilities; design refinements at the SR-905/SR-125/SR-11 Interchange; and design refinements to accommodate an additional connection to the Siempre Viva Road Interchange.

SR-11 was assumed to be a toll highway under all of the Draft EIR/EIS baseline build alternatives, and a no toll variation of these alternatives was evaluated as well. The Preferred Alternative is a tolled facility, consistent with the RTIP. State legislation has approved SANDAG as the tolling agency for future SR-11 and a toll highway is reflected in the 2050 RTP. The non-toll variation of the Draft EIR/EIS build alternatives was included to facilitate the evaluation of toll-related impacts, particularly with respect to Environmental Justice populations, per Executive Order (EO) 12898, Federal Actions to Address Environmental Justice in Minority and Low Income Populations. The differences associated with the Draft EIR/EIS build alternatives were reflected in the designs of SR-11, particularly with respect to the locations and configurations of interchanges, underpasses, and overpasses. Figure 2-2, *Comparative Overview of the Preferred Alternative and the Two Interchange Alternative*, and Figure 2-3, *Comparative Overview of the Draft EIR/EIS Build Alternatives*, compare the major features of the build alternatives. Briefly, the alternatives may be differentiated as follows:

- The Preferred Alternative includes two interchanges that would be constructed along SR-11 at Enrico Fermi Drive and the future extension of Siempre Viva Road, as well as an overcrossing at the future extension of Alta Road and an undercrossing at Sanyo Avenue. The interchange at Enrico Fermi Drive would be a full interchange, approximately one mile east of the SR-905/SR-125/SR-11 Interchange, and the interchange at Siempre Viva Road (which would be approximately one mile farther east) would be a half interchange that would also allow northbound commercial vehicles to leave the CVEF and access Siempre Viva Road directly, without accessing SR-11. The eastern POE boundary was shifted to the west for this alternative, when compared to the Two, One and No Interchange alternatives that were evaluated in the Draft EIR/EIS.
- The Two Interchange Alternative includes two interchanges that would be constructed along SR-11 at Enrico Fermi Drive and the future extension of Siempre Viva Road, as well as an overcrossing at the future extension of Alta Road and an undercrossing at Sanyo Avenue. The interchange at Enrico Fermi Drive would be a full interchange, approximately one mile east of the SR-905/SR-125/SR-11 Interchange. Two design options are considered for the interchange at Siempre Viva Road (which would be approximately one mile farther east); a half interchange (“baseline” design) and a full interchange (variation).
- The One Interchange Alternative would incorporate a single full interchange at the future extension of Alta Road, approximately 1.4 miles east of the SR-905/SR-125/SR-11 Interchange. This alternative would also include overcrossings at Enrico Fermi Drive and the future extension of Siempre Viva Road, and an undercrossing at Sanyo Avenue.
- The No Interchange Alternative would have no interchanges along the proposed alignment of SR-11. Overcrossings would be built at Enrico Fermi Drive, and at the future extensions of Alta Road and Siempre Viva Road, and an undercrossing would be built at Sanyo Avenue.

Several potential designs were considered in the Draft EIR/EIS for the SR-905/ SR-125/SR-11 Interchange. The Preferred Alternative and any of the EIR/EIS build alternatives would include the eastbound SR-905 to eastbound SR-11 connector and the westbound SR-11 to westbound SR-905 connector. Variations considered in the Draft EIR/EIS for this interchange included the SR-125 Connector Variation to provide a flyover connecting southbound SR-125 to eastbound SR-11 (a modified design of this variation has been incorporated into the Preferred Alternative) and the SR-905/SR-125/SR-11 Full Interchange Variation (which, in addition to the flyover connector, would also add connectors from westbound SR-905 to eastbound SR-11 and from westbound SR-11 to eastbound SR-905; this variation has not been incorporated into the Preferred Alternative). Finally, a variation was considered that would provide a 46-foot median between the existing buildings east of Sanyo Avenue, instead of the proposed “baseline” 22-foot median in this segment of the project. High Occupancy Vehicle (HOV) lanes are not included in this project, but other Transportation Systems Management/Transportation Demand Management (TSM/TDM) measures are incorporated into all of the build alternatives and variations. The project would accommodate pedestrian pickup/dropoff, and there would be no toll charged for pedestrians and bicyclists to cross the border. The project also includes space for a potential future transit center (to be constructed by others).

SR-11 is proposed to be constructed and operated as a toll facility under all of the build alternatives, including the Preferred Alternative, with SANDAG as the toll authority under state legislation (Division 17 of the Streets and Highways Code, Sections 31460 through 31482 – the Otay Mesa East Toll Facility Act). The proposed toll system is currently anticipated to include toll collection in both directions and the use of “smart technology” such as FasTrak, although additional toll-related options are still under evaluation. SANDAG and Caltrans, along with partner agencies in Mexico, have initiated a Traffic and Revenue Study that will evaluate in detail issues related to toll pricing and the financial feasibility of the project, but it is anticipated that tolls would vary by vehicle type, and variable congestion pricing would be implemented for both commercial and passenger vehicles. This system is intended to provide a financial incentive to encourage accessing the POE during non-peak hours, thereby reducing peak hour congestion. A draft of the Traffic and Revenue Study is scheduled to be completed in Spring 2012. The document will discuss the process, expected outcome and the overall strategy of the financing capacity related to tolling structure for the proposed project. Once the study is complete, it will be used in obtaining toll revenue bonds to finance the project, and will be presented to the SANDAG Board of Directors, to assist them in setting the toll rates. As part of the process, the public will be provided the opportunity to attend meetings and review and comment on the available documentation. Upon its completion, the Traffic and Revenue Study will provide the most comprehensive analysis of the project's financial feasibility. Until that time, the 2006 SANDAG/Caltrans *State Route 11 Toll Road and East Otay Mesa Port of Entry Financial Feasibility Study* is considered to represent current information regarding the financial feasibility of the project.

Preliminary cost projections provided in the 2006 financial feasibility study suggest that anticipated non-peak to peak hour tolls could range from approximately \$32 to \$47.30 for commercial vehicles, and \$1.60 to \$7 for passenger vehicles (SANDAG/Caltrans 2006a). Competitive pricing for transit vehicles may also be employed to encourage transit ridership and reduce passenger vehicle traffic, at the discretion of SANDAG. Pedestrians and bicycles crossing the border but not accessing SR-11 would not be subject to a toll. As noted above, a variation of the Draft EIR/EIS build alternatives in which vehicles are not subject to a toll (the No Toll Variation) was also analyzed to facilitate socioeconomic and environmental justice considerations related to a tolled facility.

The project alternatives and variations are described below, focusing first on the features of SR-11 that all of the alternatives share in common; then describing the unique aspects of SR-11 that define each of the alternatives and variations; and finally, describing the POE and CVEF, which have been modified for the Preferred Alternative, compared to the design that was evaluated for the Tier II Draft EIR/EIS build alternatives.

State Route 11

Common Major SR-11 Features Under All Build Alternatives

Under each of the build alternatives, including the Preferred Alternative, SR-11 would be constructed as a 2.1-mile, four-lane toll highway, with two lanes in each direction, plus auxiliary lanes and connectors. It would extend east from the vicinity of Harvest Road (near the future SR-125/SR-905 Interchange currently under construction) for approximately 1.5 miles, before curving to the southeast near Alta Road and continuing for approximately 0.6 mile to connect with the POE/CVEF site. To link SR-11 to SR-905 and accommodate merging vehicles, it would be necessary to modify the planned eastern portion of SR-905. SR-11 would be located midway between Otay Mesa Road and Airway Road for most of its length, and would cross four local surface streets: Sanyo Avenue, Enrico Fermi Drive, Alta Road, and Siempre Viva Road. Undercrossings, overcrossings or interchanges would be provided at each of these locations, depending on the project alternative.

Traffic studies have indicated that a four-lane facility would be adequate to accommodate projected traffic through at least 2035. The median would be 22 feet wide beginning at Sanyo Avenue, to minimize impacts to nearby buildings, before widening to a 62-foot median width leading up to the POE. The proposed 62-foot median width in the eastern portion of SR-11 is intended to make SR-11 adaptable for potential safety and security needs, and to provide the flexibility to construct additional lanes on approach to the POE, if these are found to be necessary to meet future vehicle inspection requirements. This additional right-of-way would help ensure access to the new POE by emergency responders, facilitate evacuation of the POE if necessary, or allow southbound traffic to be turned around if the POE had to be closed for emergency security concerns. Concrete barriers (three feet tall) would extend along each side of the roadway in the Sanyo Avenue area, and an additional three-foot-tall concrete barrier would extend along the median. Although the number of lanes through this area would vary by alternative, all of the build alternatives would include the 22-foot median in the Sanyo Avenue area. A variation of the Draft EIR/EIS build alternatives incorporating a 46-foot median instead of the 22-foot median is presented later in this chapter. The Preferred Alternative would incorporate a 22-foot median in the Sanyo Avenue area.

Modifications to SR-905 to accommodate its connections with SR-11 would occur between the SR-905/SR-125/SR-11 Interchange and the SR-905/Britannia Boulevard Interchange, and would be entirely within the existing R/W for SR-905. These modifications would include the construction of two-lane connectors between the two highways, the addition of an auxiliary lane between La Media Road and the eastbound SR-11 connector, and the tapering of these connectors to match SR-905 in the vicinity of the Britannia Boulevard Interchange. On the westbound side of SR-905, the build alternatives would also construct a ramp from SR-11 to tie into the planned SR-905 and SR-125 off-ramps to La Media Road. The Preferred Alternative design of the SR-905 modifications and connectors represents a refinement of the Draft EIR/EIS design for this portion of the project.

At the Sanyo Avenue undercrossing, the surface of SR-11 would be approximately 24 feet above Sanyo Avenue, permitting the local road to pass under the new highway, but allowing no interchange of traffic between them. From Sanyo Avenue eastward, SR-11 would pass between existing industrial buildings and would be supported by retaining walls for a distance of approximately 1,250 feet as it slopes gradually downward to meet the surrounding grade. The walls and headwall structure at Sanyo Avenue would be approximately 26 and 22 feet high on the south and north sides of SR-11, respectively, with the highest portions of the walls located nearest to Sanyo Avenue. In this area, the project would require partial acquisitions of existing developed properties. This design is intended to avoid the use of extensive fill slopes to support the elevated roadway, which would have resulted in additional acquisition of existing developed industrial property along both sides of SR-11 in this area. Proposed SR-11 in this area would be similar to the local access connection between SR-905 and Enrico Fermi Drive that was approved as part of

the SR-905 project. It would include a connector from westbound SR-11 to northbound SR-125, in lieu of a ramp from Enrico Fermi Drive to SR-125. While an undercrossing would be constructed at Sanyo Avenue under each of the build alternatives, the width of roadway (number of lanes) would vary depending upon the alternative.

The above features would be common to all of the build alternatives. The unique characteristics of each alternative are described below.

Preferred Alternative – Additional Major Features

The Preferred Alternative would include the construction of interchanges along SR-11 at Enrico Fermi Drive and Siempre Viva Road, as well as an overcrossing at Alta Road. The undercrossing at Sanyo Avenue would be constructed to a width of approximately 116 feet, and would include an auxiliary lane in each direction, in addition to the two standard travel lanes in each direction. Similar to the SR-125 Connector Variation analyzed in the Draft EIR/EIS, the Preferred Alternative would add a southbound SR-125 to eastbound SR-11 connector to the current SR-905/SR-125 Interchange and incorporate an updated version of the SR-905 modifications and connectors.

Under the Preferred Alternative, the Enrico Fermi Drive Interchange would be located approximately one mile east of the SR-905/SR-125/SR-11 Interchange, and approximately one mile west of the interchange proposed at Siempre Viva Road. The Enrico Fermi Drive Interchange would be a standard full-diamond design, with on- and off-ramps for both eastbound and westbound SR-11 (and automated toll facilities along the westbound on-ramp and eastbound off-ramp).

Alta Road would be elevated on a structure to pass over SR-11, with no interchange of traffic between the highway and the local road.

The proposed Siempre Viva Road Interchange under the Preferred Alternative would be a modified half interchange, with separate ramps for passenger-only and commercial-only traffic into and out of the new POE/CVEF. This partial interchange would also provide an off-ramp to Siempre Viva Road from eastbound SR-11, an on-ramp from Siempre Viva Road to westbound SR-11, and one-way access from the POE/CVEF to Siempre Viva Road for commercial vehicles only. The interchange would not provide access from Siempre Viva Road to the POE via eastbound SR-11, nor would it provide public access to Siempre Viva Road for passenger vehicles exiting the POE. All passenger vehicles exiting the POE would have to take westbound SR-11, with the exception of POE/CVEF employees.

Two Interchange Alternative – Additional Major Features

Similar to the Preferred Alternative, the Two Interchange Alternative would include the construction of interchanges along SR-11 at Enrico Fermi Drive and Siempre Viva Road, as well as an overcrossing at Alta Road. The undercrossing at Sanyo Avenue, Enrico Fermi Drive Interchange, and overcrossing at Alta Road would be as described above for the Preferred Alternative. Under the Two Interchange Alternative, the proposed Siempre Viva Road Interchange, would be a half interchange, with separate ramps for passenger-only and commercial-only traffic into and out of the new POE/CVEF, but without the one-way access from the POE/CVEF to Siempre Viva Road for commercial vehicles proposed under the Preferred Alternative. Like the Preferred Alternative, this interchange would not provide access from Siempre Viva Road to the POE via eastbound SR-11, nor would it provide public access to Siempre Viva Road for travelers exiting the POE via westbound SR-11, although access to and from the POE would be accommodated for POE/CVEF employees and pedestrian pick-up and drop-off.

Siempre Viva Road Full Interchange Variation

A variation on the Two Interchange Alternative involving construction of a full interchange at Siempre Viva Road is also under consideration. This variation would include separate ramps for commercial-only traffic and for passenger-only traffic to provide access from Siempre Viva Road to the POE; as well as a ramp for northbound passenger-only traffic from the POE to access Siempre Viva Road. Direct access would be provided for commercial-only traffic to Siempre Viva Road from the CVEF.

One Interchange Alternative – Additional Major Features

Under the One Interchange Alternative, proposed SR-11 would be constructed with a single, full interchange at Alta Road, approximately 1.4 miles east of the SR-905/SR-125/SR-11 Interchange. An undercrossing at Sanyo Avenue would be as described above; it would include only two travel lanes (no auxiliary lane). SR-11 would pass under Enrico Fermi Drive, with no interchange of traffic between the highway and the local road. In contrast to the Preferred Alternative, SR-11 at Siempre Viva Road would be constructed as an overcrossing, rather than an interchange. The overcrossing would include separate ramps for passenger-only and commercial-only traffic into and out of the new POE/CVEF, as described for the Preferred Alternative, but no permanent direct access would be provided between SR-11 and Siempre Viva Road.

The One Interchange Alternative would have a slightly smaller footprint between Sanyo Avenue and Enrico Fermi Drive than would the Preferred and Two Interchange alternatives, due to the elimination of the Enrico Fermi Drive Interchange and its associated auxiliary lanes.

No Interchange Alternative – Additional Major Features

Under the No Interchange Alternative, no interchanges would be constructed along proposed SR-11; all traffic accessing SR-11 from either SR-905 or SR-125 would have to proceed to the POE. An undercrossing structure would be provided at Sanyo Avenue, and overcrossings would be constructed at Enrico Fermi Drive, Alta Road, and at Siempre Viva Road. The overcrossing at Alta Road would be similar to that described for the Preferred Alternative, while overcrossings at Enrico Fermi Drive and Siempre Viva Road would be similar to those described for the One Interchange Alternative. As in the case of the One Interchange Alternative, the No Interchange Alternative would have a slightly smaller footprint between Sanyo Avenue and Enrico Fermi Drive than would the Preferred and Two Interchange alternatives. This condition is based on the elimination of the Enrico Fermi Drive Interchange and its associated auxiliary lanes, with the design of the Sanyo Avenue undercrossing to be similar to that described above for the One Interchange Alternative.

Variations on the Draft EIR/EIS Build Alternatives

A number of design and operational variations, applicable to any of the Draft EIR/EIS build alternatives (but not to the Preferred Alternative), are being evaluated, as outlined below.

No Toll Variation

The No Toll Variation would involve SR-11 operating as a freeway instead of a toll highway. The principal design difference under this variation would be the lack of toll-related structures, such as toll administration and FasTrak facilities.

46-foot Median Variation

Under this variation, the SR-11 median would be 46 feet wide instead of 22 feet wide in the vicinity of Sanyo Avenue.

SR-125 Connector Variation

Under the SR-125 Connector Variation, the southbound SR-125 to eastbound SR-11 connector would be added to the interchange. A local connector ramp from Enrico Fermi Drive to northbound SR-125 was approved under the SR-905 project; all of the proposed project build alternatives assume a similar direct connector from westbound SR-11 to northbound SR-125. The addition of the southbound SR-125 to eastbound SR-11 connector under this variation would complete the direct link between the two highways.

SR-905/SR-125/SR-11 Full Interchange Variation

The SR-905/SR-125/SR-11 Full Interchange Variation would include the connector described under the SR-125 Connector Variation, as well as two additional connectors: westbound SR-11 to eastbound SR-905, and westbound SR-905 to eastbound SR-11. This would provide full connectivity among the three highways.

Otay Mesa East POE

GSA has prepared a Program Development Study (PDS; GSA 2011) to provide a more advanced design concept for the proposed Otay Mesa East POE. For purposes of the Draft EIR/EIS analysis, a conceptual development plan was prepared by Caltrans in cooperation with GSA, based on a related GSA feasibility study (GSA 2008) and a number of design assumptions that were current at the time. These assumptions represented a conceptual design of the POE, which has been revised for the Final EIR/EIS based on the results of the PDS. Under GSA's planning process, the POE design in the PDS is still conceptual and additional modifications are anticipated. After final design of the POE, the Tier II Final EIR/EIS conclusions will be evaluated to determine if additional environmental analysis is necessary.

Consideration of agency and public input received during the Draft EIR/EIS public review process resulted in adjusting the eastern POE boundary westward as part of the Preferred Alternative to further reduce impacts to listed species. The internal layout of the POE has also been updated in this Final EIR/EIS to reflect the most current conceptual POE design in the PDS (GSA 2011). These refinements would have applied to any of the Draft EIR/EIS build alternatives, had they been identified as the Preferred Alternative. The modified POE for the Preferred Alternative would occupy approximately 101 acres (as opposed to 106 acres which was studied in the Draft EIR/EIS), and would accommodate northbound and southbound commercial and passenger traffic, as well as pedestrians and bicycles. The POE site would be accessed from the north by SR-11. From the south, entry would be through the proposed Otay II POE on the Mexico side of the border. Facilities would likely include inspection lanes, booths and canopies, a commercial vehicle and cargo inspection system, commercial import inspection building and docks, and bulk storage inspection bins. Other non-commercial facilities would include the main building, pedestrian and bicycle facilities, and a parking lot. The proposed overall POE footprint would include space to accommodate a potential future transit center site adjacent to the POE (to be designed and constructed by others). It is currently anticipated that a future transit center would encompass a minimum two-acre rectangular site in the vicinity of the southwestern corner of the POE, with sufficient space available to accommodate up to a six-acre transit center site if necessary.

Commercial Vehicle Enforcement Facility

The proposed project includes a new CVEF, which would occupy approximately 18 acres east of SR-11 along the northern POE boundary. After receiving clearance to enter the U.S. at the POE, northbound commercial vehicles would be routed into the CVEF facility for a safety/weight inspection by the CHP prior to being released onto the regional roadway system. The CVEF design is expected to be similar to the CVEF at the existing Otay Mesa POE, with anticipated facilities to include an approximately 7,900-square-foot main building, commercial vehicle scales, and inspections bays. An estimated 50 government employees are expected to work at the CVEF, with up to 20 of them on site at any given time. It is expected that hours of operation for the CVEF would be compatible with the proposed POE's schedule for processing commercial vehicles.

No Build Alternative

Under the No Build Alternative, none of the project components described under the build alternatives would be constructed, including the 2.1-mile SR-11 highway (and associated interchanges, under/overcrossings, connectors, SR-905 modifications, and related facilities), the Otay Mesa East POE (including the potential future transit center site), and the CVEF. The existing Otay Mesa POE and associated CVEF, as well as the existing San Ysidro POE, would remain open and operational.

Alternatives Considered but Eliminated from Further Discussion

In addition to the Tier II alternatives described above for SR-11 (which are based on the Phase I Western Alternative), the Project Team considered the Central Alternative and the No Action Alternative in the Phase I analysis (Caltrans 2008a). In 2000, the Project Study Report (PSR) for SR-11 (Caltrans 2000) considered not only the Western, Central and No Action Alternatives, but also an Eastern Alternative and a Local Road Alternative. The Central and Eastern alternatives would have extended farther eastward from Harvest Road and consequently would have entailed a greater footprint, as well as additional environmental impacts. A TSM/TDM Only Alternative was also evaluated as part of the Tier II analysis, which would have included TSM/TDM measures at existing POEs only or at a new proposed POE without SR-11. A number of design alternatives for the proposed CVEF were also considered. An analysis of why the rejected alternatives were eliminated from further discussion is presented in Section 2.3 of this Final EIR/EIS.

Project Construction Costs

The anticipated costs for R/W acquisition and construction of each build alternative and variation are presented in Table 2-3 in Chapter 2. The cost for the Preferred Alternative, which includes the updated PDS design for the POE, the SR-125 Connector, and additional connections within the Siempre Viva Road Full Interchange, would be approximately \$701 million. The Draft EIR/EIS build alternatives cost estimates (without variations), which were based on more limited information available at the time the Draft EIR/EIS was prepared, ranged from approximately \$519 million for the No Interchange Alternative to \$537 million for the Two Interchange Alternative. Implementation of the Siempre Viva Road Full Interchange Variation with the Two Interchange Alternative was estimated to increase the cost of this alternative to approximately \$558 million. The SR-125 Connector Variation or SR-905/SR-125/SR-11 Full Interchange Variation was estimated to add approximately \$25 million or \$46 million, respectively, to the cost of any of the build alternatives. The No Toll Variation was estimated to reduce project implementation costs by approximately \$6 million for any build alternative. The 46-foot median variation was estimated to increase property acquisition and construction costs by an estimated \$1.7 million.

Construction of the roadway, interchanges, bridge structures or any other element(s) of the project would be contingent on available funding at the time, and the participation of others to potentially finance or fund any portion of the project would not be limited or precluded.

S.4 JOINT CEQA/NEPA DOCUMENT

As discussed above, the proposed project is a joint project by Caltrans and the FHWA, and is subject to state and federal environmental review requirements. Project documentation, therefore, has been prepared in compliance with both CEQA and NEPA. Caltrans is the lead agency under CEQA and FHWA is the lead agency under NEPA.

Some impacts determined to be significant under CEQA may not lead to a determination of significance under NEPA. Because NEPA is concerned with the significance of the project as a whole, it is quite often the case that a “lower level” document is prepared for NEPA.

Following circulation of the Final EIR/EIS, Caltrans and FHWA will be required to take actions regarding the environmental document. Caltrans will determine whether to certify the EIR and issue Findings and a Statement of Overriding Considerations under CEQA and FHWA will determine whether to issue a ROD under NEPA.

For individuals with sensory disabilities, this document is available in Braille, large print, on audiocassette, or computer disk. To obtain a copy in one of these alternate formats, please call or write to Caltrans District 11, Attn: Sandra Lavender, Environmental Analysis Branch A, 4050 Taylor Street, MS 242, San Diego, CA 92110; (619) 688-3135 Voice, or use the California Relay Service TTY number, 711.

S.5 ENVIRONMENTAL CONSEQUENCES

Table S-1 summarizes project impacts by alternative. Detailed discussion and analysis of project impacts are provided in Chapter 3.0 of this Final EIR/EIS and the associated technical studies. A summary of associated avoidance, minimization and mitigation measures are presented in Section S-7, following the impact discussion.

**Table S-1
SUMMARY OF POTENTIAL IMPACTS – BY ALTERNATIVE/VARIATION**

	Preferred Alternative	Draft EIR/EIS Alternatives			Design/Operational Variations of Draft EIR/EIS Alternatives					No Build
		Two Interchange	One Interchange	No Interchange	No Toll	46-foot Median	SR-125 Connector	SR-905/ SR-125/ SR-11 Full Interchange	Siempre Viva Road Full Interchange (With Two Interchange Design)	
HUMAN ENVIRONMENT										
Land Use Conversions to Transportation Uses										
Undeveloped land designated for industrial use	210.5 acres	226.5 acres	227.4 acres	214.5 acres	No additional land use conversions				20.2 acres additional land use conversion	No land use conversions
Industrial developed land	2.8 acres	2.9 acres	2.0 acres	2.0 acres	No additional land use conversions	0.7 acre additional land use conversion	No additional land use conversion		No land use conversions	
Graded land used for truck storage	16.3 acres	22.0 acres	10.5 acres	10.7 acres	No additional land use conversions				No land use conversions	
Vehicle auction yard (temporary permit)	5.6 acres	5.6 acres	13.6 acres	4.8 acres	No additional land use conversions				No land use conversions	
Otay Water District land	0.3 acre	0.3 acres	0.3 acres	0.3 acres	No additional land use conversions				No land use conversions	

Table S-1 (cont.)
SUMMARY OF POTENTIAL IMPACTS – BY ALTERNATIVE/VARIATION

	Preferred Alternative	Draft EIR/EIS Alternatives			Design/Operational Variations of Draft EIR/EIS Alternatives					No Build
		Two Interchange	One Interchange	No Interchange	No Toll	46-foot Median	SR-125 Connector	SR-905/ SR-125/ SR-11 Full Interchange	Siempre Viva Road Full Interchange (With Two Interchange Design)	
HUMAN ENVIRONMENT (cont.)										
Land Use Conversions to Transportation Uses (cont.)										
CBP undeveloped land	6.0 acres	7.4 acres	7.4 acres	7.4 acres	No additional land use conversion					No land use conversions
Total	235.5 acres	264.7 acres	261.2 acres	239.7 acres	No additional land use conversions	0.7 acre additional land use conversion	No additional land use conversion		20.2 acres additional land use conversion	No land use conversions
Restriction of Land Use Due to Proposed Easements										
Disturbance Limits within CBP Easement	6.0 acres	7.4 acres	7.4 acres	7.4 acres	No additional land use restrictions due to easements					No land use restrictions due to easements
Drainage Easements adjacent to Siempre Viva Road and Enrico Fermi Drive interchanges	0.6 acres				No additional land use restrictions due to easements				0.4 (0.2 acre less easement, but greater parcel acquisition)	No land use restrictions due to easements

Table S-1 (cont.)
SUMMARY OF POTENTIAL IMPACTS – BY ALTERNATIVE/VARIATION

	Preferred Alternative	Draft EIR/EIS Alternatives			Design/Operational Variations of Draft EIR/EIS Alternatives					No Build
		Two Interchange	One Interchange	No Interchange	No Toll	46-foot Median	SR-125 Connector	SR-905/ SR-125/ SR-11 Full Interchange	Siempre Viva Road Full Interchange (With Two Interchange Design)	
HUMAN ENVIRONMENT (cont.)										
Restriction of Land Use Due to Proposed New Easements (cont.)										
Permanent Gas Line Easement – northwest corner of POE/CVEF	0.8 acre			No additional land use restrictions due to easements					No land use restrictions due to easements	
Temporary Gas Line Easement – northwest corner of POE/CVEF	0.6 acre			No additional land use restrictions due to easements					No land use restrictions due to easements	
Temporary Construction Easements – Sanyo Avenue Area	0.6 acre			No additional land use restrictions due to easements					No land use restrictions due to easements	
Wall Footing, Utility, and Drainage Easements – Sanyo Avenue Area	1.7 acres			No additional land use restrictions due to easements	1.0 acre (narrower easement, but greater parcel acquisition)	No additional land use restrictions due to easements			No land use restrictions due to easements	

Table S-1 (cont.)
SUMMARY OF POTENTIAL IMPACTS – BY ALTERNATIVE

	Preferred Alternative	Two Interchange	One Interchange	No Interchange	Design/Operational Variations					No Build
					No Toll	46-foot Median	SR-125 Connector	SR-905/ SR-125/ SR-11 Full Interchange	Siempre Viva Road Full Interchange	
HUMAN ENVIRONMENT (cont.)										
Consistency with Federal, State, Regional, and Local Plans and Programs	Consistent				Inconsistent with regional plans	Consistent				Inconsistent with local / regional plans
Growth	No substantial growth impacts within the immediate socioeconomic study area, although current active development proposals could be influenced to be constructed sooner under any of the build alternatives. Potential to influence growth in goods movement and services within the larger southern California region based on the expansion of border crossing capacity, removing a current obstacle to such growth. Current economic conditions are also constraining growth and there is capacity in the system to accommodate growth in the near term. On balance the proposed project contribution to growth in the region is seen as positive.									No impact
Community Cohesion	No impact									
Community Character	Impacts from visual effects of retaining walls				No additional impacts	Additional impacts (retaining walls)	No additional impacts			No immediate impacts
Relocations	No substantial impacts (no residential property acquisitions or relocations)									No impact
Property Acquisition	230.65 acres	245.15 acres	241.71 acres	220.49 acres	No additional acquisitions	0.7 acre additional parcel acquisition	No additional acquisitions		20.2 acres additional parcel acquisition	No acquisitions
Property Value Impacts	Benefit due to commercial access									No benefit
Property Tax Impacts	\$275,450 tax loss per year	\$282,868 tax loss per year	\$290,437 tax loss per year	\$240,456 tax loss per year	No additional tax loss	Additional tax loss of \$8,175 to 8,181 per year	No additional tax loss		Additional tax loss of \$8,175 per year	No impact

**Table S-1 (cont.)
SUMMARY OF POTENTIAL IMPACTS – BY ALTERNATIVE**

	Preferred Alternative	Two Interchange	One Interchange	No Interchange	Design/Operational Variations					No Build
					No Toll	46-foot Median	SR-125 Connector	SR-905/ SR-125/ SR-11 Full Interchange	Siempre Viva Road Full Interchange	
HUMAN ENVIRONMENT (cont.)										
Sales Tax Impacts	\$4.5 million/7.6 million generated by 2015/2030			\$0.4 million/0.5 million generated by 2015/2030	\$4.5 million/7.6 million generated by 2015/2030				No tax generation	
Environmental Justice	Potential benefit			No additional impacts or benefits as a result of design/operational variations					No benefit	
Utilities/Services	Disruption of existing utilities and services			No additional impacts as a result of design/operational variations					No impact	
Traffic										
Construction	Temporary road closures			No additional impacts as a result of design/operational variations					No impact	
Operational Performance	Adverse cumulative effects to select freeway segments, no adverse impacts to roadway segments or intersections	Adverse cumulative effects to select freeway segments; Two Interchange Alternative would have no adverse impacts to roadway segments or intersections; One Interchange and No Interchange would adversely impact certain roadway segments and intersections		Generally similar to baseline alternatives, with various exceptions; varies by alternative and variation					No impact	
Local Benefits	Higher regional highway connectivity compared to the baseline build alternatives	Increased connectivity/accessibility and improved performance over No Build (Two Interchange Alternative – greatest increase; No Interchange – least increase)		Higher accessibility	No additional impact	Higher accessibility with more connectivity between freeways and local roads			No benefit	
Pedestrian/Bicycle	Pedestrian and bicycle facilities would accommodate new demand			No additional impacts as a result of design/operational variations					No impact	

Table S-1 (cont.)
SUMMARY OF POTENTIAL IMPACTS – BY ALTERNATIVE

	Preferred Alternative	Two Interchange	One Interchange	No Interchange	Design/Operational Variations					No Build
					No Toll	46-foot Median	SR-125 Connector	SR-905/ SR-125/ SR-11 Full Interchange	Siempre Viva Road Full Interchange	
HUMAN ENVIRONMENT (cont.)										
Visual	Visual change from undeveloped grassland and open space to a more urbanized landscape transected by a large expanse of concrete, along with associated interchanges, walls, and grading, and a POE and CVEF with buildings, roadways, and associated facilities. Specific project-related visual impact identified in Sanyo Avenue area due to retaining walls. Total visual impact would not vary substantially among the alternatives because there are no existing sensitive viewers, and future viewers will see a visual environment predominately associated with cumulative industrial uses. A cumulative impact to the visual environment of the EOMSP is identified due to development of the proposed project plus a number of active industrial project applications surrounding the proposed project			Slight reduction in impact from toll gantries	Increased impact (retaining walls)	No substantial additional impact			No impact	
Cultural Resources	No impacts to known resources			No additional impacts as a result of design/operational variations					No impact	
PHYSICAL ENVIRONMENT										
Hydrology/ Floodplain	Not substantial with avoidance and minimization			No additional impacts as a result of design/operational variations					No impact	
Water Quality/ Storm Water	Not substantial with avoidance and minimization			No additional impacts as a result of design/operational variations					No impact	
Geology/Soils	No substantial impacts			No additional impacts as a result of design/operational variations					No impact	
Paleontology	Potential destruction of buried fossil remains during grading and excavation			No additional impacts as a result of design/operational variations					No impact	
Hazardous Waste/Materials	Potential for encountering hazardous materials during construction/operation			No additional impacts as a result of design/operational variations					No impact	
Air Quality	Potential impacts associated with particulate matter during construction			No additional impacts as a result of design/operational variations					No impact	

**Table S-1 (cont.)
SUMMARY OF POTENTIAL IMPACTS – BY ALTERNATIVE**

	Preferred Alternative	Two Interchange	One Interchange	No Interchange	Design/Operational Variations					No Build
					No Toll	46-foot Median	SR-125 Connector	SR-905/ SR-125/ SR-11 Full Interchange	Siempre Viva Road Full Interchange	
HUMAN ENVIRONMENT (cont.)										
Noise										
Operation	Traffic noise would exceed NAC at Southwestern College outdoor track				No additional impacts as a result of design/operational variations					No impact
Construction	Not substantial with compliance with Caltrans standard specifications				No additional impacts as a result of design/operational variations					No impact
Energy	Reduction in long-term energy use due to reduced idling time at POEs (except under No Interchange Alternative)				Less energy use reduction	No additional impacts as a result of design/operational variations				No energy use reduction
BIOLOGICAL ENVIRONMENT										
Natural Communities ¹										
Vernal Pool	0.00	0.00	0.00	0.00	No additional impacts as a result of design/operational variations					No impact
Vernal Pool Watershed	0.00	0.00	0.00	0.00	No additional impacts as a result of design/operational variations					No impact
Basin with Fairy Shrimp	0.00	0.00	0.00	0.00	No additional impacts as a result of design/operational variations					No impact
Freshwater Marsh	0.00	0.00	0.00	0.00	No additional impacts as a result of design/operational variations					No impact
Mule Fat Scrub – Disturbed	0.42 acre	0.42 acre	0.42 acre	0.42 acre	No additional impacts as a result of design/operational variations					No impact
Disturbed Wetland	0.00	0.00	0.00	0.00	No additional impacts as a result of design/operational variations					No impact
Diegan Coastal Sage Scrub	0.00	0.00	0.00	0.00	No additional impacts as a result of design/operational variations					No impact
Native Grassland	0.2 acre	0.2 acre	0.2 acre	0.2 acre	No additional impacts as a result of design/operational variations					No impact
Non-native Grassland	171.9 acres	179.8 acres	184.4 acres	173.7 acres	No additional impacts as a result of No Toll, 46-foot Median, SR-125 Connector, or SR-905/SR-125/SR-11 Full Interchange variations				19.6 additional acres	No impact
Non-native Grassland – Disturbed	0.00	0.00	0.00	0.00	No additional impacts as a result of design/operational variations					No impact

**Table S-1 (cont.)
SUMMARY OF POTENTIAL IMPACTS – BY ALTERNATIVE**

	Preferred Alternative	Two Interchange	One Interchange	No Interchange	Design/Operational Variations					No Build
					No Toll	46-foot Median	SR-125 Connector	SR-905/ SR-125/ SR-11 Full Interchange	Siempre Viva Road Full Interchange	
BIOLOGICAL ENVIRONMENT (cont.)										
Natural Communities ¹ (cont.)										
Existing Grassland Restoration Area	3.2 acre	3.2 acre	3.2 acre	3.2 acre	No additional impacts as a result of design/operational variations					No impact
Tamarisk Scrub	0.08 acre	0.08 acre	0.08 acre	0.08 acre	No additional impacts as a result of design/operational variations					No impact
Non-native Vegetation	0.2 acre	0.2 acre	0.3 acre	0.2 acre	No additional impacts as a result of design/operational variations					No impact
Disturbed Habitat	28.6 acres	31.31 acres	28.51 acres	26.31 acres	No additional impacts as a result of design/operational variations				0.6 additional acre	No impact
Developed	8.0 acres	12.2 acres	13.2 acres	5.2 acres	No additional impacts as a result of design/operational variations					No impact
Wildlife Corridors/ Habitat Fragmentation	Minimal impacts									No impact
Indirect Impacts to Natural Communities	Temporary construction impacts									No impact
Wetlands and Other Waters ²										
CDFG Jurisdictional Areas (acres)	0.68	0.69	0.70	0.68	No additional impacts as a result of design/operational variations				Additional 0.2 acre	No impact
CDFG Jurisdictional Areas (linear feet)	4,999	4,838	4,860	4,626	No additional impacts as a result of design/operational variations				Additional 476 linear feet	No impact
USACE Jurisdictional Areas (acres)	0.22	0.22	0.21	0.21	No additional impacts as a result of design/operational variations				Additional 0.2 acre	No impact
USACE Jurisdictional Drainages (Linear Feet)	4,492	4,608	4,494	4,478	No additional impacts as a result of design/operational variations				Additional 476 linear feet	No impact

**Table S-1 (cont.)
SUMMARY OF POTENTIAL IMPACTS – BY ALTERNATIVE**

	Preferred Alternative	Two Interchange	One Interchange	No Interchange	Design/Operational Variations					No Build
					No Toll	46-foot Median	SR-125 Connector	SR-905/ SR-125/ SR-11 Full Interchange	Siempre Viva Road Full Interchange	
BIOLOGICAL ENVIRONMENT (cont.)										
Plant Species										
Small-flowered Morning Glory	Up to 20 patches	Up to 20 patches			No additional impacts as a result of design/operational variations				2 additional patches	No impact
Variegated Dudleya	No Locations	Five Locations			No additional impacts as a result of design/operational variations					No impact
San Diego Barrel Cactus	One individual	16 individuals			No additional impacts as a result of design/operational variations				1 additional individual	No impact
Decumbent Goldenbush	115 individuals	160 individuals			No additional impacts as a result of design/operational variations					No impact
San Diego Marsh-elder	41 individuals	Up to 43 individuals			No additional impacts as a result of design/operational variations				11 additional individuals	No impact
Animal Species – Non-listed										
Burrowing Owl	9 locations	12 locations	14 locations	12 locations	No additional impacts as a result of design/operational variations					No impact
Golden Eagle	No nests impacted; less impacts to foraging habitat than other alternatives	No nests impacted, but impacts to foraging habitat			No additional impacts as a result of design/operational variations					No impact
Other Non- listed Species	No substantial impacts				No additional impacts as a result of design/operational variations					No impact
Threatened and Endangered Animal Species										
San Diego Fairy Shrimp	89.1 acres critical habitat	101.7 acres critical habitat			No additional impacts as a result of design/operational variations				Additional 0.5 acre	No impact
Quino Checkerspot Butterfly	3 locations; no critical habitat	3 locations and 4.2 acres critical habitat			No additional impacts as a result of design/operational variations					No impact
Invasive Species	No substantial impacts									No impact

¹ Total acreage includes 0.91 acre of impacts associated with easements outside of the proposed project R/W (described above), which are considered permanent impacts.

² All reported impact numbers include 0.01 acre and 165 linear feet of impact to Drainage B, associated with a proposed easement outside project R/W. Impacts associated with the easement would be considered permanent.

Environmental Consequences Remaining Substantial After Mitigation

Traffic

Section 3.8 of this Final EIR/EIS concludes that operation of the new Otay Mesa East POE would result in cumulative traffic impacts to select freeway segments, roadway segments and/or intersections in the project study area, identified in Section 3.8.3, depending on the alternative. For the Preferred Alternative and the Two Interchange Alternative, this cumulative impact would be limited to freeway segments (there would be no cumulative impact to roadway segments or intersections). A number of measures are described in Section 3.8.4 that could reduce these traffic impacts, such that operations would be no worse than under the No Build Alternative. These measures should be considered in future transportation planning efforts for the study area in coordination with local entities, as SR-11 and the Otay Mesa East POE have been reflected in the EOMSP for many years. Because the implementation of these measures is beyond the control or responsibility of Caltrans, however, they are not proposed as part of the project. Refer to Section 3.8.4 for a description of these measures.

Visual

Just east of Sanyo Avenue, the project would construct up to 26-foot high retaining walls in close proximity to existing buildings, resulting in an adverse project-level impact on the visual environment. The project's visual impact at this location, as well as its contribution to the cumulative visual impact within the Sanyo Avenue area and SR-905/SR-125/SR-11 Interchange area would be minimized through typical Caltrans landscape and architectural design measures, as listed in Section 3.9. This direct project impact would therefore be substantial but mitigated.

Cumulatively, however, the proposed project in combination with other anticipated development in eastern Otay Mesa would considerably change the visual environment of the area from open space to urban uses, and would contribute to cumulative visual impacts within the EOMSP area following project implementation. While the mitigation measures listed in Section 3.9 would serve to avoid and minimize project-specific impacts, cumulative impacts would remain substantial, adverse, unavoidable, and unmitigable.

Noise

Noise levels would exceed the Noise Abatement Criteria (NAC) at one location with sensitive receptors (the Southwestern College outdoor recreation facilities). The analysis of noise impacts and mitigation, however, found that a noise barrier, while technically feasible, would not be economically reasonable. Therefore, substantial adverse noise levels would remain at this location.

S.6 CUMULATIVE IMPACTS

Resources substantially impacted by the proposed project and in poor or declining health include transportation/traffic (Section 3.8), visual/aesthetics (Section 3.9), hazardous waste/materials (Section 3.15), natural communities (Section 3.19), wetlands and other waters (Section 3.20), plant species (Section 3.21), animal species (Section 3.22), and threatened and endangered species (Section 3.23). It should be noted with respect to cumulative traffic impacts that, although the project would reduce future traffic congestion at the existing border crossings and freeway segments immediately north of these, there would nonetheless be adverse cumulative traffic impacts to a number of local freeway segments for all build alternatives (including the Preferred Alternative) and certain roadway segments and intersections for the One Interchange and No Interchange alternatives, because the addition of a POE is projected to attract traffic away from the San Ysidro POE and increase traffic on I-805 and SR-11.

Projected traffic volumes would exceed the planned roadway capacities in East Otay Mesa, and adjustments to local circulation plans may be needed to accommodate these higher volumes (refer to Section 3.27).

For each of these issues, mitigation or minimization measures proposed for the project, together with the mitigation measures required for other cumulative projects in the area, would reduce the overall cumulative impact to the affected resources. Impacts to hazardous waste/materials, natural communities, wetlands and other waters, plant species, animal species, and threatened and endangered species would be reduced to the extent that these impacts would no longer be substantial. Cumulative impacts to visual resources and local traffic circulation would remain substantial and adverse.

S.7 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

Many avoidance and minimization measures, including best management practices, have been incorporated into the project design to reduce impacts to resources. Mitigation would off-set impacts to resources that result from the project. For some resources, permit requirements require mitigation. Avoidance and minimization measures, and proposed mitigation measures are discussed in detail in Chapter 3. Avoidance, minimization and mitigation measures are not proposed regarding land use, or environmental justice.

Community Cohesion and Character

Impacts to community character would be mitigated through measures identified under Visual/Aesthetics pertaining to visual effects of the retaining walls.

Relocations and Property Acquisitions

Impacts relating to relocations or property acquisitions would be avoided, minimized or mitigated through conformance with Caltrans' Relocation Assistance Program (RAP), which is based on the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (as amended) and Title 49 Code of Federal Regulations Part 24.

Utilities and Emergency Services

Project design and construction methods would be required to minimize utility disruption in conformance with Public Utilities Code, Section 12808. In addition to standard notification and coordination requirements, the following specific measures would be required to maintain utilities and emergency response services:

- Caltrans and GSA would coordinate with the responsible utilities companies regarding any necessary relocation of the existing fuel line that crosses the northeast corner of the POE/CVEF and the 30-inch diameter gas pipeline in the southern portion of the POE site
- Interior and exterior storage areas for recyclables and green waste and adequate recycling containers would be provided within public areas
- Most construction and demolition waste (including but not limited to soil, vegetation, concrete, lumber, metal and cardboard) would be reused or recycled
- Disruption to emergency response service on local roads would be minimized through implementation of a construction traffic control plan to provide for passage of emergency vehicles. Details would be developed during final design
- Disruption of the U.S. Border Patrol activities would be minimized by cooperation with the agency to facilitate its activities while still realizing the project purpose and need.

Traffic

For locations where potential future significant impacts would likely occur following project implementation, measures to avoid or minimize the affected conditions such that operations would be no worse than with the No Build Alternative are detailed in Section 3.8 and should be considered in future planning of the transportation system in the traffic study area.

The proposed project would implement SR-11 and the Otay Mesa East POE, which have been reflected in the EOMSP for many years. The traffic analysis provides guidance as to the types of modifications that would be necessary to achieve acceptable LOS in the region in 2035, and demonstrates that feasible measures exist. The implementation of such measures is beyond the control or responsibility of Caltrans, however, and therefore, is not proposed as part of the project.

Visual

Impacts to visual resources would be mitigated through development and implementation of a landscape concept plan for highway planting, measures to reduce the visual impact of retaining walls (such as surface treatments and plantings), architectural features that correspond to the landscape concept plan, drought tolerant, low maintenance landscaping, grading to approximate the appearance of natural topography, treating relocated power poles to blend in with the surrounding viewshed, and integrated aesthetic features associated with lighting, signage, fencing and drainage facilities.

Cultural Resources

Unanticipated subsurface discoveries during construction are not likely. The following actions to avoid, minimize or mitigate impacts to any unknown resources that might be encountered during construction serve as precautionary measures:

- If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and significance of the find.
- If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall cease in any area or nearby area suspected to overlie remains, and the County Coroner contacted. Pursuant to PRC Section 5097.98, if the remains are thought to be Native American, the coroner will notify the Native American Heritage Commission who will then notify the Most Likely Descendent (MLD). At this time, the person who discovered the remains will contact the District Environmental Branch so that they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable.

Hydrology and Floodplains

A number of avoidance and minimization measures related to hydrologic and hydraulic issues have been identified for all of the build alternatives, including the use of appropriate drainage facilities such as inlets, pipes, channels/ditches, basins and cross drains. Final drainage facilities will be determined during the project design phase, as part of detailed hydrology/hydraulic reports to be prepared based on final project design. Specifically, such analyses encompass appropriate design, sizing, and location of proposed storm drain facilities, as well as continued consultation with applicable federal, state, and local agencies regarding issues including watershed development, storm drain design/capacity, and regulatory conformance. Implementation of the applicable conclusions and recommendations/requirements

identified in the detailed project hydrology/hydraulic reports would avoid or effectively minimize all potential impacts related to hydrology and floodplain issues.

Water Quality and Storm Water Runoff

A number of associated avoidance and minimization measures are identified that would apply to all of the build alternatives, and would prevent or minimize potential short- and long-term water quality impacts and ensure project conformance with applicable regulatory requirements. Specifically, these measures include the use of short-term best management practices (BMPs) to prevent or minimize potential impacts from construction operations, as well as design pollution prevention, treatment, and maintenance BMPs for potential long-term impacts.

Geology/Soils/Seismic/Topography

The project geotechnical investigations recommend that additional detailed subsurface exploration and laboratory testing be conducted prior to project design and construction, which would generate specific recommendations for applicable geotechnical issues to ensure conformance with associated regulatory and design requirements. Recommendations may address seismic ground acceleration, liquefaction and seismic settlement, landslides and slope/excavation instability, instability of retaining walls and under/overcrossing structures, expansive soils, corrosive soils, and oversize materials, and would avoid or minimize any potential impacts related to geology, soils, seismicity, or topography for the build alternatives.

Paleontology

Paleontological mitigation would be carried out primarily during the project's construction phase. The mitigation program would consist of monitoring, fossil salvage and preparation, curation and report preparation.

Hazardous Waste/Materials

Avoidance, minimization and mitigation measures associated with hazardous waste and materials include additional assessment and planning, as necessary, based on conditions encountered during grading, excavation, and utility trenching; proper disposal of potentially contaminated soils, groundwater, or other potentially hazardous materials (especially agriculturally related contaminants); implementation of appropriate worker and community health and safety measures in the event that potential hazards are identified within the project footprint; and compliance with applicable requirements regarding operational use, storage and transport of hazardous materials.

Air Quality

The following typical Caltrans practices to be employed during project construction would minimize the emission of fugitive dust, PM₁₀, and PM_{2.5}:

- Minimize land disturbance
- Use watering trucks to minimize dust; watering should be sufficient to confine dust plumes to the project work areas
- Suspend grading and earth moving when wind gusts exceed 25 mph unless the soil is wet enough to prevent dust plumes
- Stabilize the surface of inactive stockpiles

- Limit vehicular paths on unpaved surfaces and stabilize any temporary roads
- Minimize unnecessary vehicular and machinery activities
- Street sweeping should be conducted where sediment is tracked from the job site onto paved roads, and should be performed immediately after soil-disturbing activities occur or off-site tracking of material is observed
- Revegetate disturbed land, including vehicular paths created during construction, to avoid future off-road vehicular activities
- Locate construction equipment and truck staging and maintenance areas as far as feasible and nominally downwind of schools, active recreation areas, and other areas of high population density to minimize exposure to diesel particulates

Noise

Noise barriers are the only form of abatement considered feasible for noise levels exceeding the NAC at the Southwestern College location during project operation. A 10-foot noise barrier (NB-1) would fulfill the criteria of providing a minimum 5 dBA of noise reduction at this location, per Caltrans guidelines. Implementation of barrier NB-1 would reduce noise levels by the minimum requirement of 5 dBA at this location for any of the build alternatives or variations. This noise barrier, however, while technically feasible, would not be reasonable from a cost perspective, and is not included in the Preferred Alternative.

Required contractor compliance with applicable local noise standards would avoid or minimize temporary adverse noise from construction. These standards include the following:

- All equipment should have sound-control devices that are no less effective than those provided on the original equipment. No equipment should have an unmuffled exhaust.
- As directed by Caltrans, the contractor should implement appropriate additional noise mitigation measures, such as changing the location of stationary construction equipment, turning off idling equipment, rescheduling construction activity, notifying adjacent residents in advance of construction work, and installing acoustic barriers around stationary construction noise sources.

Energy

A number of measures recommended by the California Attorney General (California Department of Justice 2008) could be implemented to minimize the effects of energy use by the project. These measures may include, but are not limited to, efficient site and building design elements to minimize energy use for heating and cooling, lighting, and landscaping; recycling during construction and operation; and use of low or zero-emission vehicles and transit during construction and operation. GSA identifies sustainability and energy performance as basic tenets of the agency's General Design Philosophy; it is therefore a requirement that the POE achieve the status of Leadership in Energy and Environmental Design (LEED) Gold. Per California Executive Order S-20-04, the CVEF would be designed with the goal of achieving LEED Silver certification.

Natural Communities

Impacts to natural communities would be avoided to large extent through the program-level selection of the Western Alternative and design measures to avoid impacts to sensitive resources. In addition, in response to USFWS and other resources agencies' comments on the Draft EIR/EIS and based on the POE design that was developed in the PDS, the Preferred Alternative incorporates a modified eastern POE boundary resulting in a reduction in the overall POE area to further minimize impacts to non-native

grassland and the associated sensitive species. No additional avoidance or minimization efforts were determined feasible for the remaining communities of concern within the project boundaries.

Where unavoidable at the project level, impacts to natural communities would be mitigated through off-site acquisition. Native grassland would be mitigated at a 2:1 ratio, while non-native grassland and grassland restoration would be mitigated at a 1:1 ratio. Proposed mitigation for any of the alternatives would result in 3.6 acres of restoration of non-native grassland with native grassland, including 0.4 acre for impacts to native grassland (2:1 ratio), and 3.2 acres for impacts to previously restored native grassland (1:1 ratio). The proposed mitigation for non-native grassland is 171.9 acres of enhancement and preservation for the Preferred Alternative, 179.8 acres of enhancement and preservation for the Two Interchange Alternative; 184.4 acres of enhancement and preservation for the One Interchange Alternative; and 173.7 acres of enhancement and preservation for the No Interchange Alternative. A final mitigation and monitoring plan was submitted to the resource agencies on February 3, 2012, outlining a planting scheme, site preparation, an exotics control program, irrigation, grading requirements, and success criteria. A two-year plant establishment period, and three-year habitat management and monitoring program would be implemented in consultation with the resources agencies.

Wetlands and Other Waters

In a manner similar to avoidance of natural communities, impacts to wetlands and other waters were largely avoided through the Phase I selection of the Western Alternative. Where unavoidable at the project level, impacts to disturbed mule fat scrub would be mitigated at a ratio of 2:1 and impacts to U.S. Army Corps of Engineers (USACE) non-wetland Waters of the U.S./CDFG streambed would be mitigated at a ratio of 1:1. Therefore, compensatory mitigation is proposed at 1.10 acres for the Preferred Alternative; 1.11 acres for the Two Interchange Alternative; 1.12 acres for the One Interchange Alternative; and 1.10 acres for the No Interchange Alternative.

Proposed compensatory mitigation for impacts to jurisdictional drainages is via the restoration and preservation of USACE non-wetland WUS/CDFG streambed at Johnson Canyon, a drainage that extends onto one of the Lonestar parcels and supports jurisdictional features. A jurisdictional delineation would be necessary to determine the extent of USACE/CDFG jurisdiction on the Lonestar parcel. Proposed compensatory mitigation would consist of removal of non-native vegetation (primarily tamarisk), and implementation of native vegetation planting and seeding for up to approximately 4,999 linear feet of Johnson Canyon.

Plant Species

Many potential impacts associated with variegated dudleya, San Diego barrel cactus and decumbent goldenbush were avoided through selection of the Western Alternative during Phase I. While impacts would be unavoidable where these plant species occupy the necessary R/W, construction BMPs, installation of construction fencing and monitoring of construction limits would be conducted to avoid and/or minimize direct impacts to these special status plant species outside the proposed project R/W.

The Preferred Alternative would avoid impacts to variegated dudleya. In the case of the Draft EIR/EIS Alternatives, impacts to variegated dudleya and for all alternatives, impacts to San Diego barrel cactus individuals within the necessary R/W and easements would be mitigated through salvage and translocation to the Lonestar parcels (or equivalent mitigation parcel) of at least 80 percent of the population to be impacted. Project impacts to decumbent goldenbush and small-flowered morning glory would be mitigated by planting of seed or container stock at the Lonestar Ridge West parcel, representing at least 80 percent of the impacted small-flowered morning glory. The latter species would also be preserved concurrently with preservation of non-native grassland on the Lonestar Ridge West parcel. Project impacts to San Diego

marsh elder would be mitigated by planting of seed from a seed source in Otay Mesa obtained from an approved nursery, to be planted at the Johnson Canyon mitigation site.

Animal Species

Brushing, grading, and clearing of vegetation would take place outside of the bird breeding season (February 1 through August 31) to avoid impacting nesting birds and violating the Migratory Bird Treaty Act (MBTA). If construction activities occur during the breeding season, a pre-construction survey would be conducted to ensure that no nesting birds are present within the proposed work area. Should a nest site be located, then appropriate measures may include (but are not limited to) monitoring during grading and construction to ensure no impacts to the nest site, designating the location as an environmentally sensitive area, and delaying or restricting project activities until nesting and fledging is complete.

Impacts to non-listed, special status animal species would be offset by the proposed mitigation for non-native grassland impacts. These species would also benefit from the proposed preservation of other habitats (e.g., Diegan coastal sage scrub) as well as the restoration and enhancement of vernal pool habitat on the Lonestar parcels (or equivalent mitigation parcel).

For burrowing owls, a pre-construction survey to identify active burrows within the R/W and 250 feet beyond the R/W (where potential burrows could be) would be conducted no more than 30 days prior to initiation of construction. To minimize impacts to nesting burrowing owls, no disturbance would occur within 250 feet of any active burrow (including any that occur outside the R/W) during the burrowing owl breeding season (February 1 through August 31) or until a qualified biologist determines that a burrow is no longer active. For each active burrow to be directly impacted outside the burrowing owl breeding season, a qualified biologist would implement passive relocation measures (installation of one-way doors) in accordance with CDFG regulations (CDFG 1995). Once all owls have vacated the burrows (after approximately 48 hours), a qualified biologist would oversee the excavation and filling of the burrows.

The proposed preservation of upland habitats described above under “Natural Communities” would also serve as mitigation for impacts to burrowing owls and golden eagles. For the Preferred Alternative, 175.5 acres of upland habitat would be preserved and/or enhanced. The enhancement and preservation would occur on the Lonestar and Johnson Canyon parcels, which are within the potential foraging area for the golden eagle pair at O’Neal Canyon and the habitat value for foraging would be improved with the proposed restoration efforts. Additional mitigation for burrowing owls includes the creation of artificial burrows in the preserved grassland at the Lonestar Ridge West mitigation parcel at a 5:1 ratio for each burrow impacted (for a total of up to 45 artificial burrows), as well as natural mounds that could provide burrow habitat. A Burrowing Owl Mitigation Plan that: (1) describes the off-site preservation of burrowing owl habitat; (2) identifies the methods for artificial burrow and natural mound creation; and (3) outlines burrow and habitat maintenance requirements, burrow monitoring requirements, and reporting requirements would be prepared and submitted to CDFG for approval prior to grading of the SR-11/POE project site.

With implementation of the avoidance and mitigation measures described above, the proposed project would not impact nesting birds and, therefore, would not violate the MBTA, so additional mitigation would not be required.

Threatened and Endangered Species

The proposed western edge of the POE was shifted to the east to avoid direct impacts to the vernal pool (and its watershed) that supports San Diego fairy shrimp, as well as habitat for the Quino Checkerspot Butterfly.

During construction of the proposed project, construction BMPs, installation of construction fencing, and monitoring construction limits would be conducted to avoid and/or minimize direct impacts to threatened and endangered species outside the proposed project impacts and R/W. BMPs employed during construction would follow the applicable Caltrans guidelines and be detailed in the project's Storm Water Management Plan (SWMP), Storm Water Pollution Prevention Plan (SWPPP), and Water Pollution Control Plan (WPCP). Specific plans would be reviewed by a biologist and modified, if necessary, prior to implementation. The biologist would have the ability to suggest changes to reduce the possibility of erosion/siltation or spills of chemicals and fuels that could potentially affect sensitive habitat areas, including (but not limited to) vernal pool basins and their watersheds.

Vernal pools located outside the alignment footprint would be designated ESAs and depicted as such on project maps. No personnel or equipment would be allowed within these areas at any time. Pools and watersheds may be marked and protected by temporary fencing (e.g., orange plastic snow fencing) or another appropriate method to prevent encroachment or unnecessary disturbance to the sites. Prior to and during construction, barriers would be established in key areas to deter public entry into the site. In addition, fencing would be provided to restrict access to sensitive habitat adjoining the work limits.

Caltrans would implement avoidance and minimization measures to protect San Diego and Riverside fairy shrimp at Lonestar Ridge West, including avoiding work during the wet season and avoiding driving and trenching through the pools during weeding of the site. The entire Lonestar Ridge West restoration site was mowed and dethatched starting in the summer of 2011 to remove exotic weed materials (thatch and seeds) while avoiding impacts to sensitive native species.

Proposed mitigation for direct impacts to up to 89.1 acres of San Diego fairy shrimp critical habitat is through preservation of San Diego fairy shrimp critical habitat at Lonestar Ridge West (or equivalent mitigation parcel). The mitigation for critical habitat impacts has been negotiated through the Section 7 consultation with the USFWS.

To address impacts to San Diego and Riverside fairy shrimp within pools at the Lonestar Ridge West parcel that would be impacted during habitat enhancement and restoration activities, soil would be collected from each of the existing vernal pool basins at Lonestar Ridge West prior to grading activities beginning in the summer of 2012. Soil to be used for post-grading inoculation of the pools would be collected with hand tools in chunks when possible to avoid crushing or disturbing fairy shrimp cysts. The collected soil inoculum containing San Diego fairy shrimp would be used to inoculate the 18 enhanced vernal pools (totaling approximately 0.6 acre) and approximately 25 of the 100 shallower vernal pools created at the Lonestar Ridge West after grading and prior to the first rains. Approximately 3.21 acres of vernal pools would be created at Lonestar Ridge West to provide additional San Diego fairy shrimp habitat. The collected soil inoculum containing Riverside fairy shrimp would be used to inoculate the enhanced vernal pool and approximately 3 of the 11 deeper vernal pools created at Lonestar Ridge West after grading and prior to the first rains. Approximately 0.39 acre of vernal pools would be created at Lonestar Ridge West to provide additional Riverside fairy shrimp habitat.

A final mitigation and monitoring plan was submitted to the resource agencies on February 3, 2012, outlining a planting scheme, site preparation, an exotics control program, irrigation, grading requirements, and success criteria. A two-year plant establishment period, and three-year habitat management and monitoring program would be implemented at Lonestar Ridge West.

By reducing the size of the POE and shifting the eastern boundary of the POE westward, the Preferred Alternative would avoid the direct impacts to 4.2 acres of critical habitat that would be impacted by the POE design for any of the Draft EIR/EIS build alternatives. The loss of Quino checkerspot butterfly and direct impacts to 4.2 acres of Quino checkerspot butterfly critical habitat (only under the Draft EIR/EIS

build alternatives) would be mitigated through preservation and enhancement of historically occupied Quino checkerspot butterfly habitat on the Lonestar and Johnson Canyon parcels (or equivalent mitigation parcel). The mitigation for critical habitat impacts has been negotiated through the Section 7 consultation with the USFWS.

Because of the low quality of the Quino checkerspot butterfly habitat to be impacted, the small number of individual Quino checkerspot butterfly observed, and because no Quino checkerspot butterflies have been observed in recent years, the focus of the mitigation proposed is on preservation and restoration of Quino checkerspot butterfly habitat off site. Therefore, if any of the Draft EIR/EIS alternatives were selected, proposed mitigation for the loss of Quino checkerspot butterfly would be through preservation and enhancement of 95 acres of historically occupied Quino checkerspot butterfly habitat on the Lonestar and Johnson Canyon parcels or equivalent mitigation parcels (see Section 3.19.4). Appropriate larval host species and nectar species would be incorporated into the seed palette that would be utilized on the parcels. The mitigation plan, outlining the details of the entire upland revegetation effort (e.g., plant and soil salvaging, site preparation, success criteria, monitoring requirements), would be prepared and submitted to the appropriate resource agencies for review.

Invasive Species

Impacts associated with invasive species would be avoided and/or minimized through the use of landscaping and erosion control that do not use species on the state's noxious weed list, and through regular inspection of construction areas by a biological monitor. Precautions would be required to prevent the spread of invasive species into new areas, including the cleaning of construction equipment and implementation of eradication strategies. In addition, all areas of temporary disturbance would be revegetated with native species or ornamental landscaping to limit colonization by invasive species, according to landscape plans reviewed by a qualified biologist.

S.8 COORDINATION WITH PUBLIC AND OTHER AGENCIES

Permits and Approvals Needed

The following program-level permits, reviews and approvals were acquired during implementation of Phase I:

Agency	Permit/Approval	Status
U.S. Department of State	Conditional Presidential Permit for the POE (included as Appendix A)	Approved
U.S. General Services Administration	Approval of preferred POE site alternative	Approved

Based on identified project impacts and current environmental analysis, the following permits, reviews and approvals will be required for project-level implementation in Tier II:

Agency	Permit/Approval	Status
U.S. Department of State	Full Presidential Permit for the POE	Pending
U.S. Fish and Wildlife Service	Endangered Species Act Section 7 Consultation for Threatened and Endangered Species	Consultation ended with the receipt of the Biological Opinion on November 23, 2011
U.S. Army Corps of Engineers	Clean Water Act Section 404 Nationwide Permit for filling waters of the United States	Pending
California Regional Water Quality Control Board	(1) Clean Water Act Section 401 Water Quality Certification for discharge of dredge and fill materials into federal waters, or Waste Discharge Requirements for non-federal waters and/or other discharges; and (2) conformance with NPDES Caltrans Statewide Permit and/or Groundwater Extraction/Disposal Permit for the SR-11 and the POE/CVEF sites	Pending
California Department of Fish and Game	California Fish and Game Code 1602 Agreement for Streambed Alteration Section 2080.1 Agreement for Threatened and Endangered Species	Pending
State Water Resources Control Board	(1) Conformance with Statewide Caltrans NPDES Permit for SR-11, and (2) Conformance with NPDES General Construction Permit for the POE/CVEF sites	Pending
County of San Diego and City of San Diego	Freeway Agreement	Pending
International Boundary and Water Commission	Approval of project grading/drainage designs within IBWC jurisdiction along the border	Pending
California Transportation Commission	SR-11 Route Adoption	Pending

S.9 RELATED PROJECTS

The proposed project is one component of a general development effort in the border region to facilitate the planned growth and increased international trade. Other elements of this regional effort include SR-905 and improvements to the POEs at Otay Mesa and San Ysidro.

SR-905: The SR-905 project was proposed to be constructed from I-805 to the Otay Mesa POE, for a distance of approximately 6.2 miles. Proposed SR-905 comprises six travel lanes and a wide median for possible future HOV lanes. The project includes local interchanges at Caliente Avenue, Heritage Road, Britannia Boulevard, and La Media Road, as well as a freeway-to-freeway interchange at SR-125. The project is currently under construction in four phases.

San Ysidro POE: The San Ysidro POE is the busiest land port in North America. The existing facility is to be reconfigured and expanded through implementation of a three-phase project. The new facility will consist of approximately 210,000 square feet of building space, new security enhancements, primary and secondary inspection areas, 29 northbound vehicle lanes, 2 northbound bus lanes, 6 southbound vehicle lanes, pedestrian facilities, and a new southbound roadway to connect with Mexico's El Chaparral facility.

Otay Mesa POE: As the only commercial POE in the region, Otay Mesa is a major driver to the economies of southern California and Baja California. The commercial port is unable to keep pace with the local commercial needs due to staging, circulation and the inadequate capacity of inspection facilities. The proposed expansion project would make improvements to both commercial and non-commercial portions of the existing POE. The proposed Otay Mesa Modernization includes the expansion of the passenger vehicle crossing from 12 to 24 primary inspection lanes, utilizing a recently acquired 10.5 acre parcel immediately east of the commercial facility that would accommodate four new commercial inspection booths, and the relocation of the existing hazardous waste truck crossing inspection facility located just west of the southbound vehicle crossing in Otay Mesa.

S.10 IDENTIFICATION OF THE PREFERRED ALTERNATIVE

After full consideration of the entire administrative record for the proposed project, including the environmental data and all public and agency comments during the Draft EIR/EIS public review process, Caltrans and FHWA have identified the Preferred Alternative for the project. As noted in Section S.3, the Preferred Alternative represents a refinement of the Two Interchange Alternative that also incorporates the SR-125 Connector Variation and a connection associated with the Siempre Viva Road Full Interchange Variation; these variations were addressed in the Draft EIR/EIS. The majority of commenters expressed a preference for a design with interchanges at Enrico Fermi Drive and Siempre Viva Road, consistent with the tentative design for SR-11 that is reflected in the EOMSP. A two-interchange design with full interchanges in both locations would provide the greatest possible connectivity to planned and existing Circulation Element roads in the EOMSP area, but based on traffic studies and operational analysis, it was determined that a full interchange at Siempre Viva Road, in addition to not meeting FHWA standards, would not be operationally feasible. The lack of queue storage capacity would create conflicts as vehicles merge to access the POE, or need to cross multiple lanes in a short distance as they leave the POE. The requirement of separating the commercial and non-commercial vehicles complicates interchange geometry. In this case, the interchange would not be able to accommodate anticipated demand within design constraints such as the close proximity of a local street intersection at Siempre Viva Road and Airway Road. The Preferred Alternative was developed to capture most of the benefits of the Two Interchange Alternative with the Siempre Viva Full Interchange Variation and the SR-125 Connector Variation, while avoiding these operational challenges to the extent possible. It would provide the maximum feasible access while maintaining necessary safety and security.

The Preferred Alternative fulfills the project's purpose and need, would have the least potential for impacts to listed/sensitive biological resources (i.e., it is the biologically preferred alternative), would have the least potential for land use impacts, and is supported by several resource agencies and other commenters. The Preferred Alternative would have a smaller footprint for the POE along the most sensitive eastern boundary, so it would result in less damage to the biological and physical environments. It also would not adversely affect traffic levels of service on local roadways and intersections. The identification of the Preferred Alternative reflects the consideration of all substantial, reasonably foreseeable, adverse impacts that remain after incorporation of all reasonable mitigation measures.

Any of the build alternatives would be expected to have similar potential Tier II impacts to consistency with plans and programs, growth, community character and cohesion, environmental justice, aesthetics, cultural resources, hydrology, water quality, geology, paleontological resources, hazardous waste, air quality, noise levels, or energy (see the corresponding sections of Chapters 3 and 4). The Preferred Alternative would, however, commit fewer acres of currently undeveloped land to transportation-related uses than would any of the Draft EIR/EIS build alternatives (see Section 3.1). Property acquisition also would be less under the Preferred Alternative than under any but the No Interchange Alternative. With regard to traffic impacts, the Preferred Alternative and the Two Interchange Alternative would have no

adverse impacts to roadway segments or intersections, while the One Interchange and No Interchange alternatives would adversely impact certain roadway segments and intersections.

Because the EOMSP (as amended) includes approximately the Preferred Alternative SR-11 alignment and POE site, identification of the Preferred Alternative would require the least modification of the site plans for approved local projects that have reflected an approximation of the Preferred Alternative within their development plans (see Section 3.1). Some adjustment of site plans would still be required, however.

In terms of aesthetics (see Section 3.9), any of the build alternatives initially would be more visible than the No Build Alternative. Over time, however, as the East Otay Mesa area builds out with primarily industrial uses, the area would have an industrial appearance similar to the build alternatives. The differences among the anticipated visual effects associated with the project build alternatives were not considered substantial and were not a major factor in the identification of a preferred alternative.

The Preferred Alternative, with the modified POE design, would have the least direct and indirect impacts to sensitive biological resources, compared to the Draft EIR/EIS build alternatives (see Sections 3.19 through 3.24). In particular, under the Preferred Alternative, impacts to non-native grassland would be between 1.8 and 32.1 acres less than under the various Draft EIR/EIS build alternatives and variations. It is important to note, however, that the reduced POE footprint could have been combined with any of the Draft EIR/EIS build alternatives and achieved the same reduction in impact. Thus, the reduced biological resources impacts associated with the modified POE design were not a differentiating issue for the identification of the Preferred Alternative. Any of the build alternatives that would incorporate the reduced POE footprint would be biologically preferred.

Construction of the Preferred Alternative is estimated to cost more than the cost estimates provided in the Draft EIR/EIS, because of the availability of additional information since the Draft EIR/EIS was prepared, and design refinements that would apply to any of the Draft EIR/EIS build alternatives if they were identified as the preferred alternative (see Table 2-3). According to the adjusted cost estimates, the Preferred Alternative would be less expensive than the Two Interchange Alternative with the SR-125 Connector Variation and the Siempre Viva Road Full Interchange Variation and also less expensive than any of the Draft EIR/EIS build alternatives with the SR-905/SR-125/SR-11 Full Interchange Variation, but more expensive than other combinations of Draft EIR/EIS build alternatives and variations.

The SR-905/SR-125/SR-11 Full Interchange Variation was rejected because the project traffic studies did not support the need for a fully connected interchange in 2035.

The traffic study did support the SR-125 Connector Variation, however. This connector from southbound SR-125 to eastbound SR-11 would provide the complementary movement of the westbound SR-11 to northbound SR-125 connector that was previously approved under the SR-905 project. The SR-125 Connector Variation was also considered necessary to complete the tolled highway connections between SR-11 and SR-125 to facilitate rapid tolled travel to the POE. Therefore, a modified version of the SR-125 Connector Variation has been incorporated into the Preferred Alternative.

The 46-foot Median Variation in the vicinity of Sanyo Avenue was studied because the proposed 22-foot median in this area does not meet highway standards. Per the Highway Design Manual, the minimum width for the proposed project should be 46 feet. A design exception for a 22-foot median may be allowed under certain very restrictive conditions, such as mountainous terrain, extreme right-of-way impacts/costs or significant environmental constraints. The 46-foot Median Variation was rejected in favor of the 22-foot median design, which was determined to be operationally adequate and would result in fewer impacts to adjacent developed industrial sites (and associated higher right-of-way acquisition cost). The design exception for the 22-foot median has been granted.

The No Toll Variation was rejected because it would not be consistent with the RTP, it would not present substantial benefits to environmental justice populations (refer to Section 3.6), and it would not provide the reduced border wait time benefits at the Otay Mesa East POE that the tolled alternatives would provide. Furthermore, other funding sources for SR-11 and the POE are not anticipated to be available in the near term, and state legislation (the Otay Mesa East Toll Facility Act) has approved SANDAG as the tolling agency for this project.

The No Build Alternative has been rejected because, as described in Chapter 1, the project is needed to alleviate the current “bottleneck” at the border that is causing long wait times and interfering with cross-border trade. Under the No Build Alternative, the economic benefits of the project would not be realized. The project has been reflected on local planning documents and the RTP for many years and current development plans for the area have been designed in anticipation of SR-11/POE implementation. Although the No Build Alternative would have no immediate, direct impacts to biological and visual resources, the project area is planned for development in the EOMSP. Such development is likely to occur with or without the proposed project, resulting in similar impacts to resources as the proposed project, and creating new land use constraints to implementation of SR-11 and the Otay Mesa East POE in the future.

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Chapter 1

Proposed Project

CHAPTER 1.0 – PROPOSED PROJECT

1.1 INTRODUCTION

The California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA) propose the construction of the following facilities in the County of San Diego (County): the new Otay Mesa East Port of Entry (POE); a new toll highway, State Route (SR-) 11, with connectors to SR-905 and associated modifications to SR-905; and a Commercial Vehicle Enforcement Facility (CVEF). The project analyzed in this document (referenced herein as the “proposed project” or “project”) includes these three major elements in the general location shown on Figure 1-1, *Regional Location Map* and Figure 1-2, *Project Area Map*.

Proposed SR-11 would begin at about Harvest Road, just east of the SR-905/SR-125 Interchange in east Otay Mesa, and would extend east and then south approximately 2.1 miles to the new, approximately 100-acre POE at the United States (U.S.) - Mexico border. Construction of SR-11 also would require modifications to SR-905 to accommodate a connection with SR-11. The SR-11 Post Mile 0.0 would be located approximately 430 feet west of Piper Ranch Road, where SR-11 connects to SR-905. The eastern terminus of SR-11, at Post Mile 2.8, would be at the proposed northern POE boundary. The approximately 20-acre CVEF site would be located adjacent to the POE on its northern edge. The SR-11, Otay Mesa East POE and CVEF facilities are interdependent project components in that their locations and designs must be compatible, and none of the three could proceed independently of the others. These facilities ultimately would be owned, maintained, built and operated by different agencies, however. Caltrans would be responsible for SR-11, with the San Diego Association of Governments (SANDAG) serving as the responsible tolling agency; the POE would be owned and maintained by the U.S. General Services Administration (GSA) and operated by the U.S. Customs and Border Protection (CBP); and the CVEF would be owned by Caltrans and maintained and operated by the California Highway Patrol (CHP). To accommodate possible future transit service, such as Bus Rapid Transit (BRT), to the POE, the proposed project would include sufficient space within the overall POE footprint but outside the POE itself for a potential future transit center (to be designed and constructed by others). Details of location, land acquisition, design, construction, environmental review and administrative responsibility for this facility would be defined by the SANDAG/Metropolitan Transit Service (MTS) at a later date.

The proposed facilities are being studied under a two-tier process, pursuant to Section 1508.28 of the federal Council on Environmental Quality (CEQ) Guidance and Sections 15152 and 15168 of the California Environmental Quality Act (CEQA). Under the first tier (referred to as Phase I), a Program Environmental Impact Report/Phase I Environmental Impact Statement (PEIR/PEIS) was prepared and approved/certified in 2008 (Caltrans 2008a); this document addressed SR-11 and the POE at a programmatic level. The PEIR/PEIS had as its purpose the identification of the preferred SR-11 and POE locations to allow for: (1) route adoption by the California Transportation Commission (CTC); (2) consideration and approval of a Presidential Permit for the location of an International Border Crossing by the U.S. Department of State (DOS); (3) facilitation of land use and circulation planning within the area covered by the East Otay Mesa Business Park Specific Plan (EOMSP; formerly known as the East Otay Mesa Specific Plan) by local agencies; (4) support of international cooperation efforts to pursue the development of a new Otay Mesa East POE; and (5) future designation of right-of-way (R/W) for each facility in cooperation with local and regional jurisdictions to ensure that the R/Ws are shown conceptually on planning documents. The Phase I PEIR/PEIS was certified pursuant to CEQA on August 6, 2008; a Record of Decision (ROD) was approved on October 6, 2008 pursuant to the National Environmental Policy Act (NEPA); and a conditional Presidential Permit for the POE was approved on November 20, 2008, and is included in Appendix A of this Final EIR/EIS. This environmental document constitutes a tiered (Tier II) document of the environmental program (i.e., tiered from and based on the

Phase I Program PEIR/PEIS). It addresses several design and operational alternatives for the POE, SR-11 and the CVEF accordingly, pursuant to applicable elements of the CEQ *Regulations for Implementing the Procedural Provisions of the National Environmental Quality Act* (40 CFR 1500-1508), and the FHWA *Environmental Impact and Related Procedures* (23 CFR 771).

SR-11 is included in the SANDAG 2050 Revenue Constrained Highway Network of the Regional Transportation Plan (RTP; SANDAG 2011a); the 2010 Regional Transportation Improvement Program (RTIP; SANDAG 2010), which covers Fiscal Years (FY) 2010/2011 through 2014/2015 (CAL ID CAL66); and the SAFETEA-LU¹ List of High Priority Projects in San Diego. These plans include SR-11 as a four-lane toll highway, with no specification as to interchanges or other design features. Amendment 2 of the 2010 RTIP (January 2011) reflects the proposed project's modifications to SR-905 between the SR-905/SR-125/SR-11 Interchange and Britannia Boulevard. SR-11 is shown conceptually on the circulation elements of the EOMSP and the County General Plan as well as the Otay Mesa Community Plan (OMCP) and the City of San Diego (City) General Plan. The Otay Mesa East POE is also shown on the County's land use plan for the EOMSP, and in the RTP.

1.2 PURPOSE AND NEED

1.2.1 Purpose of the Project

Two international POEs, San Ysidro and Otay Mesa, currently link San Diego and Tijuana, while a third POE is located east of the San Diego metropolitan area at Tecate. Together, these three POEs serve as the gateway for all pedestrian traffic and vehicular movement of people and goods between the San Diego region and Baja California, Mexico. As described above, the proposed project would constitute the second tier of planning and environmental clearance for the development of a new POE in the San Diego/Tijuana region, along with development of the associated roadway (SR-11) that would connect the new POE to the existing and planned roadway system in the area, and a new CVEF for CHP inspection of trucks entering California from Mexico. This includes the connection of SR-11 with the SR-905 facility that is currently under construction. The Phase I PEIR/PEIS identified the following project purpose, which resulted in the selection of the Western Alternative project corridor. This purpose also applies to the evaluation of alternative designs for the Tier II project, to be located within the Western Alternative project corridor that was selected in Phase I:

- Increase inspection processing capacities for commercial and personal vehicles and pedestrians in the San Diego/Tijuana region
- Reduce northbound vehicle and pedestrian queues and wait times to cross the border at other POEs in the region
- Accommodate projected increases in international trade and personal cross-border travel in the region in a safe and secure manner
- Contribute to reductions in congestion at existing POEs
- Accommodate commercial goods movement and cross-border travel to and from the Otay Mesa East POE

Additional Phase I objectives that also apply to Tier II are to:

- Allow bicycle and transit access to the POE, including the provision of sufficient space adjacent to the POE (and accommodated within the identified POE impact footprint) for possible future development of a transit center (designed and constructed by others), thereby preserving the

¹ The Federal Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), passed in August 2005, authorizes the federal surface transportation projects for highways, highway safety and transit.

future opportunity to implement transit service to the POE and reducing local and cross-border personal vehicle trips.

- Where feasible and in compliance with federal and state regulations, support the 1998 Letter of Intent entitled “Binational Corridor Preservation for State Route 11 – Tijuana/ Rosarito 2000 and Site Designation for the East Otay Mesa-Mesa de Otay II Port of Entry” signed by SANDAG, City of San Diego, County, City of Tijuana, City of Rosarito, State of Baja California, and Caltrans. This Letter of Intent established the process by which the roadway corridors could be preserved for future construction, and the East Otay Mesa - Mesa de Otay II international border crossing could be developed, including compliance with the federal procedures within each country.
- Minimize impacts to the aquatic environment, where practicable and feasible.

1.2.2 Need for the Project

The need for SR-11 and the CVEF is linked to the need for the new Otay Mesa East POE. There is no need for SR-11, the associated modifications to SR-905 and the SR-905/SR-125/SR-11 Interchange, or the CVEF without the POE. With implementation of the POE, however, SR-11 becomes a critical facility to connect the POE with the regional highway system via SR-905 and SR-125, and the need for a highway facility (as opposed to other types of roadway facilities) is well documented, as discussed below. Similarly, with construction of the proposed POE, access to an existing or new CVEF becomes necessary for CHP to fulfill its responsibilities to conduct safety inspections on incoming trucks.

The new POE is needed because the capacities of the existing POEs in the region are currently being exceeded, causing excessive border wait times for those engaged in commercial and personal vehicle trips. Trade and travel in this area are forecasted to continue to grow, and border delays are expected to increase correspondingly. The Otay Mesa area is covered by two Community Plans, the EOMSP in the County portion of the mesa and the OMCP in the City of San Diego portion of the mesa. Both plans designate much of the remaining undeveloped land on the mesa for industrial or residential development. Employment in the census tract (CT) surrounding the socioeconomic study area is projected to nearly triple by 2030 compared to 2000 levels (rising from 10,914 to 28,109), and, population is projected to increase by 1,942 percent (from 1,062 to 21,691) over the same time period (SANDAG 2006a).² As development occurs, associated demand for local transportation infrastructure, including SR-11, is also projected to increase.

The San Diego/Tijuana region is the largest urban area along the entire U.S. - Mexico border, with a combined population of over four million people. This combined population is anticipated to grow to over 5.5 million by the year 2020 (SANDAG/Caltrans 2006a). The communities of San Diego and Tijuana are connected by the existing POEs at San Ysidro and Otay Mesa, which play a major role in the exchange of goods, services and people between the U.S. and Mexico. The San Ysidro POE, open 24 hours per day and seven days per week, handles passenger vehicle, bus, rail (limited use), and pedestrian/bicycle traffic only, and is the busiest land crossing in North America, averaging approximately 13,000 northbound vehicles and 4,800 northbound pedestrians per day in 2008, according to data released by the U.S. Department of Homeland Security (DHS) and reported by the U.S. Bureau of Transportation Statistics (BTS; 2009). The Otay Mesa POE is the third busiest commercial POE between the two countries (in terms of dollar value of goods), and the busiest along the California-Mexico segment of the border. This POE handles 96 percent of all the commercial truck traffic in the region, as well as passenger vehicle, bus and pedestrian traffic (SANDAG 2007a). It is open seven days per week, with passenger and pedestrian operations taking place 24 hours per day, and commercial operations occurring

² Additional socioeconomic data for the Otay Mesa area are provided in Section 3.4, Community Character and Cohesion, of this Final EIR/EIS.

16 hours per day during the week and 8 hours per day on weekends and holidays (FHWA 2009a). In 2008 there were a reported 777,000 commercial truck crossings carrying nearly \$28 billion in goods northbound at the Otay Mesa POE. The remaining commercial traffic in the San Diego County - Baja California region, over 140,000 truck trips carrying \$1.2 billion in goods, passed through the POE at Tecate (SANDAG 2007a). There were an estimated 2.4 million people and 893,000 vehicles that crossed northbound at the Tecate border crossing in 2008, representing about 5 percent of the total border crossing traffic for San Diego County (U.S. Department of Transportation [DOT] 2009).

The need for a third POE in the San Diego/Tijuana area is well established, and is based on recent and projected increases in trade and personal travel beyond the capacities of the existing POEs. Trade between the U.S. and Mexico has increased substantially since the signing of the North American Free Trade Agreement (NAFTA) in 1994, and totaled over \$332 billion by 2006 (DOT 2007a). Over 80 percent of merchandise moves across the border by truck (DOT 2007b), with a smaller portion exchanged by rail, water and air. Pedestrian and passenger car border crossings between the U.S. and Mexico have also risen dramatically in the past decade, reaching over 60 million people in 2006 in the San Diego County/Baja California border area alone (SANDAG/Caltrans 2006b). Between 1996 and 2006, the number of primary inspections (commercial and non-commercial) at the existing Otay Mesa POE increased over 80 percent, and is expected to climb an additional 50 percent by 2025 (Caltrans/GSA 2007); projections indicate the number of primary inspections at this POE will reach over 18 million by 2030 (GSA 2008). At the San Ysidro POE, it is anticipated that the total number of primary inspections will increase by approximately 28 percent between 2006 and 2025, with a similar percentage increase at the Tecate POE (Caltrans/GSA 2007). This increase in trade and travel, in combination with recent increases in U.S. security requirements such as the Western Hemisphere Travel Initiative (WHTI),³ the United States Visitor and Immigrant Status Indicator Technology project (US-VISIT),⁴ and the Secure Border Initiative (SBI),⁵ has resulted in infrastructure-related challenges. Current transportation infrastructure was not designed to handle the large traffic volumes stimulated by NAFTA and other economic growth.

The growth in local population and international trade has resulted in corresponding increases in cross-border traffic along the southern U.S. border, placing greater strain on the POEs and regional transportation infrastructure. The existing San Ysidro and Otay Mesa POEs have become a bottleneck in the system of interchange between the two countries, increasingly restricting the movement of people and goods at peak times. Studies undertaken in 2006 concluded that border crossers' expected wait times for personal trips averaged 45 minutes at the Otay Mesa POE and 75 minutes at the San Ysidro POE during peak periods, while approximately 10 percent of people expected to wait as long as one hour at the Otay Mesa POE and two hours at the San Ysidro POE. On average, travelers' expected processing and wait time for commercial freight crossings at the Otay Mesa POE was reported as typically 1.5 to 2 hours (without U.S. secondary inspection), with 10 percent of commercial border crossers expecting to wait as long as 4 hours (SANDAG/Caltrans 2006a).⁶ A border crossing traffic study completed for GSA's San Ysidro POE Improvements Project in April 2009 projected that, without increased capacity or other

³ The WHTI plan, as directed by the Intelligence Reform and Terrorism Prevention Act of 2004, is designed to enhance U.S. border security while facilitating legitimate travel and trade. Under WHTI, travelers entering the U.S. must present specified documentation that proves both identity and citizenship.

⁴ US-VISIT is a project that uses biometric data (digital finger scans and photographs) to verify travelers' identity and to check against a database of known criminals and suspected terrorists.

⁵ The SBI is a multi-year plan to add more border patrol agents; expand illegal immigrant detention and removal capabilities; and upgrade border control technology, including manned/unmanned aerial assets, and detection technology; increase investment in border infrastructure improvements; and increase interior enforcement of U.S. immigration laws.

⁶ Based on limited actual wait time data reported by CBP and a survey conducted for the SANDAG/Caltrans 2006 State Route 11 Toll Road and East Otay Mesa Port of Entry Financial Feasibility Study (SANDAG/Caltrans 2006a) and validated by the study's Expert Panel. No recent studies of actual wait times are available.

improvements, wait times for vehicles at the San Ysidro POE could average 10 hours by 2030 (KOA Corporation 2009).

According to a January 2006 SANDAG/Caltrans study *Economic Impacts of Wait Times at the San Diego – Baja California Border*, border delays discourage cross-border personal trips, and result in increased transportation costs and interruptions in the manufacture and delivery of goods (SANDAG/Caltrans 2006a). In an economy increasingly based on “just in time” delivery of inputs and products, unpredictable border wait times for trucks act as a barrier to trade, inhibiting cross-border economic investment opportunities. The study concludes that:

Inadequate infrastructure capacity, which is failing to keep up with the increase in trade and security requirements at the principal border crossings between San Diego County and Baja California, currently creates traffic congestion and delays that cost the U.S. and Mexican economies an estimated US\$6 billion in gross output in 2005. An estimated 51,325 jobs are sacrificed because of the reduction in output.

The study also indicated that border delays will increase and the economic losses incurred by the regional and national economies will more than double in the next 10 years, unless substantial improvements in border crossing and transportation infrastructure and management take place.

In 2000, a study of the *Feasibility of Opening an International Border Crossing at Jacumba Jacume* was prepared by SANDAG and Caltrans District 11. Jacumba is located about 70 miles east of downtown San Diego on Old Highway 80, 2 miles south of Interstate (I-) 8 and east of SR-94. The study found that a border crossing at Jacumba would improve border access for some trucks that use I-8 to transport goods between Baja California and locations east of San Diego. Only about four percent of trucks that cross the border at Tecate and Otay Mesa, however, travel on I-8. Most of the truck traffic to and from the border moves on I-5, I-805, and I-15, which are more accessible to Otay Mesa and Tecate than Jacumba. The study also found that the volume of truck traffic moving westward between Tecate and San Diego would be unaffected by a new commercial crossing at Jacumba, as this route would be much longer and more time consuming. Accordingly, a new crossing at Jacumba, currently in the feasibility study phase, would not affect the need for the proposed Otay Mesa East POE.

Numerous improvements to the existing San Ysidro, Otay Mesa and Tecate POEs have been studied, and in many cases have been implemented or are planned for implementation to reduce border delays. The existing 43-acre Otay Mesa POE was last upgraded and expanded in 1994. The deficiencies of the existing Otay Mesa POE are detailed in the GSA study entitled *Expanded Feasibility Study: Otay Mesa and Otay Mesa East Ports of Entry, San Diego, CA. 100% Report* (GSA 2008). Deficiencies include crossing traffic patterns within the POE, limited lane capacity, short queuing opportunities, the lack of primary inspection lanes and a screened secondary inspection area, and increases in air pollution generated by traffic queues. The existing Otay Mesa POE is surrounded on the north and west by commercial development, including warehouses and brokerage offices, and on the south by the Mexican POE facilities and adjacent dense residential, commercial and industrial development. An adjoining 10-acre parcel on the east was purchased in September 2009 to allow for expansion on the U.S. side of the existing Otay Mesa POE (Caltrans/GSA 2007), but constraints on the Mexican side of the border at this location remain.

A 2004 Caltrans study entitled the “*Bottleneck Study*”: *Transportation Infrastructure and Traffic Management Analysis of Cross Border Bottlenecks* (Caltrans 2004a) identified a number of recommendations for improvements in the flow of vehicles and the operational efficiency of the existing Otay Mesa and San Ysidro POEs. For the northbound flow at Otay Mesa, the report suggested implementing a number of potential operational improvements and increasing the number of lanes leaving

the Mexican export facilities. For the southbound flow at Otay Mesa, recommendations focused on improving access leading to the U.S. export facilities, re-routing empty commercial trucks within the Mexican import facilities, and improving unsignalized intersections. The 2008 GSA feasibility study presents a detailed modernization plan for the existing Otay Mesa POE that includes these and other recommended improvements. The feasibility study concludes, however, that in addition to this proposed renovation, the proposed Otay Mesa East POE is still needed to satisfy current and anticipated regional demand. Based on the results of the 2008 GSA feasibility study regarding anticipated POE functional needs for 2030, and the expected capacity after renovation, maximum renovation of the existing Otay Mesa facility would not be sufficient to achieve the projected POE needs for 2030.

At the San Ysidro POE, the 2004 Caltrans study (Caltrans 2004a) recommended expansion of the SENTRI lanes⁷ (completed in June 2007), signalization of an intersection, enforcement of no parking zones, restriping lanes, rerouting traffic, expansion of bicycle facilities (completed in Spring 2007), and other improvements. An additional stairway was recently constructed adjacent to the Camino de la Plaza pedestrian overcrossing to facilitate southbound pedestrian access to an existing bus stop on the west side of I-5. The San Ysidro POE is also in the master planning stages of a project that would include demolition and new construction of most of the POE. An EIS was prepared for the project (GSA 2009a) and the ROD was executed on September 9, 2009 (GSA 2009b). The new facility, as defined under the San Ysidro POE project's preferred alternative, is planned to include 210,000 square feet (sf) of building space, primary and secondary inspection areas, 30 northbound vehicle primary inspection lanes with 60 inspection booths, and one bus lane (GSA 2009a). In addition, a new southbound alignment of I-5 would be constructed to connect with Mexico's El Chaparral facility, and two new southbound pedestrian crossings would be built. Even with these improvements, northbound delays would be expected to continue to exceed 60 minutes without implementation of the proposed SR-11/Otay Mesa East POE project. Finally, the Tecate POE has recently been expanded on the U.S. side, but operational and access constraints have limited the effective capacity of this POE.

Overall, while these short-term solutions can enhance the flow of goods and people, growth is outstripping capacity at the existing POEs, particularly on the Mexican side of the border where the two existing POEs are surrounded by dense development. Even with maximum renovation at the regional POEs, congestion levels would continue to increase. Regional transportation modeling used for the GSA feasibility study indicates that, with planned improvements to the existing Otay Mesa POE, approximately two percent of the passenger vehicle traffic could shift from the San Ysidro POE to the improved Otay Mesa POE, offering little to no improvement in border delays. In addition, full expansion and/or renovation of the existing Otay Mesa POE on the U.S. side of the border would not relieve congestion unless there is similar expansion of the corresponding Mexican POE, which is currently at maximum expansion capacity with no further available space to grow.

Increasingly, there is also a need to accommodate cross-border transit users and bicyclists. Currently, transit service to POEs in the San Diego region is provided by MTS and private intercity and regional bus services. MTS Bus routes 929 and 932 serve the San Ysidro POE, while the MTS Blue Line trolley provides transit services from downtown San Diego to the San Ysidro POE, with bus routes 905 and 905A providing transit connections between the trolley and the Otay Mesa POE. In addition to public transit, private transit operators, including taxis, vans and shuttle buses, operate in the area of the Otay Mesa and San Ysidro POEs. Bicycle facilities within the vicinity of the San Ysidro POE include Class II bike lanes (i.e., striped and stenciled lane for one-way bicycle travel on the roadway), bicycle racks, and a bicycle parking lot. A bicycle route along SR-905, as well as bike lanes along the north/south portion of

⁷ The SENTRI (Secure Electronic Network for Travelers Rapid Inspection) project consists of dedicated commuter lanes where prescreened applicants and vehicles are allowed to cross the border northbound into the US, usually more quickly and efficiently than in the open-access lanes.

SR-905 and along Siempre Viva Road between La Media Road and Enrico Fermi Drive, offer bicycle access to/from the existing Otay Mesa POE. Regional and local land use and transportation plans encourage the development of transit and bicycle facilities as alternatives to driving in the region. Any new U.S. - Mexico border crossing would need to accommodate bicycle and transit access, to aid in reducing local and cross-border personal vehicle trips.

Transportation and land use planning agencies on both sides of the border have identified the long-term need for a third border crossing and associated transportation facilities in the San Diego/Tijuana area, in addition to completing planned improvements to the existing POEs. Local, regional and bi-national land use studies identified the eastern side of Otay Mesa as the preferred general location of the new POE, and a Phase I planning/environmental process has been completed to select the preferred location for the project within the U.S., corresponding to the POE site that has been identified on the Mexico side of the border. Binational support for the new POE is evidenced by:

- The signing of an agreement (referred to as a "Letter of Intent"), entitled "Binational Corridor Preservation for State Route 11 - Tijuana/Rosarito 2000 and Site Designation for the East Otay Mesa - Mesa de Otay II Port of Entry" by SANDAG, City of San Diego, County of San Diego, City of Tijuana, City of Rosarito, State of Baja California, and Caltrans in 1998.
- Completion of a roadway plan for a new Otay II POE entitled, "Estado de Integración Vial Para El Puerto Fronterizo Otay Este II, En La Ciudad de Tijuana, B.C.," 2002, from the Municipality of Tijuana and the Secretariat of Social Development of the Mexican federal government.
- Identification by the Mexican government Secretariat of Communication and Transportation (SCT) of the need for additional capacity for commercial traffic in the Tijuana region in the document, "Análisis de las Necesidades de Ampliación de la Capacidad de la Infraestructura de Transporte en los Puertos Fronterizos de Carga de Tijuana, B.C.," October 2002.
- Completion of the Partial Program of Improvement of Otay Mesa East ("Programa Parcial de Mejoramiento de la Mesa de Otay Este") by the Instituto Municipal de Planeación (IMPlan), August 2005.
- The diplomatic note sent on May 17, 2006 from the Mexican federal government to the U.S. DOS indicating the Mexican government's interest in conducting the necessary feasibility studies on both sides of the border.
- Reservation of the land needed for the Otay II POE by the Municipality of Tijuana through the State of Baja California. The act was published in the Periódico Oficial (similar to the U.S. Federal Register) on May 19, 2006 (#21 – Section 1). The initial five-year land reservation was extended in November 2011 for an additional five years.
- The Conceptual Master Plan, Cost/Benefit Studies and Financial Feasibility (Feasibility Study) for a new crossing at Otay Mesa East ("Elaboración del Plan Maestro Conceptual, Estudios de Costo Beneficio y Factibilidad Financiera para el Nuevo Cruce Internacional de Mesa de Otay II, en el Estado de Baja California"), conducted by the SCT.
- Approval of the Otay Mesa/Mesa de Otay Binational Corridor Strategic Plan by the SANDAG Board of Directors on September 28, 2007 and the Tijuana City Council on October 5, 2007.
- Approval of the ROD for Phase I of the Otay Mesa East POE and SR-11 Program by the FHWA in September, 2008.
- CEQA Certification of the PEIR/PEIS for Phase I of the Otay Mesa East POE and SR-11 Program on October 6, 2008.
- Approval of a conditional Presidential Permit to construct, operate, and maintain a vehicular and pedestrian border crossing at the Otay Mesa East POE location (included as Appendix A of this Final EIR/EIS) by DOS on November 20, 2008.

Mexico is undertaking a corresponding POE project on its side of the border, and Mexican agencies are addressing potential environmental impacts of concern to Mexico. The responsible agencies from Mexico and the U.S. also participate in the on-going Border Liaison Mechanism, which meets regularly to discuss transboundary issues and exchange information associated with the two projects. The Border Liaison Mechanism participants include FHWA, Mexico's SCT and IMPlan, SANDAG, Caltrans, the Mexican Consulate in San Diego, the American Consulate in Tijuana, GSA, and CBP.

Given the need for the new Otay Mesa East POE, SR-11 would be required to provide access to and from the new POE, through a currently undeveloped area. Planned County Circulation Element Roads in the area would not be adequate to carry the personal and commercial vehicle traffic expected to flow through the new POE. Proposed SR-11 would provide a direct connection from the existing and planned highway system in the area to the new Otay Mesa East POE (refer to Figure 1-1). On the Mexico side, the new POE (called Otay II) would be directly connected to the Tijuana-Tecate Toll Road, thus providing binational regional mobility through the new POE (IMPlan 2005; refer to Figure 1-3, *Conceptual Otay Mesa East Cross-Border Circulation Plan*). The Project Study Report (PSR) for SR-11 (Caltrans 2000) determined that the construction of a conventional highway or expressway would provide substantially less mobility for interregional cross-border traffic than would a freeway, and might not adequately handle the anticipated high volume of truck traffic, particularly at intersections. The option of using local roadways to access the POE was also considered. Local roadways, however, are not designed to support the large volume of trucks that would be anticipated to use the roads to access the POE. Furthermore, use of the local roads to connect trucks to the regional highway system would place the burden to maintain the roadway facilities serving truck traffic associated with international goods movement on local jurisdictions. In addition, local traffic circulation and access to future local businesses fronting these roadways could potentially be disrupted, as currently occurs due to queuing associated with congestion at the existing Otay Mesa POE. The project traffic study shows that a four-lane toll highway would be adequate to accommodate projected POE-related traffic at least through 2035.

The connection of the Otay Mesa East POE to the regional highway system via SR-11 would require the connection of SR-11 to SR-905 (currently under construction) and SR-125. SR-11 would replace a local access ramp to Enrico Fermi Drive that was approved as part of the SR-905 project. This approval included a westbound to northbound connection to SR-125 and one- to two-lane east- and westbound connections with SR-905. The traffic studies for SR-11 and engineering analysis show that the connections with SR-905 would require two lanes for the entire length, and that these lanes flowing into SR-905 cannot be fully tapered out until just west of Britannia Boulevard, due to the need to also accommodate merging traffic and weaving associated with the ramps to and from SR-125 and La Media Road. The result is that SR-905 would need to accommodate four lanes of travel in the westbound direction between SR-125 and Britannia Boulevard. In addition, on the eastbound side of SR-905, a new auxiliary lane would need to be extended between La Media Road and the SR-11 connector to accommodate anticipated traffic.

The new CVEF would allow CHP to efficiently inspect trucks entering the U.S. through the new POE to assure adequate safety levels when travelling on U.S. roadways. A similar, existing CVEF located on the eastern side of Enrico Fermi Drive between Siempre Viva Road and Via de la Amistad currently serves the existing Otay Mesa POE as a CHP inspection point for northbound commercial vehicles entering the U.S. through that POE, but this existing CVEF is currently operating near capacity and is expected to serve a planned modernization of the Otay Mesa POE. In addition, during the Tier II scoping process, it was determined that construction and operation of a new CVEF adjacent to the proposed Otay Mesa East POE would have considerable security, operational and environmental advantages over options providing access from the new POE to the existing CVEF.

In conclusion, the three interdependent elements to be constructed under the proposed project (i.e., the new POE, SR-11 and the new CVEF) are needed to alleviate congestion and facilitate improved trade and personal travel across the U.S. - Mexico border in the San Diego/Tijuana area.

1.2.3 Independent Utility and Logical Termini

FHWA regulations (23 CFR 771.111 [f]) require that the action evaluated:

1. Connect logical termini and be of sufficient length to address environmental matters on a broad scope,
2. Have independent utility or independent significance (be usable and require a reasonable expenditure even if no additional transportation improvements in the area are made), and
3. Not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.

As discussed above, the overarching need for the project is driven by the need for the new Otay Mesa East POE. SR-11 and its associated modifications to SR-905 would connect the new POE with the regional highway system, and the CVEF would allow CHP to fulfill its responsibilities to conduct safety inspections on incoming trucks passing through the new POE. The boundaries of the proposed project extend southeasterly from just west of Britannia Boulevard on the west, through the SR-905/SR-125 Interchange to the site of the proposed POE at the U.S. - Mexico border and the proposed CVEF site located adjacent to the POE on its northern edge. These boundaries are logical because they connect the essential elements of the proposed project and encompass the area potentially affected by project construction and operation. Together, the three interdependent elements create a project that has independent use and that represents a reasonable expenditure of public funds to benefit the local area, region, and nation, even without other planned improvements to transportation facilities and existing POEs. Also, the consideration of alternatives for other projects would not be restricted by the proposed project boundaries. As evaluated in detail in Section 3.1, Land Use, the proposed project would not conflict with other reasonably foreseeable transportation and development projects. The EOMSP identifies a conceptual SR-11 corridor and POE site approximating the proposed project, as well as a roadway network connecting with these facilities and serving local land uses. The EOMSP recognizes that modifications to this network may be necessary based on the approved final design of the proposed project. The project has been identified for many years in the County General Plan, and the City's General Plan and OMCP. In addition, property owners/developers have been tracking the proposed project and have been planning/designing their development projects to accommodate SR-11 and the proposed POE in the location that was selected in the Phase I ROD for the proposed project. Therefore, the proposed project satisfies the FHWA requirements for independent utility and logical termini.

1.2.4 Status of the Related SR-905 Project

The SR-905 ROD (FHWA-EIS-CA-01-03-F/July 23, 2004) approved the construction of SR-905 from I-805 to the Otay Mesa POE. As depicted in Figure 1-4, *Phases of the SR-905 Project*, this project is being constructed in the following phases:

Phase 1A: Includes construction of a new freeway from 0.6 kilometer (KM) east of Cactus Road to 0.3 KM west of the Mexico Border. Construction of this stage has been completed.

Phase 1B: Includes construction of a new freeway from 1.2 KM east of the I-805/SR-905 separation to 0.8 KM east of the Britannia Boulevard overcrossing. Construction of this stage has started, and is scheduled for completion in 2012.

Phase 2: Includes improvements to the I-805/SR-905 interchange. Construction of this phase is on SR-905 from 0.1 KM to 1.5 KM east of the I-805/SR-905 separation, and on I-805 from 0.2 KM north of the I-805/SR-905 separation to 0.5 KM south of the Palm Avenue overcrossing. The westbound SR-905 to northbound I-805 connector is being widened to two lanes. This phase includes construction of an auxiliary lane along northbound I-805 between SR-905 and Palm Avenue, as well as widening of the Del Sol Boulevard undercrossing. Construction of this phase began in Spring 2011 and was completed in January 2012.

Phase 3: Includes construction of the SR-905/SR-125 interchange. This phase will construct a two-lane local access ramp connecting SR-905 east of La Media Road to an intersection at Enrico Fermi Drive. It also includes an undercrossing at Sanyo Avenue, freeway-to-freeway connectors between SR-905 and SR-125, and a local access ramp to Siempre Viva Road from eastbound SR-905. This phase is currently unfunded. Because Phase 3 of SR-905 is currently unfunded and would be modified by proposed SR-11, it is proposed to incorporate part of this phase into the SR-11 project, including the connectors between SR-11 and SR-905. To this end, Phase 3 of the SR-905 project has been separated into two phases, 3A and 3B:

Phase 3A includes three connectors; eastbound SR-905 to eastbound SR-11, westbound SR-11 to westbound SR-905 and a westbound SR-905 exit ramp to La Media Road. (An interim exit ramp from westbound SR-905 to La Media Road was included in the construction of SR-905 Phase 1A.) The proposed SR-11 improvements for this area would modify the approved plans for Phase 3A of SR-905 between Britannia Boulevard and Enrico Fermi Drive to accommodate increased traffic volumes associated with the POE. Therefore, this phase would be incorporated into the proposed SR-11 project.

Phase 3B includes the remaining connectors associated with the original SR-905 Phase 3; i.e., connectors between SR-125 and SR-905, eastbound SR-905 and westbound SR-11 connectors to northbound SR-125, and the eastbound SR-905 to Siempre Viva Road exit ramp.

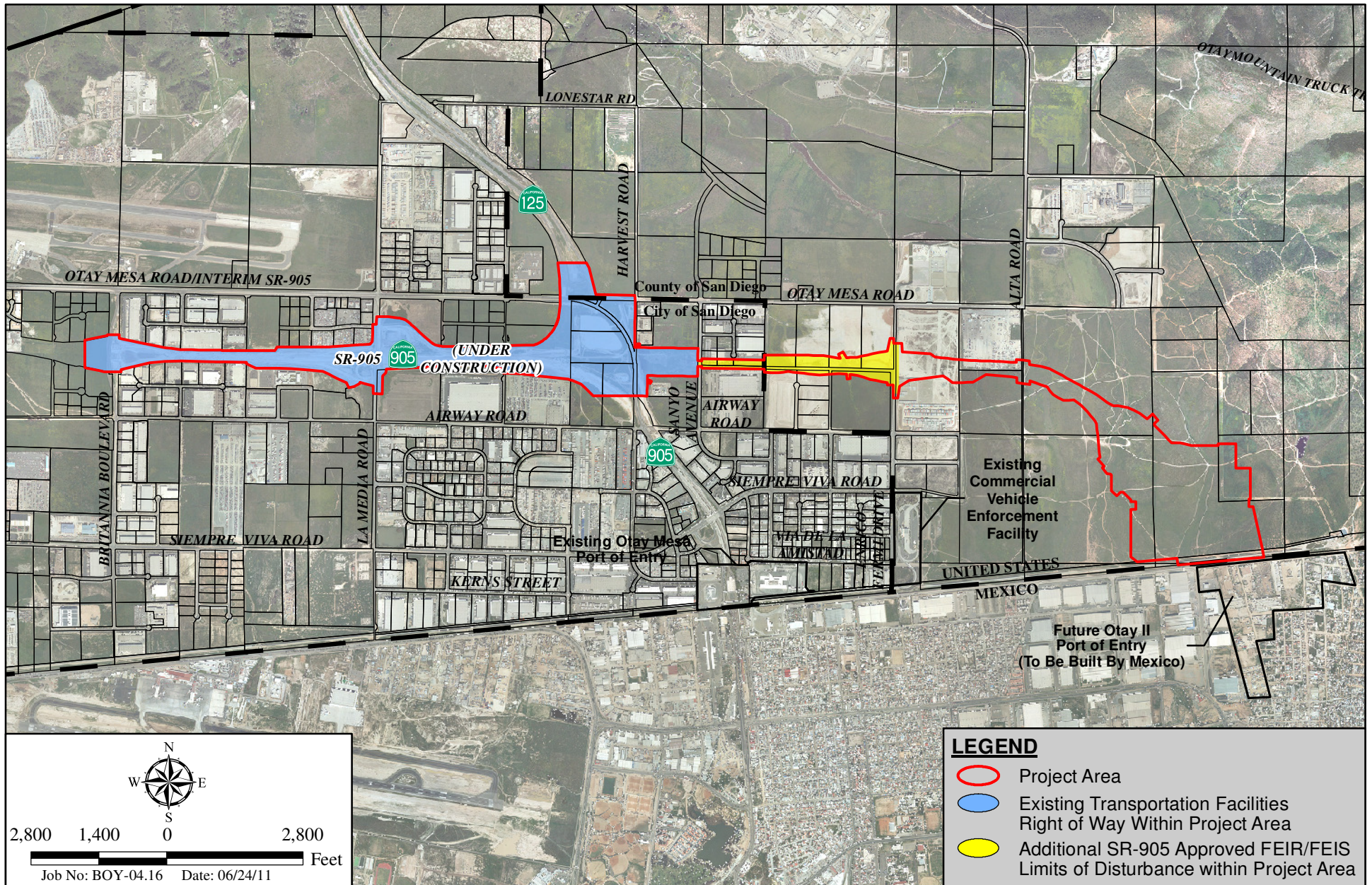
Phase 4: The final stage is to construct the Heritage Road Interchange. Should the local streets not receive all the necessary future approvals, the interchange may not be needed or constructed. Stage 4 is anticipated to be under construction no sooner than the Fall of 2016.



Regional Location Map

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

Figure 1-1



Project Area Map

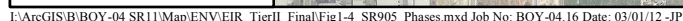
STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

Figure 1-2



STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

Figure 1-3



STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

Figure 1-4



Chapter 2

Project Alternatives

CHAPTER 2.0 – PROJECT ALTERNATIVES

2.1 PROJECT DESCRIPTION

2.1.1 Introduction/Background

This section describes the Tier II alternatives for the proposed SR-11 toll highway and Otay Mesa East POE project. As noted in Chapter 1.0, The purpose of the proposed project is to increase inspection processing capacities, reduce border crossing wait times, reduce northbound vehicle and pedestrian queues and wait times at other POEs in the region, accommodate projected increases in cross-border travel, help reduce congestion at existing POEs, and accommodate commercial goods movement and cross-border travel to and from the proposed Otay Mesa East POE. The Tier II alternatives and design variations were developed to meet the identified need through accomplishing the defined purpose while avoiding or minimizing environmental impacts.

As noted in Chapter 1.0, Proposed Project, a previous, program-level (Phase I) PEIR/PEIS was certified on August 6, 2008 (Caltrans 2008a), and the Phase I ROD was approved on October 6, 2008. The Phase I PEIR/PEIS focused on selecting generalized locations for proposed SR-11 and the POE site, analyzing the Western and Central alternatives depicted in Figure 2-1, *Phase I Program Alternatives*, as well as the No Build Alternative. An Eastern Alternative was previously studied and eliminated as a result of anticipated impacts to sensitive biological and cultural resources (see Section 2.3 below). Based on data provided in the PEIR/PEIS and information received during public review, the Phase I ROD selected the Western Alternative as the preferred SR-11 corridor and POE location over the Central Alternative for the following reasons:

- It would fulfill the Phase I program purpose and need
- It would exhibit a lower potential for Tier II impacts to listed/sensitive biological resources (i.e., it was the biologically preferred alternative)
- It would have a lower potential for land use impacts
- It was preferred by the majority of the cooperating and participating agencies, including the resource agencies
- It would be the more cost-effective solution to the program purpose and need

Based on the Phase I PEIR/PEIS and ROD, the Tier II analysis in this environmental document identifies and evaluates design and operational alternatives for the proposed new SR-11 toll highway, the POE, a related CVEF located adjacent to the POE, and SR-11 connectors to SR-905 and SR-125. Evaluation of proposed SR-11 in the Draft EIR/EIS included three build alternatives and a number of related design and operational variations, while the POE/CVEF analysis was based on a preliminary facility design/layout, including space for a potential future transit center adjacent to the POE and within the overall POE footprint. The Tier II alternatives are generally located within the boundaries of the Phase I Western Alternative, for which a conditional Presidential Permit was granted by the DOS in November 2008. The configurations of both the SR-11 and POE/CVEF sites have been refined during the Tier II scoping and Draft EIR/EIS public review processes, in response to various engineering, planning and environmental considerations. For instance, the shape of the POE was modified at the Tier II Draft EIR/EIS stage to accommodate grading requirements to achieve a usable 100-acre POE pad, and to address a request by the Mexican government to create a greater frontage or overlap with the proposed Mexican Otay II POE site, while still minimizing impacts to coastal sage scrub, wetlands/Waters of the U.S. (WUS), and sensitive plants. Consideration of agency and public input received during the Tier II Draft EIR/EIS public review process then resulted in additional adjustments to the shape and internal layout of the POE and CVEF, which are now reflected in the Preferred Alternative analyzed in this Final EIR/EIS. The Preferred

Alternative represents a refinement of the Two Interchange Alternative with the SR-125 Connector Variation: changes include modification of the eastern POE boundary resulting in a reduction in the overall POE area to reduce impacts to sensitive species; changes to the internal POE layout to reflect the latest design concept under evaluation by GSA; refinements and additions to conceptual plans for utility relocations and drainage facilities; design refinements at the SR-905/SR-125/SR-11 Interchange; and design refinements to accommodate connections to the Preferred Alternative design of the Siempre Viva Interchange.

SR-905 is currently under construction between SR-125 and Britannia Boulevard and would connect to proposed SR-11. SR-905 was originally approved as a six-lane highway (three lanes in each direction), with a median wide enough to accommodate four additional lanes, two of which could function as high occupancy vehicle (HOV) lanes should future demand justify their construction. Operation of the proposed project would require connectivity with SR-905. Therefore, the Tier II alternatives include connectors between SR-11 and SR-905 (and, depending on the alternative/variation, to SR-125), as well as associated modifications to SR-905 to accommodate merging vehicles. The Tier II project alternatives and variations are described below.

2.1.2 Project Location and Local Land Use/Planning Framework

Proposed SR-11 would extend generally east and south for approximately 2.1 miles from the approved SR-905/SR-125 Interchange (near Harvest Road), terminating at the proposed Otay Mesa East POE/CVEF sites (refer to Figures 1-1 and 1-2, in Chapter 1.0). Extending west of Harvest Road, the project would include approximately 2.1 miles of connectors linking SR-11 to SR-905 (and, depending on the alternative/variation, to SR-125), as well as associated modifications to SR-905 to accommodate merging vehicles. The majority of proposed SR-11 would be located within the County of San Diego EOMSP, which is part of the County's Otay Subregional Plan. The westernmost portion of proposed SR-11, the proposed connectors from SR-11 to SR-905 and SR-125, and the associated modifications to SR-905 extending through the Britannia Boulevard Interchange, would be within the OMCP area of the City of San Diego. The entirety of SR-11 would be located outside the boundary of the Coastal Zone. Existing development within the SR-11 limits of disturbance includes portions of an industrial park in the area just east of Sanyo Avenue, an adjacent developed industrial property, a vehicle auction yard near the southwestern corner of the Otay Mesa Road/Alta Road intersection, and an adjoining parcel to the west of this, which has been graded and is currently being used for truck parking. The remaining portions of the proposed SR-11 limits of disturbance encompass areas of native and non-native vegetation, previously graded (but undeveloped) sites, and a number of unpaved roads and trails (refer to Figure 1-2). Modifications to SR-905 to accommodate its connectors with SR-11 would occur between the SR-905/SR-125/SR-11 Interchange and the SR-905/Britannia Boulevard Interchange, and would be entirely within the existing R/W for SR-905. Industrial, undeveloped and educational (Southwestern College satellite campus) land abuts this segment of SR-905.

The combined POE/CVEF footprint would extend from the eastern/southern terminus of proposed SR-11 to the U.S. - Mexico international border, including improvements within a 150-foot wide U.S. Border Patrol enforcement area that extends along the border on the U.S. side. The POE and CVEF would be entirely within the EOMSP area and outside the boundary of the Coastal Zone. The proposed POE and CVEF sites are currently undeveloped, and encompass primarily non-native vegetation, with several unpaved roads and trails.

2.2 ALTERNATIVES

The alternatives addressed in this Final EIR/EIS were developed by a multi-disciplinary team to achieve the project purpose and need while avoiding or minimizing environmental impacts. Under evaluation in the Draft EIR/EIS were three build alternatives (referred to as the Two Interchange, One Interchange, and

No Interchange alternatives), with several design/operational variations (hereafter referenced together as the Draft EIR/EIS build alternatives), as well as the No Build Alternative. The Draft EIR/EIS build alternatives shared the same design for the proposed modifications to SR-905 to accommodate the connection with SR-11, as well as the same conceptual designs for the POE and CVEF. The differences associated with the Draft EIR/EIS build alternatives were reflected within the designs of SR-11, particularly with respect to the locations and configurations of interchanges, underpasses, and overpasses. Figure 2-2, *Comparative Overview of the Preferred Alternative and the Two Interchange Alternative*, and Figure 2-3, *Comparative Overview of the Draft EIR/EIS Build Alternatives*, compare the major features of the build alternatives. Briefly, the Draft EIR/EIS alternatives may be differentiated as follows:

- The Two Interchange Alternative includes two interchanges that would be constructed along SR-11 at Enrico Fermi Drive and the future extension of Siempre Viva Road, as well as an overcrossing at the future extension of Alta Road and an undercrossing at Sanyo Avenue. The interchange at Enrico Fermi Drive would be a full interchange, approximately one mile east of the SR-905/SR-125/SR-11 Interchange. Two design options were considered in the Draft EIR/EIS for the interchange at Siempre Viva Road (which would be approximately one mile farther east); a half interchange (“baseline” design) and a full interchange (variation).
- The One Interchange Alternative would incorporate a single full interchange at the future extension of Alta Road, approximately 1.4 miles east of the SR-905/SR-125/SR-11 Interchange. This alternative would also include overcrossings at Enrico Fermi Drive and the future extension of Siempre Viva Road, and an undercrossing at Sanyo Avenue.
- The No Interchange Alternative would have no interchanges along the proposed alignment of SR-11. Overcrossings would be built at Enrico Fermi Drive, and at the future extensions of Alta Road and Siempre Viva Road, and an undercrossing would be built at Sanyo Avenue.

Several potential designs were under consideration in the Draft EIR/EIS for the SR-905/SR125/SR-11 Interchange. The original Draft EIR/EIS “baseline” design included the eastbound SR-905 to eastbound SR-11 connector and the westbound SR-11 to westbound SR-905 connector (as well as an exit ramp to La Media Road from the westbound connector). Variations under consideration in the Draft EIR/EIS for this interchange included the SR-125 Connector Variation (which would provide a flyover to connect southbound SR-125 to eastbound SR-11) and the SR-905/SR-125/SR-11 Full Interchange Variation (which, in addition to the flyover connector, would also add connectors from westbound SR-905 to eastbound SR-11 and from westbound SR-11 to eastbound SR-905). Finally, a variation was considered in the Draft EIR/EIS that would provide a 46-foot median between the existing buildings east of Sanyo Avenue, instead of the proposed “baseline” 22-foot median in this segment of the project.

It should be noted that, at the time of publication of this Final EIR/EIS, the designs of the POE and CVEF are not as advanced as the design of SR-11. As the designs advance, it will be necessary for the lead agency(s) to conduct reviews to determine whether additional impacts are likely to occur. If new impacts are identified, additional environmental review and documentation may be required.

Upon consideration of agency and public input received during the Draft EIR/EIS public review process, a Preferred Alternative has been identified that is based on the Two Interchange Alternative with the SR-125 Connector Variation, with the following modifications:

1. At the southeastern edge of the POE, the Preferred Alternative has been designed to reduce impacts to sensitive vegetation and steep slopes by moving the southeastern boundary to the west, compared to the Draft EIR/EIS build alternatives.

2. The staff access road from the CVEF to the Siempre Viva Road half interchange included in the Two Interchange Alternative would be upgraded to also allow northbound commercial vehicles to leave the CVEF and access Siempre Viva Road directly, without accessing SR-11. As a result, the Preferred Alternative in this area would represent something of a hybrid of the Two Interchange Alternative (with a half interchange at Siempre Viva Road) and the Siempre Viva Road Full Interchange Variation, both of which were analyzed in the Draft EIR/EIS. Unlike this full interchange variation, the Preferred Alternative design of this interchange would not include the two ramps allowing southbound access from Siempre Viva Road into the POE and the third loop ramp allowing northbound passenger-only traffic from the POE to access Siempre Viva Road. Compared to the Two Interchange Alternative, the westbound access to SR-11 from Siempre Viva Road under the Preferred Alternative would be located farther north, at the intersection of the commercial vehicle exit road from the CVEF to Siempre Viva Road. As a hybrid of the half and full interchange versions of the Siempre Viva Road Interchange, the Preferred Alternative's footprint would be smaller than the full interchange but larger than the half interchange.
3. In the Sanyo Avenue area, the easements on either side of the SR-11 alignment would be wider than those identified for the Two Interchange Alternative, and the drainage pipe in one of these easements would be 72 inches in diameter instead of 66 inches.
4. Small drainage easements would be added on the north and south sides of SR-11 just east of the Enrico Fermi Drive Interchange.
5. The SR-905/SR-125/SR-11 Interchange would differ slightly from that identified under the Two Interchange Alternative with the SR-125 Connector Variation. The southbound SR-125 to eastbound SR-11 connector and the southbound SR-125 to eastbound SR-905 connector would be redesigned, so that the SR-125 flyover would be smaller. In addition, the planned westbound off-ramp from SR-905 to La Media Road and the westbound SR-11 off-ramp to La Media Road would be slightly different from those identified for the Two Interchange Alternative with the SR-125 Connector Variation.
6. On the eastern edge of the SR-905/SR-125/SR-11 Interchange, a 69kV power line would be re-routed. The line would be placed on two new, taller poles that would replace three existing poles. These poles would be relocated on new foundations in permanent utility easements outside of the highway R/W, but within the area environmentally cleared for the SR-905 project. This would allow vertical clearance over the SR-11 and SR-125 connectors.
7. A conceptual design has been identified for the relocation of the 30-inch high-pressure natural gas line that is currently located along the southern boundary of the POE site. The design shows the worst case scenario of relocating the natural gas line around the perimeter of the POE; a more direct route through the POE site may be identified in the future.
8. Additional conceptual design information has been developed regarding the potential locations and sizes of detention and/or retention basins.

SR-11 would be constructed and operated as a toll facility under all of the build alternatives (including the Preferred Alternative), with SANDAG as the toll authority under state legislation (Division 17 of the Streets and Highways Code, Sections 31460 through 31482 – the Otay Mesa East Toll Facility Act). The proposed toll system would include toll collection in each direction and the use of “smart technology” such as FasTrak. SANDAG and Caltrans, along with partner agencies in Mexico, have initiated a Traffic and Revenue Study that will evaluate in detail issues of toll pricing and the financial feasibility of the project, but it is anticipated that tolls would vary by vehicle type, and variable congestion pricing would

be implemented for both commercial and passenger vehicles. This system is intended to provide a financial incentive to encourage accessing the POE during non-peak hours, thereby reducing peak hour congestion.

A draft of the Traffic and Revenue Study is scheduled to be completed in Spring 2012. The document will discuss the process, expected outcome and the overall strategy of the financing capacity related to tolling structure for the proposed project. Once the study is complete, it will be used in obtaining toll revenue bonds to finance the project, and will be presented to the SANDAG Board of Directors, to assist them in setting the toll rates. As part of the process, the public will be provided the opportunity to attend meetings and review and comment on the available documentation. Upon its completion, the Traffic and Revenue Study will provide the most comprehensive analysis of the project's financial feasibility. Until that time, the 2006 SANDAG/Caltrans *State Route 11 Toll Road and East Otay Mesa Port of Entry Financial Feasibility Study* is considered to represent current information regarding the financial feasibility of the project.

Preliminary cost projections provided in the 2006 financial feasibility study suggest that anticipated non-peak to peak hour tolls could range from approximately \$32 to \$47.30 for commercial vehicles, and \$1.60 to \$7 for passenger vehicles (SANDAG/Caltrans 2006a). Information on transit usage of the facility and related tolling strategies is not currently available, but the proposed project would not preclude different tolling strategies, transit usage, or compatibility with a potential future transit center. Competitive pricing for transit vehicles may be employed to encourage transit ridership and reduce passenger vehicle traffic, at the discretion of SANDAG. Pedestrians and bicycles crossing the border but not accessing SR-11 would not be subject to a toll. A variation of the build alternatives in which vehicles are not subject to a toll (the No Toll Variation) was also analyzed in the Draft EIR/EIS.

HOV lanes are not included in this project because the 2.1-mile length of SR-11 would not allow sufficient space for weaving associated with vehicles moving to the HOV lanes and then merging back to the appropriate lanes for entering the POE. Other Transportation Systems Management/Transportation Demand Management (TSM/TDM) measures are incorporated into all of the build alternatives and variations, however. The project design includes a site for a future transit center (to be constructed by others), as well as a pedestrian pick-up/drop-off location, and will accommodate pedestrian and bicycle crossings. Pedestrians and bicyclists would not be subject to a toll, which provides an incentive for these modes. TSM/TDM measures currently being evaluated for the project include: (1) possible use of ramp metering at SR-11 interchange(s); (2) implementation of intelligent transportation systems (ITS) strategies such as closed-circuit television (CCTV) cameras, traffic loop monitoring stations (TMS) and transportation management center (TMC) connections; (3) provision of multi-modal facilities and services for POE uses such as bicycle, pedestrian and bus facilities (e.g., dedicated lanes and staging areas), connectivity potential for BRT service, and inclusion of space for a potential future transit center site (to be constructed by others); (4) implementation of variable congestion pricing; (5) provision of dedicated commercial and passenger traffic lanes; and (6) use of extended POE operation hours.

Implementation of SR-11, the POE and CVEF under all of the project build alternatives would require partial acquisition of 19 parcels, 18 of which are privately owned; the remaining parcel is owned by the Otay Water District (OWD). In the area west of Enrico Fermi Drive, SR-11 and its connectors to SR-905 would lie primarily within the area previously approved as part of the SR-905 project. Under the SR-11 project, however, proposed property acquisitions in the Sanyo Avenue area would be greater than those approved for the SR-905 local access connection to Enrico Fermi Drive. West of Sanyo Avenue, the proposed R/W is currently under Caltrans ownership. More detailed information on property requirements is provided in Section 3.1, *Existing and Future Land Use* and Section 3.5, *Relocations and Real Property Acquisitions*.

The remainder of Section 2.2 describes and differentiates between the project alternatives and design variations, defines the No Build Alternative, and briefly describes the decision-making process required to select an alternative and approve the project. This section is organized as follows:

2.2.1 State Route 11

- Common SR-11 Major Features Under All Build Alternatives
- Preferred Alternative – Additional Major Features
- Two Interchange Alternative – Additional Major Features
 - Siempre Viva Road Full Interchange Variation on the Two Interchange Alternative
- One Interchange Alternative – Additional Major Features
- No Interchange Alternative – Additional Major Features
- Variations on Any of the Build Alternatives
 - No Toll Variation
 - 46-foot Median Variation
 - SR-905/SR-125/SR-11 Interchange Variations
 - SR-125 Connector Variation
 - SR-905/SR-125/SR-11 Full Interchange Variation
- Additional Features of SR-11

2.2.2 Otay Mesa East Port of Entry

- Major POE Features
- Additional POE Features

2.2.3 Commercial Vehicle Enforcement Facility

2.2.4 Design Exceptions

- Mandatory Design Exceptions
- Advisory Design Exceptions

2.2.5 No Build Alternative

2.2.6 Decision-making Process

2.2.1 State Route 11

Common SR-11 Major Features Under All Build Alternatives

Under each of the build alternatives analyzed in this Final EIR/EIS (including the Preferred Alternative), SR-11 would be constructed as a 2.1-mile, four-lane toll highway, with two lanes in each direction plus auxiliary lanes and connectors (refer to Figures 2-2 and 2-3). It would extend east from the vicinity of Harvest Road (at the future SR-905/SR-125 Interchange) for approximately 1.5 miles, before curving to the southeast near Alta Road and continuing for approximately 0.6 mile to connect with the proposed POE/CVEF site. To link SR-11 to SR-905 and accommodate merging vehicles, it would also be necessary to modify the eastern portion of SR-905. Proposed SR-11 would be located midway between Otay Mesa Road and Airway Road for most of its length, and would cross four existing or planned local

surface streets: Sanyo Avenue, Enrico Fermi Drive, Alta Road, and Siempre Viva Road. Of these, Sanyo Avenue is currently classified by the City of San Diego as a two-lane collector road at the project location, planned to be a four-lane major road at build out. Enrico Fermi Drive is currently classified by the County of San Diego as a collector road, and is planned to be a major road at build out. Alta Road is currently in use as an unpaved road, and Siempre Viva Road is not yet built at the project location, but the EOMSP Circulation Element indicates that both are planned to extend into the project site as major roads in the future. Undercrossings, overcrossings or interchanges would be provided at each of these locations, depending on the project alternative. Construction of interchanges and over/undercrossings would be planned in consultation with the County, and would be timed to coordinate with the implementation of local road infrastructure.

Traffic studies have indicated that a four-lane facility would be adequate to accommodate projected traffic through at least 2035. The proposed design would include primarily standard-width main lanes (12 feet wide) and shoulders (10 feet wide), along with standard sight distances. Auxiliary lanes would also be included between interchanges. Maintenance vehicle pullouts would be incorporated as a feature along the highway within the project footprint.

Median Facilities

The median would be 22 feet wide beginning at Sanyo Avenue, before widening to a 62-foot median width leading up to the POE. Figure 2-4 (*Cross-Sections of SR-11 in the Sanyo Avenue Area: Preferred Alternative and Two Interchange Alternative [with 22-foot Median]*), Figure 2-5 (*Cross-Sections of SR-11 in the Sanyo Avenue Area: Two Interchange Alternative [with 22-foot Median] and 46-foot Median Variation*), and Figure 2-6 (*Cross-Sections of SR-11 in the Sanyo Avenue Area: One and No Interchange Alternatives [with 22-foot Median] and 46-foot Median Variation*) illustrate the elevated section of SR-11 just east of the Sanyo Avenue undercrossing, where the median would be 22 feet wide to minimize impacts to nearby buildings. The Sanyo Avenue undercrossing is described in more detail later in this chapter. Concrete barriers (three feet tall) would extend along each side of the roadway in the Sanyo Avenue area, and an additional three-foot-tall concrete barrier would extend along the median. Although the number of lanes through this area would vary by alternative, all of the build alternatives, including the Preferred Alternative, would have a 22-foot median in the Sanyo Avenue area. A variation of the Draft EIR/EIS build alternatives incorporating a 46-foot median instead of the 22-foot median is presented later in this chapter.

The proposed 62-foot median width in the eastern portion of SR-11 (refer to Figure 2-7, *Typical Cross-Section of SR-11 with 62-foot Median [All Alternatives]*) is intended to make SR-11 adaptable for potential safety and security needs, and to provide the flexibility to construct additional lanes on approach to the POE, if these are found to be necessary to meet future vehicle inspection requirements. This additional R/W would help ensure access to the new POE by emergency responders, facilitate evacuation of the POE if necessary, or allow southbound traffic to be turned around if the POE had to be closed for emergency security concerns.

SR-905 Connectors

The eastern portion of approved SR-905 includes ramps from SR-905 to Enrico Fermi Drive, along the approximate alignment of proposed SR-11 and SR-11/SR-905 connectors. With implementation of SR-11, certain modifications to the approved SR-905 would be required, and are included as part of the proposed project. These modifications are described below and illustrated in Figures 2-8a and 2-8b, *Major Project Features West of SR-905/SR-125/SR-11 Interchange (Preferred Alternative)*, Figure 2-9, *SR-905/SR-125/SR-11 Interchange (Preferred Alternative)*, Figures 2-10a and 2-10b, *Major Project Features West of SR-905/SR-125/SR-11 Interchange (All Draft EIR/EIS Build Alternatives)*, Figure 2-11, *SR-905/SR-125/SR-11 Interchange (All Draft EIR/EIS Build Alternatives)*, and Figure 2-12, *Cross-Sections of SR-905 Modifications Under All Build Alternatives*.

1. The previously approved ramps between SR-905 and Enrico Fermi Drive would be replaced by the western portion of SR-11 (east of Harvest Road), as well as two-lane connectors in each direction (west of Harvest Road) for the entire distance between SR-905 and SR-11. The northern (westbound) connector would be constructed along approximately the same alignment as the previously approved SR-905 on-ramp from Enrico Fermi Drive, while the southern (eastbound) connector would follow the approved off-ramp alignment for some of its length, but would curve approximately 110 feet further south between SR-905 stations 627+00 and 641+00, to reduce the length of the bridge span over SR-905.
2. To accommodate the merge to westbound SR-905, the SR-11 connector merge would taper to match SR-905 in the vicinity of the Britannia Boulevard Interchange. This merge occurred at the La Media Road Interchange in the previously approved design for SR-905.
3. On the westbound side of SR-905, the build alternatives would construct a ramp from SR-11 to tie into the planned SR-905 off-ramp to La Media Road.

The SR-905 modifications to accommodate the proposed SR-11 connectors would be entirely within existing state R/W, and would be identical under all of the Draft EIR/EIS build alternatives. The SR-905 modifications under the Preferred Alternative would vary slightly from those analyzed in the Draft EIR/EIS; these are described later in this chapter, but would also be entirely within the existing state R/W.

Sanyo Avenue Undercrossing

At the Sanyo Avenue undercrossing, SR-11(bottom of bridge) would be approximately 24 feet above Sanyo Avenue, permitting the local road to pass under the new highway, but allowing no interchange of traffic between them. East of Sanyo Avenue, SR-11 would pass between existing industrial buildings and would be supported by retaining walls for a distance of approximately 1,250 feet as it slopes gradually downward to meet the surrounding grade. The walls and headwall structure at Sanyo Avenue would be up to approximately 26 and 22 feet high on the south and north sides of SR-11, respectively, with the highest portions of the walls located nearest to Sanyo Avenue. Three-foot high barriers would be provided at the edge of pavement along this elevated portion of SR-11. Screening on top of the outer barriers in the Sanyo Avenue area may be included for safety and security purposes.

This design is intended to avoid the use of extensive fill slopes to support the elevated roadway, which would have resulted in requirements for additional acquisition of existing developed industrial property along both sides of SR-11 in this area. Proposed SR-11 in this area is similar to the local access connection between SR-905 and Enrico Fermi Drive that was approved as part of the SR-905 project. While an undercrossing would be constructed at Sanyo Avenue under each of the Draft EIR/EIS build alternatives and the Preferred Alternative, the width of roadway (number of lanes) would vary depending upon the alternative.

Retaining Wall at Siempre Viva Road

A retaining wall of approximately 415 feet in length would run between the eastbound and westbound passenger lanes, gradually rising from about 3 feet in height just north of the easternmost SR-11 toll plaza (north of the proposed POE) to approximately 20 feet high at the Siempre Viva Road overcrossing bridge. This concrete retaining wall would serve to elevate the westbound passenger lane to access SR-11 from the POE.

Biological Mitigation Sites

For any of the project build alternatives, mitigation for SR-11/POE/CVEF impacts to biological resources is proposed to occur off site on three Lonestar parcels acquired by Caltrans on Otay Mesa, as well as Johnson Canyon, a drainage that extends onto one of the Lonestar parcels. These parcels are located north/northeast of Brown Field, east and west of SR-125 and south of the Otay River Valley (refer to sections 3.19 through 3.23). This EIR/EIS includes analysis of the potential impacts of proposed restoration, enhancement and preservation activities associated with these mitigation sites.

The above features would be common to all of the build alternatives, including the Preferred Alternative. The unique characteristics of each alternative are described below.

Preferred Alternative – Additional Major Features

The Preferred Alternative would include the construction of interchanges along SR-11 at Enrico Fermi Drive and Siempre Viva Road, as well as an overcrossing at Alta Road and an undercrossing at Sanyo Avenue. This Alternative was developed in response to agency and public input received during the Draft EIR/EIS public review process. The majority of commenters expressed a preference for a design with interchanges at Enrico Fermi Drive and Siempre Viva Road, consistent with the tentative design for SR-11 that is reflected in the EOMSP. A two-interchange design with full interchanges in both locations would provide the greatest possible connectivity to planned and existing Circulation Element roads in the EOMSP area, but would present potential mobility and operational challenges with respect to interchange spacing that would not meet FHWA standards. The Preferred Alternative was developed to capture most of the benefits of the Two Interchange Alternative with the Siempre Viva Full Interchange Variation and the SR-125 Connector Variation, while avoiding these operational challenges to the extent possible. Figures 2-13a through 2-13d, *Preferred Alternative – Major Project Features Sheets* depict the unique features of the Preferred Alternative. Similar to the SR-125 Connector Variation analyzed in the Draft EIR/EIS, the Preferred Alternative also would include the addition to the current SR-905/SR-125 Interchange of a southbound SR-125 to eastbound SR-11 connector, and an updated version of the SR-905 modifications and connectors.

Sanyo Avenue Undercrossing

Under the Preferred Alternative, SR-11 at the Sanyo Avenue undercrossing would be constructed to a width of approximately 116 feet, and would include an auxiliary lane in each direction, in addition to the two standard travel lanes in each direction. The major features of this undercrossing are described above in the section on common SR-11 major features under all build alternatives. Figure 2-4 depicts a cross-section of this segment. In the Sanyo Avenue area, this alternative would include a 72-inch storm drain pipe parallel to SR-11, as well as permanent drainage easements up to 28 feet wide and temporary construction easements up to 10 feet wide on both sides of the R/W. It is currently anticipated that the storm drain pipe would be located on the south side of SR-11, but if it is determined to be necessary during final design, it could be located in a similar position on the north side. During final design, it may also be determined that narrower easements suffice on one side of SR-11 or the other.

Enrico Fermi Drive Interchange

The Enrico Fermi Drive Interchange would be located approximately one mile east of the SR-905/SR-125/SR-11 Interchange, and approximately one mile west of the interchange proposed at Siempre Viva Road (refer to Figures 2-2 and 2-13b). The Enrico Fermi Drive Interchange would be a standard full-diamond, with on- and off-ramps for both eastbound and westbound SR-11. Automated toll facilities are anticipated along the westbound on-ramp and eastbound off-ramp (refer to Figure 2-13b).

This interchange design would allow Enrico Fermi Drive to pass over SR-11. Graded slopes in the vicinity of the interchange would include only cut slopes of up to approximately 30 feet in height.

Alta Road Overcrossing

SR-11 would pass under Alta Road, with no interchange of traffic between the highway and the local road (refer to Figure 2-13c). In the immediate vicinity of Alta Road, grading would involve only fill slopes, estimated to range up to 20 feet high east of the overcrossing. Alta Road would also be elevated on a structure to pass over SR-11.

Siempre Viva Road Interchange

Under the Preferred Alternative, an interchange at Siempre Viva Road would be located approximately one mile east of the proposed Enrico Fermi Drive Interchange, and approximately 2,400 feet (0.45 mile) east of the Alta Road overcrossing. The proposed Siempre Viva Road Interchange would be a modified half interchange, with separate ramps for passenger-only and commercial-only traffic into and out of the new POE/CVEF. This partial interchange would also provide an off-ramp to Siempre Viva Road from eastbound SR-11, an on-ramp from Siempre Viva Road to westbound SR-11, and one-way access from the POE/CVEF to Siempre Viva Road for commercial vehicles only. The interchange would not provide access from Siempre Viva Road to the POE via eastbound SR-11, nor would it provide public access to Siempre Viva Road for passenger northbound vehicles exiting the POE. All passenger vehicles exiting the POE would have to take westbound SR-11, with the exception of POE/CVEF employees. Details regarding this interchange are described below and depicted in Figure 2-13d:

1. The eastbound through lanes on SR-11 would split approximately 2,300 feet (0.44 mile) west of the combined POE/CVEF site to provide four lanes for commercial-only and passenger-only vehicles. This would include two dedicated lanes for commercial vehicles to access the POE, and two dedicated lanes for passenger vehicles to access the POE and a potential future transit center site, prior to crossing the border into Mexico. A passenger drop-off/pick-up area and the potential future transit center site (to be designed and constructed by others) could also be served by these passenger vehicle lanes.
2. Through traffic along Siempre Viva Road would pass over SR-11. A diamond-style off-ramp would be constructed for commercial and passenger vehicle traffic on eastbound SR-11 to access Siempre Viva Road. This ramp would also include automated toll facilities as previously described for Enrico Fermi Drive. A separate two-way roadway segment could extend south of Siempre Viva Road at the off-ramp junction to provide access to and from the toll administration facilities.
3. A loop-style on-ramp would be constructed for northbound passenger vehicle traffic from the POE to access westbound SR-11.
4. Northbound commercial traffic from the POE would first enter the CVEF for a safety inspection, and then would have two options:
 - o Commercial vehicles could access westbound SR-11 via a direct roadway link extending west and north from the CVEF site; or,
 - o One-way direct access would be provided for commercial vehicle traffic to Siempre Viva Road from the CVEF. (POE/CVEF staff vehicles would be able to use this road for access both to and from Siempre Viva Road.)

5. A diamond-style on-ramp with automated toll facilities would be constructed for traffic from Siempre Viva Road to access westbound SR-11.
6. Graded slopes in the vicinity of this interchange would include cut slopes along the eastern side of the interchange of approximately 5 to 10 feet in height, and fill slopes in the remaining portion of the interchange of approximately 10 to 20 feet in height.

The total limits of disturbance (permanent and temporary) for the Preferred Alternative would be 470.6 acres. This includes 223.7 acres within existing transportation facility R/W west of Sanyo Avenue, 117.6 acres of proposed new SR-11 R/W east of Sanyo Avenue (containing 5.8 acres of existing roads), 101.1 acres for the POE and 17.9 acres for the CVEF. In addition, permanent utility, drainage and wall footing easements totaling 1.7 acres and temporary construction easements totaling 0.6 acre are proposed to the north and south of the SR-11 R/W in the area east of Sanyo Avenue, and a total of 0.6 acre of drainage easements is proposed just west of the Enrico Fermi Interchange and adjacent to the project R/W on the west side of the Siempre Viva Road overcrossing. Two 100-square-foot utility easements (totaling 0.0045 acre) to accommodate relocated electrical towers would be located adjacent to the east side of the SR-905/SR-125/SR-11 Interchange. In the vicinity of the POE/CVEF, there would be 1.4 acres of natural gas pipeline easements and approximately 6.0 acres of disturbance area within the adjacent strip of land under U.S. Border Patrol control. The total limits of disturbance for the Preferred Alternative would be 15.9 acres less than the “baseline” Two Interchange Alternative described below, and 35.9 acres less than the Two Interchange Alternative with the Siempre Viva Road Full Interchange Variation, also described below.

Two Interchange Alternative – Additional Major Features

This section describes the Two Interchange Alternative that was evaluated in the Draft EIR/EIS. Similar to the Preferred Alternative, the Two Interchange Alternative would include the construction of interchanges along SR-11 at Enrico Fermi Drive and Siempre Viva Road, as well as an overcrossing at Alta Road and an undercrossing at Sanyo Avenue. The Two Interchange Alternative was evaluated in the Draft EIR/EIS because the community had voiced a preference for a design with interchanges at Enrico Fermi Drive and Siempre Viva Road, consistent with the tentative design for SR-11 that is reflected in the EOMSP. It was noted in the Draft EIR/EIS that a two-interchange design would provide the greatest possible connectivity to planned and existing Circulation Element roads in the EOMSP area, but would present potential mobility and operational challenges with respect to interchange spacing that would not meet standards. Figures 2-14a through 2-14d, *Two Interchange Alternative – Major Project Features Sheets* depict the unique features of the Two Interchange Alternative.

Sanyo Avenue Undercrossing

As in the case of the Preferred Alternative, the Two Interchange Alternative would construct SR-11 at the Sanyo Avenue undercrossing to a width of approximately 116 feet, with an auxiliary lane and two standard travel lanes in each direction. The major features of this undercrossing are described above in the section on common SR-11 major features under all build alternatives. Figure 2-4 depicts a cross-section of this segment. In contrast to the Preferred Alternative design in the Sanyo Avenue area, the Two Interchange Alternative would include a 66-inch detention basin pipe parallel to SR-11, a 13-foot-wide permanent easement on the north side of the R/W, a 12-foot-wide permanent easement on the south side of the R/W, and no additional temporary easements. The pipe and easements were thought to be adequate at the time the Two Interchange Alternative was designed, but subsequent design considerations have revealed the need for a larger pipe and wider easements.

Enrico Fermi Drive Interchange and Alta Road Overcrossing

Under the Two Interchange Alternative, the Enrico Fermi Drive Interchange and Alta Road Overcrossing would be the same as described for the Preferred Alternative.

Siempre Viva Road Interchange

Similar to the Preferred Alternative, the Two Interchange Alternative would include an interchange at Siempre Viva Road located approximately one mile east of the proposed Enrico Fermi Drive Interchange, and approximately 2,400 feet (0.45 mile) east of the Alta Road overcrossing. The proposed Siempre Viva Road Interchange under this alternative would be a half interchange, with separate ramps for passenger-only and commercial-only traffic into and out of the new POE/CVEF. The Two Interchange Alternative does not provide the one-way commercial vehicle access connection from the POE/CVEF to Siempre Viva Road that was added to the design for the Preferred Alternative. Accommodations would be provided for pedestrian pick-up and drop-off. Similar to the Preferred Alternative, the Siempre Viva Road half interchange of the Two Interchange Alternative would provide an on-ramp from Siempre Viva Road to westbound SR-11 and an off-ramp to Siempre Viva Road from eastbound SR-11, with no access provided from Siempre Viva Road to the POE via eastbound SR-11 and no public access to Siempre Viva Road for passenger-only vehicles exiting the POE via westbound SR-11. (A controlled-access road just east of the interchange would permit entry for POE/CVEF employees only.) The Siempre Viva Road Interchange under the Two Interchange Alternative is depicted in Figure 2-14d.

The total limits of disturbance for the Two Interchange Alternative would be 486.5 acres. This includes 232.0 acres within existing transportation facility R/W west of Sanyo Avenue, 115.2 acres of proposed new SR-11 R/W east of Sanyo Avenue, 106.3 acres for the POE and 23.3 acres for the CVEF. In addition, easements totaling 0.7 acre are proposed to the north and south of the SR-11 R/W in the area east of Sanyo Avenue, and a 0.2-acre drainage easement is proposed adjacent to the project R/W on the west side of the Siempre Viva Road overcrossing. In the vicinity of the POE/CVEF, there would be 1.4 acres of natural gas pipeline easements and 7.4 acres of disturbance area within the adjacent strip of land under U.S. Border Patrol control. The total limits of disturbance for the Two Interchange Alternative would be 15.9 acres greater than the Preferred Alternative.

Siempre Viva Road Full Interchange Variation of the Two Interchange Alternative

Several design and operational variations were proposed in the Draft EIR/EIS, with the potential for these to apply to any of the Draft EIR/EIS build alternatives; these are discussed later in this section. As described in the Draft EIR/EIS, the Siempre Viva Road Full Interchange Variation applied only to the Two Interchange Alternative. The Siempre Viva Road Full Interchange Variation was included for evaluation in the Draft EIR/EIS because it was the community's preferred design and was consistent with the tentative design for SR-11 that is reflected in the EOMSP. It would provide additional direct access for all movements between Siempre Viva Road and SR-11, but it would also present challenges with respect to vehicle weaving and queues at the border crossing. This variation would construct a full interchange at SR-11/Siempre Viva Road accommodating all movements between Siempre Viva Road and SR-11, instead of the half interchange described for the "baseline" Two Interchange Alternative. As shown on Figure 2-15, *Siempre Viva Road Full Interchange Variation of the Two Interchange Alternative*, in addition to the features described for the "baseline" Two Interchange Alternative (with a half interchange at Siempre Viva Road), this variation would include the elements listed below.

- Two separate ramps (one for commercial-only traffic and one for passenger-only traffic) would be constructed to provide access from Siempre Viva Road to the POE.

- A ramp would be constructed for northbound passenger-only traffic from the POE to access Siempre Viva Road.
- Direct access would be provided for commercial-only traffic to Siempre Viva Road from the CVEF.

The total limits of disturbance for the Two Interchange Alternative with the Siempre Viva Road Full Interchange Variation would be 506.5 acres, or 20.0 acres greater than the “baseline” Two Interchange Alternative, and 35.9 acres greater than the Preferred Alternative.

One Interchange Alternative – Additional Major Features

Under the One Interchange Alternative, proposed SR-11 would be constructed with a single interchange at Alta Road, approximately 1.4 miles east of the SR-905/SR-125/SR-11 Interchange (refer to Figure 2-3 and Figures 2-16a through 2-16d, *One Interchange Alternative - Major Project Features Sheets*). This would be a full interchange accommodating all vehicle movements between Alta Road and SR-11, as described below. SR-11 would have an undercrossing structure at Sanyo Avenue and overcrossings at Enrico Fermi Drive and Siempre Viva Road. The One Interchange Alternative was evaluated in the Draft EIR/EIS because it would increase the distances between the SR-905/SR-125/SR-11 Interchange and the first local road interchange along SR-11, as well as between the easternmost local road interchange and the entrance to the POE (compared to the Preferred Alternative and the Two Interchange Alternative), thereby increasing weaving lengths and improving traffic flows, while still providing one interchange for direct access between SR-11 and the EOMSP area. Interchange spacing under this alternative would still not meet FHWA standards, however, and the distance between the two local interchanges under the Preferred Alternative would be greater than the interchange spacing provided under the One Interchange Alternative.

Sanyo Avenue Undercrossing

Under the One Interchange Alternative, SR-11 at the Sanyo Avenue undercrossing would be constructed to a width of approximately 96 feet, and would include only the two standard travel lanes in each direction (no auxiliary lanes). The features of this undercrossing are described above in the section on common SR-11 major features under all build alternatives. Figure 2-6 depicts a conceptual cross-section of this segment.

Enrico Fermi Drive Overcrossing

SR-11 would pass under Enrico Fermi Drive, with no interchange of traffic between the highway and the local road (refer to Figure 2-16b). In the immediate vicinity of Enrico Fermi Drive, grading would involve only cut slopes, estimated to range up to 44 feet high on either side of the overcrossing.

Alta Road Interchange

Under the One Interchange Alternative, an interchange would be built at Alta Road, instead of an overcrossing. The Alta Road Interchange would be a combined diamond/loop configuration (refer to Figure 2-16c). Specific proposed design features for the Alta Road Interchange include the following:

- A diamond-style on-ramp (with automated toll facilities) for traffic on Alta Road to access westbound SR-11
- A loop-style on-ramp for traffic on Alta Road to access eastbound SR-11

- A diamond-style off-ramp (with automated toll facilities) for traffic on eastbound SR-11 to access Alta Road
- A loop-style off-ramp for traffic on westbound SR-11 to access Alta Road
- In the immediate vicinity of the Alta Road Interchange, grading would involve mostly fill slopes, estimated to range up to 30 feet high

Additional design features and requirements related to the Alta Road Interchange under this alternative that differ from the Preferred Alternative are as follows:

- The R/W at the proposed Alta Road interchange would be wider than the R/W for the overcrossing at Alta Road under the Preferred Alternative. As depicted on Figures 2-3 and 2-16c, the additional R/W requirement at Alta Road would necessitate additional acquisition of private property, including portions of the vehicle auction yard at this location.
- The R/W at Enrico Fermi Drive would be narrower than for the Preferred Alternative, requiring less property acquisition at this location (refer to Figures 2-3, 2-16a and 2-16b). Acreages of property acquisition are discussed in Section 3.5, *Relocations and Real Property Acquisition*.
- Under the One Interchange Alternative, the “last chance exit” for eastbound drivers not intending to enter the POE would be at Alta Road.

SR-11/Siempre Viva Road Overcrossing

In contrast to the Preferred Alternative, SR-11 at Siempre Viva Road would be constructed as an overcrossing. Ramps would still be provided in this location to connect the POE and SR-11, but there would be no access between Siempre Viva Road and SR-11 under the One Interchange Alternative. Despite this difference, several design elements at the SR-11/Siempre Viva Road overcrossing would be similar to the design of SR-11/Siempre Viva Road Interchange under the Preferred Alternative, as described below (refer to Figures 2-14d and 2-16d).

- As described for the Preferred Alternative, the eastbound through lanes on SR-11 under this alternative would split approximately 2,300 feet (0.44 mile) west of the POE/CVEF site to provide two dedicated lanes each for passenger-only and commercial-only vehicles.
- Similar to the Preferred Alternative, access would be provided to/from toll administration facilities at the POE, as well as the potential future transit center site.
- Similar to the Preferred Alternative, a loop-style connector would be constructed under this alternative for northbound passenger-only traffic from the POE to access westbound SR-11. Northbound commercial traffic from the POE would access westbound SR-11 via a direct roadway link extending generally west and north from the CVEF site (as described for the Preferred Alternative).
- Unlike the Preferred Alternative design, no permanent direct access (i.e., on- and off-ramps) would be provided from eastbound SR-11 to Siempre Viva Road or from Siempre Viva Road to westbound SR-11. Until such time as local roadways in the area (including Siempre Viva Road) are built, interim access accommodations would be provided for vehicles dropping off or picking up pedestrians at the POE.

- Cut/fill slopes at Siempre Viva Road overcrossing would be similar to those described for the Siempre Viva Road Interchange.

The total limits of disturbance for the One Interchange Alternative would be 494.9 acres (24.3 acres more than the Preferred Alternative and 8.4 acres more than the Two Interchange Alternative). This includes 232.0 acres within existing transportation facility R/W west of Sanyo Avenue, and 123.6 acres of proposed new SR-11 R/W east of Sanyo Avenue, as well as 106.3 acres for the POE and 23.3 acres for the CVEF. In addition, easements totaling 0.7 acre are proposed to the north and south of the SR-11 R/W in the area east of Sanyo Avenue, and a 0.2-acre drainage easement is proposed adjacent to the project R/W on the west side of the Siempre Viva Road overcrossing. In the vicinity of the POE/CVEF, there would be 1.4 acres of natural gas pipeline easements and 7.4 acres of disturbance area within the adjacent strip of land under U.S. Border Patrol control.

No Interchange Alternative – Additional Major Features

Under the No Interchange Alternative, no interchanges would be constructed along proposed SR-11; all traffic accessing SR-11 from either SR-905 or SR-125 would have to proceed to the POE. An undercrossing structure would be provided at Sanyo Avenue, and overcrossings would be constructed at Enrico Fermi Drive, Alta Road, and at Siempre Viva Road (Figure 2-3 and Figures 2-17a through 2-17d, *No Interchange Alternative - Major Project Features Sheets*). The overcrossing at Alta Road would be similar to that described for the Preferred Alternative, while overcrossings at Enrico Fermi Drive and Siempre Viva Road would be similar to those described for the One Interchange Alternative. As in the case of the One Interchange Alternative, the No Interchange Alternative would have a slightly smaller footprint between Sanyo Avenue and Enrico Fermi Drive than would the Preferred and Two Interchange alternatives, due to the elimination of the Enrico Fermi Drive Interchange and its associated auxiliary lanes (refer to Figures 2-14a and 2-17a); the design of the Sanyo Avenue undercrossing would be similar to that described above for the One Interchange Alternative. In addition, SR-11 under this alternative would exhibit narrower construction and R/W limits at Enrico Fermi Drive and Alta Road than those described for the build alternatives with interchanges at these locations, with consequently lesser partial property acquisitions. The No Interchange Alternative has been evaluated because it would provide the greatest possible interchange spacing, consistent with FHWA standards, and would be the most cost-effective build alternative.

Overall, the limits of disturbance for the No Interchange Alternative would be 473.3 acres (2.7 acres more than the Preferred Alternative and 13.2 acres less than the Two Interchange Alternative). This includes 232.0 acres within the existing transportation facility R/W west of Sanyo Avenue, 102 acres of proposed new SR-11 R/W east of Sanyo Avenue, 106.3 acres for the POE and 23.3 acres for the CVEF. In addition, easements totaling 0.7 acre are proposed to the north and south of the SR-11 R/W in the area east of Sanyo Avenue, and a 0.2-acre drainage easement is proposed adjacent to the project R/W on the west side of the Siempre Viva Road overcrossing. In the vicinity of the POE/CVEF, there would be 1.4 acres of natural gas pipeline easements and 7.4 acres of disturbance area within the adjacent strip of land under U.S. Border Patrol control.

Variations on Any of the Draft EIR/EIS Build Alternatives

As noted in Section 2.1.1, a number of design or operational variations were evaluated in the Draft EIR/EIS that could apply to the Two Interchange Alternative, One Interchange Alternative or No Interchange Alternative (but not the Preferred Alternative), as outlined below.

No Toll Variation

The No Toll Variation could apply to any of the three Draft EIR/EIS build alternatives, and would involve the operation of SR-11 as a freeway instead of a toll highway. The principal design difference under this variation would be the lack of toll-related structures such as toll administration and FasTrak facilities.

Although state legislation has already approved SANDAG as the tolling agency for future SR-11, and a toll highway is reflected in the RTP, the No Toll Variation was included in the Draft EIR/EIS to facilitate the evaluation of toll-related impacts, particularly with respect to Environmental Justice populations, per Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations* (refer to Section 3.6 of this Final EIR/EIS for a discussion of Environmental Justice). The Preferred Alternative would include operation of SR-11 as a toll highway.

46-foot Median Variation

Under this variation, the SR-11 median would be 46 feet wide rather than 22 feet wide in the vicinity of Sanyo Avenue, as depicted in Figures 2-4 and 2-5. This variation could apply to any of the three Draft EIR/EIS build alternatives, resulting in a roadway width in the vicinity of Sanyo Avenue of approximately 140 feet for the Two Interchange Alternative and 120 feet for the One and No Interchange alternatives. Unlike the baseline 22-foot median design of the Draft EIR/EIS build alternatives, the 46-foot Median Variation would not require an advisory design exception for median width in this area, but it would require the additional acquisition of approximately 0.7 acre of the adjacent industrial parcels in the Sanyo Avenue area. The 46-foot Median Variation was included for evaluation in the Draft EIR/EIS because, according to FHWA standards, a 46-foot median is the narrowest standard median allowed without a design exception. The Preferred Alternative would incorporate a 22-foot median in the Sanyo Avenue area.

SR-905/SR-125/SR-11 Interchange Variations

Two variations were considered in the Draft EIR/EIS for the SR-905/SR-125/SR-11 Interchange, referred to as the SR-125 Connector Variation and the SR-905/SR-125/SR-11 Full Interchange Variation. These variations could apply to any of the three Draft EIR/EIS build alternatives. The SR-905/SR-125/SR-11 Interchange variations were included for evaluation in the Draft EIR/EIS because they would provide increased connectivity among the three highways served by this interchange.

SR-125 Connector Variation

Under the SR-125 Connector Variation of any of the Draft EIR/EIS build alternatives, the southbound SR-125 to eastbound SR-11 connector would be added to the interchange (refer to Figure 2-11). A local connector ramp from Enrico Fermi Drive to northbound SR-125 was approved under the SR-905 project; all of the proposed project build alternatives, including the Preferred Alternative, assume a similar direct connector from westbound SR-11 to northbound SR-125. The addition of the complementary southbound SR-125 to eastbound SR-11 connector under this variation would complete the direct link between the two highways for any of the Draft EIR/EIS build alternatives. The Preferred Alternative would include a modified version of this southbound SR-125 to eastbound SR-11 connector. The additional land required to construct this variation is located within existing Caltrans R/W.

SR-905/SR-125/SR-11 Full Interchange Variation

The SR-905/SR-125/SR-11 Full Interchange Variation of any of the Draft EIR/EIS build alternatives would provide full connectivity among the three roadways by providing the additional direct connectors listed below:

- Westbound SR-11 to eastbound SR-905
- Westbound SR-905 to eastbound SR-11

The addition of these connectors, together with the approved SR-905 and the connectors proposed in the SR-125 Connector Variation, would complete the SR-125/SR-905/SR-11 Interchange (refer to Figure 2-11). To construct this variation within existing Caltrans R/W, a retaining wall of approximately 15 to 26 feet in height and 150 feet in length would be required on the southeast quadrant of the interchange. Because it is anticipated that these additional connectors would support relatively few travelers, the Preferred Alternative would not include them,

Additional Features of SR-11

Landscape Treatments/Lighting

Landscaping would incorporate non-invasive, drought tolerant species, per Caltrans standard practices, which specify planting or seeding graded slopes with native species where feasible. The landscape palette and aesthetic treatment of structures (overcrossings, undercrossings, etc.) would be compatible with that developed for SR-905 and SR-125 (south portion). The project would include a variety of ground covers and plantings for permanent erosion control, such as native and drought tolerant species, as well as a variety of rock mulch. All areas adjacent to native plant communities would be planted with native species. All areas would be irrigated; areas planted with native species would be irrigated temporarily until the plants are established. All signage would conform with Caltrans/FHWA standards. Night lighting would be installed along SR-11, including enhanced safety lighting for under- and overpasses and pedestrian-scale lighting where appropriate, as needed for safety. Outdoor lighting would be less than 4,050 lumens and fully shielded, in conformance with Caltrans specifications. All fixtures would use low-sodium, amber bulbs to minimize light and glare and to ensure consistency with County lighting standards in the EOMSP area, as well as visual compatibility with surrounding local street lighting. Approximately six-foot high chain link fencing would be required along the SR-11 R/W for access control and security purposes.

Drainage/Water Quality Management Facilities

Drainage

Drainage facilities for the proposed SR-11 alignment would be designed to accommodate on-site drainage conditions and conform with applicable regulatory requirements, including the International Boundary and Water Commission (IBWC). Preliminary drainage facility design is based on Caltrans methodologies and the Highway Design Manual (HDM; Caltrans 2007a), and incorporate City and County of San Diego storm water management policies for the Otay Mesa area where feasible and reasonable. Drainage facilities are also designed in compliance with IBWC policies where applicable. For additional information, refer to Section 3.11, *Hydrology and Floodplain*.

Water Quality Management

Water quality facilities/measures for the SR-11 alignment would be designed to conform with applicable regulatory requirements, including federal Clean Water Act (CWA), and National Pollutant Discharge Elimination System (NPDES). For additional information, refer to Section 3.12, *Water Quality and Storm Water Runoff*.

Toll Facilities

It is anticipated that Electronic Toll Collection (ETC) technology would be used to collect tolls along on- and off-ramps at all proposed interchanges under all three of the baseline Draft EIR/EIS alternatives and the Preferred Alternative. Equipment could include overhead gantries and antennae to read transponders, variable message signs to display the tolls, loop or laser detectors to measure traffic volume and speed to help determine toll rates, and cameras to view traffic on the facility. Figure 2-18, *Typical Electronic Toll Collection Facilities*, depicts typical ETC equipment that would be used. In addition, a toll administration building and parking lot would be integrated into the Siempre Viva Road Interchange at the northwestern corner of the POE site. FHWA issued a grant to study border wait times and toll collection strategies for this project; once the study has been concluded, a final determination would be made regarding hardware types and locations of all toll facilities.

Utility Structures and Relocations

Utilities requirements for SR-11 would include water, electricity and communication services. These utilities services would be extended underground within existing or planned roadways, as well as the proposed SR-11 R/W, from existing service lines located to the west and south. Most project-related construction and demolition waste (including but not limited to soil, vegetation, concrete, lumber, metal and cardboard) would be reused and recycled, with the remainder to be hauled to an appropriate landfill facility in the region. For additional information, refer to Section 3.7, *Utilities/Emergency Services*.

As part of the Preferred Alternative, the need to relocate and redesign three electric power poles and the associated 69kV power line on the eastern side of the SR-905/SR125/SR-11 Interchange has been identified. The power line would be re-routed; placed on two new, taller steel poles to allow vertical clearance over the SR-11 and SR-125 connectors below; and relocated on new foundations in permanent utility easements outside of the highway R/W. The three existing power poles would be removed or abandoned in place. Refer to Figure 2-9 for the locations of these utility relocations.

Property Requirements

As previously noted, the project would require the acquisition of new R/W. Partial acquisition of property is considered for the entire project, including SR-11, the POE and CVEF; and is therefore presented jointly in this section and not repeated in the separate discussions of the POE and CVEF. The proposed new R/W associated with the project would range from a minimum of 231.6 acres for the No Interchange Alternative to 265.7 acres for the Two Interchange Alternative with the 46-foot Median Variation and the Siempre Viva Road Full Interchange Variation. Total new R/W acquisition associated with the Preferred Alternative would be 236.6 acres. Detailed information on these property requirements is provided in Section 3.1, *Existing and Future Land Use* and Section 3.5, *Relocations and Real Property Acquisitions*.

Project Grading, Excavation and Construction

Grading and Excavation

Under the Preferred Alternative, grading for proposed SR-11 would entail approximately 1,070,000 cubic yards (cy) of cut and 720,000 cy of fill for the highway main line plus interchanges and under/overcrossings; an additional 1,575,000 cy of fill would be needed for the Preferred Alternative connectors between SR-11, SR-905 and SR-125, including the southbound SR-125 to eastbound SR-11 flyover. Under the Two Interchange Alternative with the half interchange design at Siempre Viva Road, grading for proposed SR-11 would consist of approximately 1,230,000 cy of cut and 720,000 cy of fill for the highway main line plus interchanges and under/overcrossings. Implementation of the Siempre Viva Road Full Interchange Variation of the Two Interchange Alternative would require an additional 226,500 cy of cut and 98,600 cy of fill. Under the One Interchange Alternative, grading for proposed SR-11 would require approximately 1,080,000 cy of cut and 690,000 cy of fill for the highway main line plus interchanges and under/overcrossings. Under the No Interchange Alternative, approximately 1,040,000 cy of cut and 590,000 cy of fill for the highway main line plus under/overcrossings would be required. An additional 900,000 cy of fill would be required for the connectors between SR-11 and SR-905 under any of the project alternatives. Approximate additional fill requirements of the remaining project design variations would be 65,000 cy for the 46-foot Median Variation, 582,000 cy for the SR-125 Connector Variation and 1,068,000 cy for the SR-905/SR-125/SR-11 Full Interchange Variation. These additional fill requirements would apply to any of the Draft EIR/EIS build alternatives implementing these variations, but would not apply to the Preferred Alternative.

The project has been designed to include the standard 2:1 (slope ratio, horizontal: vertical) cut slopes and 4:1 fill slopes, per Caltrans standard practices. In some areas, 2:1 fill slopes have been integrated into the project to reduce impacts, and design exceptions have been proposed in these cases. For SR-11, cut slopes are tentatively planned in the area stretching from approximately 500 feet east of the Sanyo Avenue industrial park to the vicinity of Alta Road, and at either end of the Siempre Viva Road Interchange/Overcrossing. Such slopes are not expected to exceed approximately 40 feet in height. Fill slopes of up to 50 feet in height are tentatively planned at the western end of SR-11 in association with an up to 26-foot high retaining wall through the industrial park at Sanyo Avenue, and fill slopes of up to 20 feet in height are planned in the vicinity of the auto auction yard and the proposed Siempre Viva Road Interchange. Within the Siempre Viva Road Interchange, fill slopes supporting the passenger vehicle lanes and loop ramp would be graded at 2:1. Highway elevations would be between approximately 530 and 610 feet above mean sea level (MSL), and would generally exhibit a slight overall downhill grade to the south. Proposed grading limits would be up to approximately 400 feet wide along the non-interchange portions of the SR-11 alignment, and up to 1,400 feet wide in the proposed interchange areas. These limits would include all project-related facilities such as manufactured slopes, retaining walls, utility structures/connections, drainage facilities, lighting, fencing, landscaping and construction staging. Limits of grading would not extend beyond the limits of the proposed SR-11 R/W and adjacent off-site easements, which are described for each alternative above.

Construction Schedules, Equipment and Staging

Construction of SR-11 is expected to begin in 2013 and last approximately two years. Construction is assumed to occur in one phase, with SR-11 and the POE/CVEF being constructed simultaneously, although multiple phases may be required based on funding constraints. The connector lanes between SR-11 and SR-905 and associated improvements to SR-905 could be constructed simultaneously with the completion of this portion of SR-905, depending on the timing of project approval and funding for this portion of the project. All construction activities/staging would take place within existing and proposed limits of disturbance and/or R/W for SR-11, the POE/CVEF, SR-905 and the SR-905/SR-125/SR-11

Interchange, or within adjacent developed areas such as existing parking lots. Portions of this interchange that were approved as part of the SR-905 and SR-125 projects may be constructed simultaneously with the elements proposed for SR-11. The project could be phased such that at-grade intersections would be in place at each of the proposed local roadway interchange locations until the level of service warrants construction of interchanges, which is estimated to occur by approximately 2025.

A Preliminary Traffic Management Plan (TMP) Report was prepared for the project to minimize motorist delays on existing roads during construction (AECOM/Caltrans 2011). Specific objectives of the TMP include reducing traffic delay or time spent queuing to less than 15 minutes above normal recurring traffic delay; maintaining traffic flow throughout the corridor and the surrounding areas; and providing a safe environment for the workforce and motoring public. To achieve these objectives, the TMP recommends the following measures:

- A Public Awareness Campaign to educate the public about potential construction plans and scheduling
- Motorist Information Strategies, such as signs in English and Spanish and information on the Caltrans Highway Information Network (CHIN), a 24-hour information hotline and website, to divert traffic volume from the construction site
- Incident Management, including a Construction Zone Enhanced Enforcement Program (COZEPP) that would station CHP Officers and Traffic Management Team units at construction sites to facilitate safer construction and traffic conditions and respond quickly to incidents
- Construction Strategies of selectively closing freeway main lanes, ramps, and connectors without creating substantial delays to motorists and providing temporary lane shifts to facilitate construction of freeway-to-freeway connectors
- Contingency Plans for instances in which the timely opening of lanes is deemed unachievable
- Alternate Route Strategies that would temporarily divert traffic, mainly utilizing Sanyo Avenue, to allow construction activities while maintaining reasonable access to businesses

Traffic detours and temporary blockages of driveways could occur during construction of under- and overcrossings of existing roadways, such as Sanyo Avenue. The project construction contractor would be required to maintain at least one access to all existing businesses during project construction, and keep adjacent businesses informed of periods of interruption of any usual access route/driveway. In addition, if SR-905 is operational at the time that the proposed connectors with SR-11 and associated auxiliary and travel lanes are constructed within SR-905, the TMP will require modification to address temporary lane closures and traffic diversion around the areas of construction within SR-905.

The current TMP (AECOM/Caltrans 2011) proposes that the main detour throughout the two-to-three year construction duration would utilize Sanyo Avenue. Several minor detours would exist for several nights when falsework is constructed above Sanyo Avenue, SR-905, and the SR-905 off-ramp to La Media Road. Reasonable access to businesses along the main and minor detours should be maintained throughout the duration of construction. It is expected that the main detour would be operational throughout the duration of construction and no modifications would be necessary to any streets.

2.2.2 Otay Mesa East Port of Entry

Major POE Features

The proposed Otay Mesa East POE would accommodate northbound and southbound commercial and passenger traffic, as well as buses, pedestrians and bicycles. The POE site would be accessed from the north by SR-11, via the previously described system of vehicle lanes and ramps. From the south, entry would be through the proposed Otay II POE on the Mexican side of the border (refer to Figure 2-19,

Updated Conceptual Layout of Mexican Otay II POE). Southbound traffic leaving the proposed Otay II POE in Mexico would then enter the non-tolled segment of the Tijuana-Tecate Toll Road. This traffic would also have access to the Tijuana-Rosarito corridor prior to reaching the first toll booth, thus providing binational regional mobility through the new POE (IMPlan 2005; refer to Figure 1-3).

For purposes of the Draft EIR/EIS analysis, a conceptual development plan for the Proposed Otay Mesa East POE was prepared by Caltrans in cooperation with GSA, based on a related GSA feasibility study (GSA 2008) and a number of design assumptions that were current at the time (as outlined below). GSA has prepared a Program Development Study (PDS; GSA 2011) to provide more advanced conceptual design information for the proposed Otay Mesa East POE. The Draft EIR/EIS assumptions represented an early conceptual design of the POE, which has been revised for the Final EIR/EIS, based on the results of the PDS. Under GSA's planning process, the POE design in the PDS is still conceptual and additional modifications are anticipated. In addition, it is anticipated that a reduced level of POE facilities would be available on Opening Day of the project, with additional facilities development in stages until achievement of the full build-out plan.

Figure 2-20, *Comparison of POE/CVEF Footprints*, compares the POE/CVEF boundary in the Phase I PEIR/PEIS with the boundaries shown in the Tier II Draft EIR/EIS and the Preferred Alternative in this Final EIR/EIS. As previously noted, the shape of the POE was modified at the Tier II Draft EIR/EIS stage to accommodate grading requirements to achieve a usable 100-acre POE pad, and to address a request by the Mexican government to create a greater frontage or overlap with the proposed Mexican Otay II POE site, while still minimizing impacts to coastal sage scrub, wetlands/WUS, and sensitive plants. Consideration of agency and public input received during the Tier II Draft EIR/EIS public review process then resulted in additional adjustments; the POE area has been reduced by adjusting the eastern POE boundary westward as part of the Preferred Alternative analyzed in this Final EIR/EIS, to further reduce impacts to listed species. The internal layout of the POE has also been updated in this Final EIR/EIS, to reflect the most current conceptual POE design in the PDS (GSA 2011).

As shown on Figure 2-21, *Preferred Alternative Conceptual Layout of the Otay Mesa East POE and CVEF*, and Figure 2-22, *Draft EIR/EIS Conceptual Otay Mesa East POE and CVEF Layout*, the proposed Tier II POE site is an irregularly-shaped polygon located 150 feet north of the international border across from the associated Otay II POE site in Mexico. SR-11 would connect with and end at the Otay Mesa East POE site; southbound travelers would then continue south across the 150-foot-wide strip of federal land patrolled by the U.S. Border Patrol, to the international border where they would enter the Otay II POE. This connection across the U.S. Border Patrol enforcement area is addressed together with the POE, for the purposes of impact analyses within this EIR/EIS. The proposed limits of disturbance associated with the POE R/W include 101.1 acres (Preferred Alternative) (106.3 acres under the Draft EIR/EIS build alternatives) ; approximately 6.0 acres (Preferred Alternative) of disturbance area within the strip of land under U.S. Border Patrol control (7.4 acres under the Draft EIR/EIS build alternatives); and 0.8 acre of proposed permanent easement and 0.6 acre of proposed temporary construction easement for the relocation of a natural gas pipeline from within the POE site to instead be adjacent to the eastern boundary of the POE site. These features are depicted on Figures 2-21 and 2-22, and additional details are provided below.

Once the proposed Otay Mesa East POE is fully developed, virtually the entire R/W would consist of a graded development pad, with only small areas of graded slopes or other undeveloped areas. GSA and CBP jointly determined that approximately 100 acres was the minimum-sized site required to meet the current and projected long-term growth requirements for a new POE in the region. It was determined that a scalable POE model of this size would prevent future constraints of the kind encountered at the nearby smaller San Ysidro and Otay Mesa POE sites (GSA 2009c). The developed portion of the POE would accommodate all of the federal agency and security functions currently anticipated to be necessary for the long-term effective

operation of an international POE, including the requirements of the following proposed POE tenant agencies: GSA, CBP, the U.S. Food and Drug Administration (FDA), the U.S. Department of Agriculture (USDA), the U.S. Fish and Wildlife Service (USFWS), and the U.S. Immigration and Customs Enforcement – Investigations Office (ICE-IO). Due to concerns regarding potential acts of terrorism, the POE would be designed to conform with the following directives: (1) The October 19, 1995 EO 12977 and addenda, which address the quality and effectiveness of security and protection measures for non-military federal facilities; (2) the Land Port of Entry (LPOE) Design Standard (CBP et al. 2010) and the Security and Information Technology Supplemental Guide (CBP et al. 2009), both developed by CBP, GSA and the Interagency Security Committee (ISC); and (3) the Department of Defense (DoD) Unified Facilities Criteria (UFC) Manual (UFC 4-010-01), entitled *DoD Minimum Antiterrorism Standards for Buildings* (DoD 2003). Sufficient space has been provided within the proposed POE site to accommodate future southbound inspections, and conceptual facilities are identified (as outlined below), although the design of such facilities cannot be developed until specific requirements are known. Detailed design for all POE facilities is underway as part of the PDS, pursuant to GSA and CBP protocol.

Design and operational assumptions for the proposed POE have been made for analysis purposes, based on current staffing at existing POEs in the region and proposed design/operations at the Otay Mesa East POE. The proposed POE is assumed to employ approximately 555 people. At full buildout, hours of operation for processing passenger vehicles are anticipated to be 24 hours per day and seven days per week, while hours of operation for processing commercial vehicles are anticipated to be 6 A.M. to 8 P.M. on weekdays and 8 A.M. to 4 P.M. on weekends. Initially, hours of operation and associated staffing levels for processing passenger vehicles may be limited to the commercial vehicle operations schedule.

A study by the U.S. Environmental Protection Agency (EPA; 2009a) indicates that the potential exists to incorporate anti-idling and truck stop electrification (AI/TSE) approaches at U.S. – Mexico POEs. AI/TSE strategies encourage (or require) drivers to turn off their engines rather than idling while stationary or at very slow speeds. AI strategies identified in the study include the use of traffic controls on existing roadways to process truck crossings in “batches,” encouraging or requiring drivers to turn off their engines until their “batch” is allowed to advance; or the use of mandatory or voluntary parking areas where vehicles would turn off their engines until called under an appointment system. TSE technologies provide alternative connections for electricity and communications, so that vehicles can maintain truck refrigeration, air conditioning and other electrically-powered activities without running their own engines. In the case of the proposed project, most congestion and long wait times at the existing San Ysidro and Otay Mesa POEs currently occur on the Mexican side of the border and affect northbound traffic. As such, implementation of AI/TSE strategies would most appropriately be implemented by the Mexican POE authorities at their discretion. This would be outside the jurisdiction of this project. In addition, the Otay Mesa East POE would be a managed facility designed to maintain a 30-minute or less wait time and, therefore, may not represent a model opportunity for AI/TSE. Nonetheless, Caltrans and the regional and binational stakeholders will continue to evaluate its potential use at the proposed project and at other existing POEs, especially if future increased southbound inspections result in a greater need for such technology.

Following implementation of the proposed project, it is anticipated that the existing Otay Mesa POE would remain open to all commercial, passenger, bus, bicycle and pedestrian traffic, while the existing POE at San Ysidro would continue to accommodate only passenger, bus, bicycle and pedestrian traffic. The GSA feasibility study conducted as part of the Otay Mesa East POE Phase I analysis (GSA 2008) concluded that this would be the most efficient operational arrangement to accommodate projected traffic in the San Diego-Tijuana region. Based on the PDS (GSA 2011), the assumed POE facilities for Preferred Alternative of this Final EIR/EIS are summarized below and listed in Tables 2-1 and 2-2 and shown on Figure 2-21. The design of the POE is subject to further refinement.

**Table 2-1
SUMMARY OF OTAY MESA EAST POE CONCEPTUAL PLAN MAJOR
FACILITIES AT FULL BUILDOUT¹**

Description	Number of Facilities
Northbound (Inbound/Import) Commercial Facilities	
Commercial Primary Booth Non-Empty/FAST	16
Commercial Unladen Primary Gantry	1
Commercial Vehicle Dock Bays	86
Commercial Vehicle Screened Dock Bays	10
Enclosed Commercial Vehicle Dock	1
NII Operations Building	1
Fixed/Permanent NII Operations	3
Southbound (Outbound/Export) Commercial Facilities	
Truck Inspection-Primary Inspection Booth	5
Truck Dock or Bay Unloading Area	10
Truck Tailgate Inspection - Spaces	30
Northbound (Inbound) Passenger Facilities	
Passenger Vehicle Primary Inspection Lanes and Booths	20
Passenger Vehicle Inspection High/Low Bus Booth	1
Secondary Passenger Vehicle Super Booth	2
Passenger Vehicle Secondary Inspection Spaces	32
Passenger Vehicle Screened Secondary Inspection Bay	3
Processing-Pedestrian Inspection Booths	4
Secondary Baggage Inspection	2
Southbound (Outbound) Passenger Facilities	
Passenger Vehicle Primary Inspection Lanes and Booths	5
Passenger Vehicle Secondary Inspection Bays	4
Passenger Vehicle Screened Secondary Inspection Bay	1

¹ Assumed POE design elements are based on the conceptual design shown in Figure 2-21 and the Otay Mesa East POE PDS (GSA 2011). This design is subject to further refinement.
Source: GSA 2011

Table 2-2 SUMMARY OF OTAY MESA EAST POE CONCEPTUAL PLAN – GROSS SQUARE FOOTAGE OF MAJOR FACILITIES AT FULL BUILDOUT¹	
Description	Approximate Gross Square Footage (GSF)²
Passenger Inspection	
Passenger Vehicle Main Building	51,047
Passenger Vehicle Inspection	50,831
Passenger Vehicle Headhouse	14,872
Passenger Vehicle Southbound Inspection	13,936
Commercial Inspection	
Commercial Vehicle Inspection	157,061
Commercial Vehicle Building	56,895
Commercial Vehicle Inspection Lot	31,825
Commercial Vehicle Southbound Inspection	23,135
Entire Facility	
Total GSF (excluding non-building spaces)	399,602

¹ Assumed POE design elements are based on the conceptual design shown in Figure 2-21 and the Otay Mesa East POE PDS (GSA 2011). This design is subject to further refinement.

² Gross square footage rounded to the nearest 500 feet. Refer to Figure 2-21 for facility locations.
Source: GSA 2011

Commercial Facilities

Northbound Commercial Vehicle Traffic

Commercial Import Primary Inspection Lanes/Booths/Canopies. After crossing the border, northbound commercial traffic would be initially directed into one of an estimated 16 primary inspection lanes. Commercial vehicles cleared to enter the U.S. after primary inspection would be directed to the proposed CVEF site for safety inspection before being allowed to access westbound SR-11 or Siempre Viva Road (additional description of the CVEF site/process is provided below in this chapter). Commercial vehicles requiring additional (secondary) inspection would be directed to the Vehicle and Cargo Inspection System (VACIS) or commercial Non-Intrusive Inspection (NII) imaging systems, as outlined below. The northbound commercial primary inspection facilities would include outdoor lighting to support nighttime operations.

Commercial Secondary Inspection. After completing primary inspection, some northbound commercial vehicles would be directed to the VACIS/NII area for additional inspection, as necessary. The VACIS/NII lanes would encompass a non-intrusive, drive-through gamma ray scanning and imaging system used to provide short-duration inspections for up to 150 trucks per hour. After VACIS/NII inspection, northbound commercial vehicles would either be directed to the CVEF site, or routed to the commercial import inspection building/docks for additional inspection as outlined below. The northbound commercial VACIS/NII facilities would include outdoor lighting to support nighttime operations.

Commercial Import Inspection Building/Docks. These facilities would be used to conduct manual inspections for selected northbound commercial vehicles, as necessary. This site would include 96 inspection docks/bays and one enclosed dock, as well as a building to provide inspection, enforcement and administrative support services, and other support facilities. Ancillary features associated with these facilities would include rooftop Heating, Ventilating and Air Conditioning (HVAC) units and an outdoor

backup generator for the inspection building, as well as outdoor lighting to support nighttime operations at the inspection docks.

Southbound Commercial Traffic

Conceptual facilities have also been identified for southbound inspections, as outlined below.

Commercial Export Primary Inspection Lanes/Booths/Canopies. After entering the POE site, southbound commercial traffic would be directed into one of five primary inspection lanes. The southbound commercial primary inspection facilities would include outdoor lighting to support nighttime operations.

Commercial Export Inspection Building/Bays. These facilities would be used to conduct manual inspections of selected southbound commercial vehicles, and would include an estimated 40 inspection bays and a building to provide inspection, enforcement and administrative support services. Ancillary features associated with the described facilities would include rooftop HVAC units for the inspection building, and outdoor lighting to support nighttime operations at the inspection docks.

Commercial Export Exit Lanes/Booths/Canopies. Prior to crossing the border into Mexico, southbound commercial vehicles would pass through one of the five assumed exit lanes for final clearance and processing. Outdoor lighting would be provided to support nighttime operations.

Passenger Facilities

Northbound Passenger Traffic

Passenger Inbound Primary Inspection Lanes/Booths/Canopies. After entering the POE site from Mexico, northbound passenger vehicles would be routed through one of approximately 20 primary inspection lanes. There would also be one bypass lane. Additional related facilities for bus traffic would include one dedicated bus lane, two bus off-load spaces, a bus plaza canopy, and one bus inspection space. Outdoor lighting would be provided to support nighttime operations.

Vehicles cleared to enter the U.S. from the primary inspection area would be directed to northbound lanes that would merge onto proposed westbound SR-11.

Passenger Inbound Primary Head House. This structure would be located immediately north of the primary inspection facilities, and would encompass approximately 15,000 sf for facilities/uses such as administrative and office space, a public information area, search rooms and holding cells. Ancillary features associated with the passenger primary head house would include rooftop HVAC units, outdoor backup generators, and outdoor lighting to support nighttime operations.

Passenger Inbound Secondary Inspection Spaces/Canopy. The secondary inspection area would include an estimated 35 inspection spaces with canopies. Ancillary features associated with the passenger primary secondary inspection facilities would include backup generators and outdoor lighting to support nighttime operations.

Southbound Passenger Traffic

Conceptual facilities have also been identified for southbound inspections, with associated passenger inspection features outlined below.

Passenger Southbound Primary Inspection Lanes/Booths/Canopies. After entering the POE from eastbound SR-11, passenger traffic would be routed through one of five primary inspection lanes. Vehicles cleared to enter Mexico from the primary inspection area would be directed to the southbound lanes that would cross the international border and enter the proposed Otay II POE in Mexico. Outdoor lighting would be provided to support nighttime operations.

Passenger Southbound Inspection Building. An approximately 2,000-sf southbound passenger inspection building would provide administrative and support facilities for southbound inspections. Ancillary features associated with the southbound passenger inspection building would include rooftop HVAC units, outdoor backup generators, and outdoor lighting to support nighttime operations.

Other Non-commercial Facilities

Non-Commercial Main Building. The main building would provide administrative and support facilities for southbound passenger, pedestrian and bicycle traffic. Ancillary features associated with the main building would include rooftop HVAC units, outdoor backup generators, and outdoor lighting to support nighttime operations.

Pedestrian and Bicycle Facilities. Pedestrian walkways and bike paths would be located in the western part of the POE site, and would allow for access to pedestrian pick-up/drop-off areas and the potential future transit center that may be constructed on site by others. Shaded areas, seating and water would be provided for travelers.

Parking Lots. Parking lots would be provided for visitors, staff, and impound activities. Ancillary features associated with the parking lots would include outdoor lighting to support nighttime operations.

Additional POE Features

The POE design would follow the 2010 LPOE Design Standard (CBP et al. 2010) and the *Federal Leadership In High Performance and Sustainable Buildings Memorandum Of Understanding*, incorporating its *Guiding Principles for New Construction and Major Renovations*, as required for new construction, major renovation, or repair or alteration of federal buildings. To comply, the POE is required to use integrated design, optimize energy performance, protect and conserve water, enhance indoor environmental quality, and reduce the environmental impact of materials. In addition, the design is intended to achieve Leadership in Energy and Environmental Design (LEED) Gold certification and to comply with federal mandates for sustainability and energy conservation.

Architectural Treatments for Structures

Although final designs are not yet available for the POE, for the purposes of impact analysis within this Final EIR/EIS it is assumed that the project architecture would be similar to that of the existing Otay Mesa POE. It is assumed that building exteriors would be treated with stucco, with metal-framed windows and doors with contrasting trim. Building colors are likely to be earth tones. It is assumed that most buildings would be one story (less than 20 feet) in height, with the CVEF building potentially being implemented as two-story buildings up to 34 feet high. Potential pedestrian overcrossings and overhead canopies would be constructed with a minimum vehicular clearance of 17 feet, with structural supports, railings, roofs, etc., extending higher, potentially up to 25 feet.

Fencing/Walls/Signage/Lighting

The entire site is assumed to be surrounded by perimeter fencing consisting of chain link topped with barbed wire, as is currently the case at the existing Otay Mesa POE. The perimeter fences are assumed to

be a minimum of 10 feet tall, with smooth or textured plastic slats to screen views. Pedestrian border crossing areas may also include black, wrought iron picket fencing and railings. Chain link fences would be used internally within pedestrian and vehicular areas to separate and/or screen sensitive inspection areas. Other types of fencing may be used, as appropriate. Concrete barriers, orange traffic cones, or other traffic control devices may also be used to control vehicular traffic flow through the site and to increase the flexibility of the inspection areas.

It is assumed that the entire site would be lit during nighttime hours by minimum-30-foot-tall light posts supporting four to eight halogen floodlights each. Floodlights located in the facility canopies would provide additional lighting for inspection lanes, booths, docks, and other facilities. The lighting would be spaced appropriately so that exterior lighting zones would not overlap, where applicable. The non-commercial area would be separated with the commercial area so lighting could be turned off after hours (low level lighting could still operate for security). Daylighting and daylight sensors would be used in glazed areas. Outdoor lighting would be less than 4,050 lumens and fully shielded, in conformance with Caltrans specifications. All fixtures would use low-sodium, amber bulbs to minimize light and glare and to ensure consistency with County standards in the EOMSP area, as well as visual compatibility with surrounding local street lighting.

Directional and instructional signs within the facilities are expected to incorporate blue English words on white backgrounds and white Spanish words on blue backgrounds. Areas approaching SR-11 would include standard white-on-green highway guide signs (as well as white regulatory and yellow warning signs as needed). Decorative entry signs, fence treatments and monuments may also be incorporated. Smaller facilities such as trash cans, drinking fountains, metal flag poles, metal light poles and sign posts, concrete bollards, ramps and metal railings may also be placed throughout the site.

Landscaping/Aesthetic Treatments

It is expected that the vehicular inspection areas would support little landscaping. Landscaping planters would be placed in pedestrian and parking areas, and bands of rock mulch would add texture and tie the POE landscape to the surrounding landscape. Plant palettes would include non-invasive, drought-tolerant ground covers, shrubs, and shade trees, including native species where feasible. Within the POE, plants would be selected to maintain sight-lines over shrubs and under tree canopies (for officer safety and site control), and to minimize potential hiding places. Where appropriate, trees would provide screening. All landscaping would be irrigated with permanent, efficient, centrally controlled systems; areas planted with native species would be irrigated temporarily until the plants are established.

Overhead structures and canopies would span entry lanes and cover inspection docks. These would be a minimum of 17 feet high to accommodate bus clearance. Canopies generally would be constructed of open metal-work lattices supported by concrete columns and roofed with corrugated metal. Utility conduits and downlights would be concealed within the latticework.

Individual inspection booths at existing nearby facilities are blue, and the low-intensity radiation scanners are yellow. A comprehensive aesthetics treatment plan would be developed in conjunction with further facility designs and may include common color treatments for booths, canopies, barriers, fences, rails, poles, trash cans, etc. to match the proposed buildings, as well as an entry monument or sign at the northern edge of the POE where drivers would access SR-11.

Drainage/Water Quality Facilities

Drainage and water quality facilities for the proposed POE site are shown on Figure 2-21 and would be designed to accommodate specific site conditions, as well as to conform with IBWC, CWA, and NPDES

requirements. Refer to Sections 3.11 and 3.12 for additional discussion of drainage and water quality requirements and potential design features.

Utility Structures and Relocations

Anticipated utility needs for the proposed POE include water, sewer, electricity, natural gas, solid waste disposal, and communication services. It is expected that all utilities would be extended from existing developed areas to the north and west, within existing and planned roadways/easements, to serve the POE. The POE is expected to incorporate a number of “green” features such as low water use landscape and plumbing, incorporation of interior and exterior storage areas for recyclables and green waste, and provision of recycling containers within public areas. Most construction waste (including but not limited to soil, vegetation, concrete, lumber, metal and cardboard) would be reused and recycled. Details regarding “green” design/practices for the POE are being developed as part of the ongoing PDS (GSA 2011).

Caltrans and GSA are currently coordinating with local utility owners/providers to assess service capabilities and project requirements, as well as to identify and coordinate issues regarding the relocation of existing underground facilities during construction. Currently identified required utility relocations include portions of a 24-inch high-pressure natural gas line in the northeastern portion of the POE site (and the adjacent CVEF) to the east, and the anticipated relocation of a 30-inch high-pressure natural gas pipeline located near (and parallel to) the southern POE boundary. It is anticipated that this relocation will be within the identified limits of disturbance for the POE/CVEF. Figure 2-21 shows the worst case relocation of the 30-inch pipeline around the POE perimeter, although it is possible a more direct alignment through the POE site may be identified in the future that is acceptable to GSA, CBP and the responsible utility company. The 30-inch pipeline would be surrounded by a 20-foot permanent easement with 15-foot temporary construction easements on either side. As shown on Figure 2-21, the 24-inch natural gas line is currently planned to be relocated within a 20-foot wide permanent easement dedicated to the utility owner, Calpine Corporation. An additional 15-foot wide temporary construction easement would be required on either side of the permanent easement. On the western side, the temporary construction easement would overlap the temporary easement designated for the 30-inch pipeline described above. Specific relocation plans for all utilities within the POE site will be coordinated with the responsible utility companies. Additional information on existing and proposed utilities in the POE site and vicinity are provided in Section 3.7, *Utilities/Emergency Services*.

Project Grading, Excavation and Construction

The proposed POE site would be graded to provide generally level areas suitable for the construction of proposed facilities. Conceptual grading is shown on Figure 2-21, and is subject to revision during the final design phase of the project. Grading for the POE is tentatively estimated to result in approximately 186,000 cy of cut and 2,849,000 cy of fill. Grading for the CVEF is tentatively estimated to result in approximately 287,000 cy of cut and 85,000 cy of fill. Together, the POE and CVEF would be expected to require a net of approximately 2,460,000 cy of imported fill. Finished elevations are estimated to be between 490 and 550 feet above MSL, sloping gently downward to the south. The tallest cut slopes would be located on the east side of the POE, while the tallest fill slopes would be located on the southwest side of the POE. A retaining wall is currently anticipated to be necessary on the western side of the POE, adjacent to the watershed for an existing vernal pool. The POE site grading would result in two large, level plateaus, on which the majority of development would take place, one at approximately 515 above MSL, and the other at approximately 540 feet above MSL.

As described above, it is assumed that grading and construction would proceed simultaneously for the POE, CVEF and SR-11, and that these facilities would be constructed in one phase, extending from approximately 2013 to 2015. All proposed construction staging, parking and storage would be

accommodated within the proposed limits of disturbance for the three facilities. The proposed POE construction limits would also accommodate all associated manufactured slopes, utility structures/connections, drainage facilities, lighting, fencing, landscaping and construction staging, with the exception of the relocated 24-inch high-pressure natural gas line, which would be placed in an easement adjacent to the northeastern corner of the POE/CVEF outer boundary (refer to Figure 2-21). The construction area may be fenced and lighted at night. A TMP, such as that described above for SR-11, would also be employed during construction of the POE.

Transit Center Site

The proposed overall POE footprint would include space to accommodate a potential future transit center adjacent to the POE. As previously noted, however, the potential transit facility is not part of the proposed project and would be designed and constructed by others. The intent of reserving space for a potential future transit center is to ensure that opportunities to implement transit service to the POE, such as BRT, would not be precluded by future development in the project site vicinity. It is expected that a future transit center would encompass a minimum two-acre rectangular site in the vicinity of the southwestern corner of the POE; however sufficient space is available to accommodate up to a five-acre transit center site if necessary.

2.2.3 Commercial Vehicle Enforcement Facility

During the Tier II scoping process, an analysis of CVEF alternatives was undertaken, which determined that construction and operation of a new CVEF adjacent to the proposed Otay Mesa East POE would have considerable security, operational and environmental advantages over providing access from the new POE to the existing CVEF (AECOM/Caltrans 2009). The proposed site for the new CVEF would include approximately 17.9 acres and would be located east of SR-11 along the northern POE boundary (refer to Figures 2-21 and 2-22). After receiving clearance to enter the U.S. at the POE site, northbound commercial vehicles would be routed into the CVEF facility for safety/weight inspections by the CHP prior to being released onto the regional roadway system. The CHP has not completed a preliminary design for the CVEF, but a conceptual design has been prepared assuming the new CVEF would be similar to the existing CVEF at the Otay Mesa POE. The resulting anticipated CVEF facilities are listed below and shown on Figure 2-21.

- An approximately 7,900-sf administration building, with associated CHP, staff, visitor and short-term commercial vehicle parking
- Two commercial vehicle scales with associated access lanes
- Four commercial vehicle inspection bays with associated inspection lanes
- Long-term and load adjustment commercial vehicle parking
- An approximately 850-sf area available for smog inspection by state or federal agencies
- A secondary access road extending from the northwestern portion of the site to Siempre Viva Road. This road would be used as a commercial-only vehicle exit from the CVEF to Siempre Viva Road, and for staff, emergency and/or other authorized vehicle access in both directions, with related movements to and from Siempre Viva Road limited to right-turn out and right-turn in, respectively
- A six-foot-high perimeter chain link fence with security gates at applicable locations along the site access roads
- A storm water detention basin that would discharge to one of the previously described culverts extending northeast-southwest through the POE and CVEF sites
- Landscaped areas, including several receiving runoff from paved/developed areas and/or discharging into the on-site detention basin

- Manufactured (cut and fill) slopes along the northern and eastern site perimeters, and a six-foot-high fence along the R/W boundary

Commercial vehicles would enter the CVEF via a security gate at the southeastern portion of the site, and would proceed to one of the two scale lanes. After being weighed, vehicles would either be cleared by CHP personnel to exit west to the westbound SR-11 access lanes, or they would be routed to one of the four vehicle inspection bays for additional safety inspection. After completing the vehicle inspection, commercial vehicles would either be cleared to exit (and routed to westbound SR-11 or to the Siempre Viva Road exit) or directed to park their vehicles for subsequent repairs.

Per California Executive Order S-20-04, the CVEF would be designed with the goal of achieving LEED Silver certification. Approximately 52 government employees are expected to work at the CVEF, with up to 20 of them on site at any given time. Hours of operation for the CVEF are expected to be compatible with the assumed POE schedule for processing commercial vehicles (i.e., 6 A.M. to 8 P.M. on weekdays, and 8 A.M. to 4 P.M. on weekends). Following project implementation, it is expected that the existing Otay Mesa CVEF would remain open to serve commercial traffic crossing the border at the Otay Mesa POE. A number of potential options for proposed CVEF location, design and operation were assessed as part of the Tier II process, but the location depicted on Figure 2-21 was determined to be the most efficient and practical (refer to Section 2.3.5 for further discussion of this determination).

Architecture/Fencing/Walls//Signage/Lighting

The exterior treatment of the administration building and inspection bays is expected to be similar to that described for the proposed POE. Similar to the existing Otay Mesa CVEF, it is assumed that a six-foot-high chain link fence would be constructed around the CVEF perimeter. It is assumed that smooth or textured plastic slats would be inserted into the chain link for additional visual screening. Chain link fences also are assumed to be used internally to separate and/or screen sensitive inspection areas. Concrete jersey barriers, orange traffic cones, or other traffic control devices may also be used to control vehicular traffic flow through the site and to increase the flexibility of the inspection areas.

The entire site is assumed to be lit during nighttime hours by minimum-30-foot-tall light posts supporting four to eight halogen floodlights each. Floodlights located in the facility canopies would be expected to provide additional lighting for inspection lanes, booths, docks, and other facilities. Outdoor lighting would be less than 4,050 lumens and fully shielded, in conformance with Caltrans specifications. All fixtures would use low-sodium, amber bulbs to minimize light and glare and to ensure consistency with County standards in the EOMSP area, as well as visual compatibility with surrounding local street lighting.

Directional and instructional signs within the facilities are expected to include blue English words on white backgrounds and white Spanish words on blue backgrounds. Areas approaching SR-11 would likely include standard white-on-green highway guide signs (as well as white regulatory and yellow warning signs as needed).

Landscaping/Aesthetic Treatments

Landscaping is assumed to be similar to that of the existing Otay Mesa CVEF, primarily installed around the main building and parking areas. Vehicular inspection areas would support little landscaping. Plant palettes are expected to include non-invasive, drought-tolerant ground covers, shrubs, and shade trees, including native species where feasible. Plants would be selected to maintain sight-lines over shrubs and under tree canopies (for officer safety and site control), and to minimize potential hiding places. Where appropriate, trees would provide screening. All landscaping would be irrigated with permanent, efficient,

centrally controlled systems; areas planted with native species would be irrigated temporarily until the plants are established.

Overhead structures and canopies may span entry lanes and cover inspection docks. If used, these would be a minimum of 17 feet high to accommodate truck clearance. Canopies are assumed to be constructed of open metal-work lattices supported by concrete columns and roofed with corrugated metal, with utility conduits and downlights concealed within the latticework.

A comprehensive aesthetics treatment plan would be developed in conjunction with further facility designs and may include common color treatments for booths, buildings, canopies, barriers, fences, rails, poles, trash cans, etc. as well as an entry monument or sign at the northern edge of the CVEF where drivers access SR-11.

Drainage/Water Quality Facilities

Drainage and water quality facilities for the proposed CVEF site would be designed to accommodate on-site drainage conditions and conform with applicable regulatory requirements. Refer to Sections 3.11 and 3.12 for additional discussion of drainage and water quality requirements and potential design features.

Utility Structures and Relocations

As previously noted for the POE, utilities required to serve the CVEF are available within the immediate vicinity and include water, sewer, electricity, natural gas and communication services. Caltrans is currently coordinating with local utility owners/providers to assess service capabilities and project requirements, as well as to coordinate the proposed relocation of the previously described 24-inch high-pressure natural gas line that currently traverses both the proposed POE and CVEF sites.

Project Grading, Excavation and Construction

Grading and Excavation

The proposed CVEF site would be graded to provide generally level areas suitable for the construction of proposed facilities, with grading figures (i.e., cut and fill volumes) described above under the POE discussion due to the likelihood that grading for both sites would be conducted simultaneously. As shown on Figure 2-21, the CVEF site would be fairly level after grading, with elevations ranging between approximately 535 and 540 feet above MSL. Manufactured slopes would be constructed along the northern, eastern and western CVEF boundaries.

Construction Schedules, Equipment and Staging

As described above, it is assumed that grading and construction would proceed simultaneously for the POE, CVEF and SR-11, and that these facilities would be constructed in one phase, extending from approximately 2013 to 2015. All proposed construction staging, parking and storage would be accommodated within the proposed limits of disturbance for the three facilities, as depicted on Figure 2-21. The proposed construction limits would also accommodate all associated manufactured slopes, utility structures/connections, drainage facilities, lighting, fencing, landscaping and construction staging. A TMP, such as that described above for SR-11, would also be employed during construction of the CVEF. The construction area would be fenced and may be lighted at night.

Construction and Related Costs of the Project

The anticipated costs for R/W acquisition and construction of each build alternative and variation are presented in Table 2-3. The cost for the Preferred Alternative, which includes the updated PDS design for the POE, would be approximately \$701 million. The Draft EIR/EIS build alternatives cost estimates (without variations), which were based on more limited information available at the time the Draft EIR/EIS was prepared, would range from approximately \$519 million for the No Interchange Alternative to \$537 million for the Two Interchange Alternative. Implementation of the Siempre Viva Road Full Interchange Variation with the Two Interchange Alternative would increase the cost of this alternative to approximately \$558 million. The SR-125 Connector Variation or SR-905/SR-125/SR-11 Full Interchange Variation would add an estimated \$25 million or \$46 million, respectively, to the cost of any of the build alternatives. The No Toll Variation would reduce project implementation costs by approximately \$6 million for any build alternative. The 46-foot median variation would increase property acquisition and construction costs by an estimated \$1.7 million.

Construction of the roadway, interchanges, bridge structures or any other element(s) of the project would be contingent on available funding at the time, and the participation of others to potentially finance or fund any portion of the project would not be limited or precluded.

Table 2-3 SUMMARY OF CONSTRUCTION AND RELATED COSTS OF THE PROJECT						
Alternatives/Variations and Cost Categories		Preferred Alternative	Two Interchange Alternative		One Interchange Alternative	No Interchange Alternative
			Baseline Alternative	With Siempre Viva Road Full Interchange Variation		
SR-11¹	Construction and Support Costs	\$ 220,800,000	\$ 186,815,000	\$ 201,225,000	\$ 183,995,000	\$ 177,041,000
	R/W Costs	\$ 46,700,000	\$ 46,685,000	\$ 52,975,000	\$ 45,505,000	\$ 38,459,000
POE	Construction and Support Costs ²	\$ 355,500,000	\$ 355,500,000	\$ 355,500,000	\$ 355,500,000	\$ 355,500,000
	R/W Costs ³	\$ 36,000,000	\$ 35,958,000	\$ 35,958,000	\$ 35,958,000	\$ 35,958,000
CVEF⁴	Construction and Support Costs ²	\$ 42,400,000	\$ 42,400,000	\$ 42,400,000	\$ 42,400,000	\$ 42,400,000
Total Build Alternatives		\$ 701,400,000	\$ 667,358,000	\$ 688,058,000	\$663,358,000	\$ 649,358,000
46-foot Median Variation: Additional Construction and Support Costs		N/A	\$ 1,200,000	\$ 1,200,000	\$ 1,200,000	\$ 1,200,000
Additional R/W Costs		N/A	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000
Total with 46-foot Median Variation		N/A	\$ 669,058,000	\$ 561,158,000	\$ 536,458,000	\$ 522,458,000
SR-125 Variation: Additional Construction and Support Costs		Included in Preferred Alternative	\$ 25,300,000	\$ 25,300,000	\$ 25,300,000	\$ 25,300,000
Total with SR-125 Connector Variation³		N/A	\$ 692,658,000	\$ 713,358,000	\$ 688,658,000	\$ 674,658,000

Table 2-3 (cont.) SUMMARY OF CONSTRUCTION AND RELATED COSTS OF THE PROJECT					
Alternatives/Variations and Cost Categories	Preferred Alternative	Two Interchange Alternative		One Interchange Alternative	No Interchange Alternative
		Baseline Alternative	With Siempre Viva Road Full Interchange Variation		
SR-905/SR-125/SR-11 Full Interchange Variation Additional Construction and Support Costs	N/A	\$ 46,200,000	\$ 46,200,000	\$ 46,200,000	\$ 46,200,000
Total with SR-905/SR-125/SR-11 Full Interchange Variation³	N/A	\$ 713,558,000	\$ 734,258,000	\$ 709,558,000	\$ 695,558,000
No Toll Variation: Reduction in Construction and Support Costs	N/A	\$ (6,000,000)	\$ (6,000,000)	\$ (6,000,000)	\$ (6,000,000)
Total with No Toll Variation³	N/A	\$ 661,358,000	\$ 682,058,000	\$ 657,358,000	\$ 643,358,000

¹ Includes SR-905 improvements between Britannia Blvd and SR-905/SR-125/SR-11 Interchange

² Represents the cost of the updated POE/CVEF design presented in the PDS (GSA 2011)

³ Includes the R/W costs for both the POE and the CVEF

⁴ No R/W costs because of location within Caltrans R/W

2.2.4 Design Exceptions

Based on preliminary project designs, potential design exceptions and design restrictions have been identified. The discussion below summarizes mandatory and advisory design exceptions that would be required by each of the project build alternatives and variations to minimize impacts to existing and proposed development, and to meet the project's purpose and need. Further information is contained in Appendix B.

Mandatory Design Exceptions

Mandatory design exceptions would be required to address the following local interchange spacing distances from the SR-905/SR-125/SR-11 Interchange that would be less than the two-mile standard:

- Under any of the build alternatives, including the Preferred Alternative, the distance between the SR-905/SR-125/SR-11 Interchange and the existing La Media Road Interchange would be approximately 0.8 mile, due to the original design of SR-905.
- Under the Preferred Alternative and any of the Draft EIR/EIS build alternatives with the SR-125 Connector Variation, the distance between the SR-905/SR-125/SR-11 Interchange and the existing Otay Mesa Road Interchange would be approximately 0.2 mile, due to the original design of SR-125.
- Under the Preferred Alternative and the Two Interchange Alternative, the distance between the SR-905/SR-125/SR-11 Interchange and the Enrico Fermi Drive Interchange would be approximately 1.2 miles.
- Under the One Interchange Alternative, the distance between the SR-905/SR-125/SR-11 Interchange and the Alta Road Interchange would be approximately 1.7 miles.

In general, greater interchange spacing provides greater distance for drivers to make decisions and change lanes between interchanges, or between an interchange and the POE. Only the No Interchange Alternative would meet the mandatory distance between the SR-905/SR-125/SR-11 Interchange and the nearest local street interchange along SR-11 (although the design exception for the distance to La Media Road would still be required).

In addition, any of the build alternatives, including the Preferred Alternative would require a mandatory design exception for the non-standard super-elevation rate at the La Media Road exit ramp from SR-11.

Advisory Design Exceptions

Advisory design exceptions would be required to address the following issues:

- Under any of the build alternatives, including the Preferred Alternative, the auxiliary lane lengths at the ramps connecting SR-905 with SR-11 would be less than the design standard.
- Under any of the build alternatives, including the Preferred Alternative, the 22-foot median width near Sanyo Avenue would be non-standard, requiring an advisory design exception. The 46-foot Median Variation of the Draft EIR/EIS build alternatives would avoid the need for this design exception; this median variation is not included in the Preferred Alternative, so the advisory design exception would be necessary.
- The Preferred Alternative and the Two Interchange Alternative include a partial interchange at Siempre Viva Road, which would be non-standard.
- Similarly, the SR-125 Connector Variation and the Preferred Alternative would include the existing SR-125/Otay Mesa Road partial interchange. Since this partial interchange would be within the project limits and there are no plans to develop a full interchange at this location, an advisory design exception would be required.
- The design standard for access control at the Siempre Viva Road Interchange would not be achieved under any of the alternatives or variations, because points of access for the toll facility and the CVEF would be too close to this interchange.
- Under any of the build alternatives, including the Preferred Alternative, no passing lanes would be provided on the westbound SR-905 and westbound SR-11 off-ramps to La Media Road; this would be non-standard. The inclusion of the SR-905/SR-125/SR-11 Full Interchange Variation with any of the Draft EIR/EIS build alternatives would result in a similar situation at additional locations.
- The inclusion of the SR-905/SR-125/SR-11 Full Interchange Variation with any of the Draft EIR/EIS build alternatives would also result in below-standard design speeds.
- Side slopes designed steeper than 4:1 in various locations would be non-standard under any of the build alternatives, including the Preferred Alternative.

2.2.5 No Build Alternative

Under the No Build Alternative, none of the project components described under the build alternatives would be constructed, including SR-11 (and associated interchanges, under/overcrossings, connectors, SR-905 modifications, and toll-related facilities), the Otay Mesa East POE (including the potential future transit center site), and the CVEF site. The existing Otay Mesa POE and associated CVEF, as well as the

existing San Ysidro POE, would remain open and operational. The SR-905/SR-125 Interchange would be implemented as previously approved under the SR-905 project, including the connectors between SR-905 and SR-125, local access ramps between SR-905 and Enrico Fermi Drive (along a similar alignment as proposed SR-11), and the associated westbound to northbound SR-125 ramp from Enrico Fermi Drive.

2.2.6 Decision-making Process

After the Draft EIR/EIS public circulation period, in accordance with NEPA and CEQA, FHWA and Caltrans have considered all comments and identified a Preferred Alternative. This Final EIR/EIS analyzes the Preferred Alternative and makes the final determination of the project's effect on the environment. In accordance with CEQA, after circulation of the Final EIR/EIS, Caltrans will certify if the project complies with CEQA, prepare CEQA findings for all significant impacts identified, prepare a Statement of Overriding Considerations for impacts that will not be mitigated below a level of significance, and certify that the findings and Statement of Overriding Considerations have been considered prior to project approval. Caltrans will then file a Notice of Determination with the State Clearinghouse that will identify whether the project will have significant impacts, if mitigation measures were included as conditions of project approval, that findings were made, and that a Statement of Overriding Considerations was adopted. With respect to NEPA, FHWA will verify, as needed, compliance with all federal laws, regulations and requirements, and document and explain its decision regarding the selected alternative, project impacts, and mitigation measures in a ROD in accordance with NEPA. A Statute of Limitations may be published in the Federal Register; under Section 6002 of the SAFETEA-LU law (2005), a Statute of Limitations of 180 days would apply.

2.3 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FURTHER DISCUSSION PRIOR TO THE DRAFT EIR/EIS

In addition to the Tier II alternatives described above for SR-11 (which are based on the Phase I Western Alternative), FHWA/Caltrans considered the Central Alternative and the No Action Alternative in the Phase I analysis (Caltrans 2008a). In 2000, the PSR for SR-11 (Caltrans 2000) considered not only the Western, Central and No Action alternatives, but also an Eastern Alternative and a Local Road Alternative. A TSM/TDM Only Alternative was also evaluated as part of the Tier II analysis, along with an additional design variation for the Two Interchange Alternative (as described in Section 2.2.1 of this Final EIR/EIS). A number of design alternatives were also considered for the proposed CVEF involving the use of facilities at the existing Otay Mesa CVEF and the provision of secured access for commercial vehicles from the proposed East Otay Mesa POE. All of these alternatives and variations were considered during the process of developing the proposed project alternatives analyzed in this Tier II Final EIR/EIS, but were eliminated from further consideration for reasons described below.

Prior studies have focused on alternative locations for the proposed facilities. The Phase I PEIR/PEIS culminated in the identification of the currently proposed SR-11 alignment and POE location as the preferred location, and a conditional Presidential Permit was granted for the POE in this location. With alternative locations having been addressed in prior studies and a preferred location identified, this tiered Final EIR/EIS addresses only design alternatives.

2.3.1 Central Alternative

The Central Alternative included an approximately 2.5-mile-long SR-11 corridor extending east from the approved SR-905/SR-125 Interchange at Harvest Road between Otay Mesa Road and Airway Road, continuing through the Enrico Fermi Drive and Siempre Viva Road interchanges, and terminating at the northern edge of the proposed Central POE Site.

The Central Alternative studied in the PSR would have committed nearly 25 more acres of currently undeveloped land to transportation-related uses, and would have impacted more areas occupied by sensitive wetlands and Diegan coastal sage scrub habitat than the Western Alternative on which the Draft EIR/EIS alternatives are based. In addition, the Central Alternative would have had the potential for more substantial edge effects on Diegan coastal sage scrub (in which the federally listed threatened coastal California gnatcatcher has been detected) and non-native grassland communities in the eastern portion of the area studied in Phase I. The Central Alternative would also have required more earthwork and would have had a higher construction cost than the Western Alternative. Because of the anticipated additional impacts related to sensitive biological resources and grading requirements, the Central Alternative was eliminated from further consideration during the Phase I analysis.

2.3.2 Eastern Alternative

The Eastern Alternative would have included an approximately 2.8-mile-long SR-11 corridor, extending eastward from the approved SR-905/SR-125 Interchange at Harvest Road between Otay Mesa Road and Airway Road, continuing through the Enrico Fermi Drive and Siempre Viva Road interchanges, and terminating at the northern edge of an Eastern POE site. It is assumed that the Eastern POE site would have been similar in terms of access, size, and conceptual layout to the Western and Central POE sites described in the PEIR/PEIS.

The PSR assumed that the Eastern SR-11 Corridor would have accommodated four standard width main lanes, standard width shoulders and median facilities, standard sight distances, associated long-term drainage/retention facilities, and temporary construction impacts. It estimated that the Eastern Alternative

would have required approximately 141 acres of new R/W and 99 acres for the Eastern POE site, and would have traversed a developed Sempra Energy utility easement.

Biological resources, cultural resources and hazardous materials studies were conducted within a study area that included the Western, Central and Eastern alternatives in 2000 and 2002. Based on these studies, it was determined that the Eastern Alternative would have substantially greater impacts to sensitive biological resources (e.g., protected habitat, wetlands/WUS and associated species listed as rare, threatened or endangered by the USFWS). This would have included impacts to Diegan coastal sage scrub, southern riparian scrub, potential vernal pools, and sensitive plants and animals, including the federally listed as threatened and state-listed as endangered Otay tar plant, and the federally listed as endangered Quino checkerspot butterfly.¹ In addition, the Eastern Alternative would have impacted a cultural resource site that was found to be an intact quarry/lithic workshop containing over 1,000 pieces of debitage, cores and lithic tools, as well as a mano, with evidence of possible subsurface deposits. This site was not tested, because it was determined that the Eastern Alternative would be rejected for all of the reasons described above. No substantial hazardous materials issues were identified for the Western, Central or Eastern alternatives.

Based on the potential for much greater impacts to biological and cultural resources and greater R/W and construction costs associated with the Eastern Alternative, compared to the Western and Central alternatives, as well as potential complications associated with impacting an existing Sempra Energy utility easement, the Eastern Alternative was eliminated from further consideration in Phase I, before the development of the PEIR/PEIS.

2.3.3 Local Road Alternative

The Local Road Alternative would have provided for a limited-access and non-controlled-access facility, expanding and extending an existing road to access the POE site. Three variations of this alternative were identified in the SR-11 PSR, involving the extension of Otay Mesa, Airway or Siempre Viva roads (Caltrans 2000). Each of these variations could have connected with any of the three alternative POE sites associated with the previously described Western, Central and Eastern alternatives. The existing road would also have been extended to the east beyond Alta Road, and a north-south connection to the POE (not currently identified in the Circulation Element of the County General Plan) would have been provided to link the extended road to a proposed POE. Long-term drainage/retention facilities were not considered for any of these alternatives, and the variations based on Airway and Siempre Viva roads would have included no intersections with local roads. The Otay Mesa Road variation would have included an intersection configuration at Enrico Fermi Drive.

The PSR addressed one set of assumptions for all of the Local Road Alternative variations, estimating that this alternative would have required approximately 198 acres of R/W, including 99 acres for the Local Road Alternative POE site.

The PSR also determined that the Local Road Alternative would have provided substantially less mobility than would a highway for interregional cross-border traffic, since local roadways and intersections were not designed to handle the anticipated high volume of truck traffic. Local traffic circulation and access to local businesses would potentially have been disrupted, as currently occurs due to queuing associated with congestion at the existing Otay Mesa POE. Emissions associated with such congestion would also likely have been higher under the Local Road Alternative. Accordingly, it was determined that none of the Local Road Alternative variations would have met the identified long-term purpose and need of the

¹ In addition, the federally listed as threatened California gnatcatcher was observed slightly northeast of the proposed Eastern POE site.

SR-11 and Otay Mesa East POE program, so this alternative was eliminated from further consideration in Phase I, before the development of the PEIR/PEIS.

2.3.4 TSM/TDM Only Alternative

This alternative involved the use of TSM/TDM measures as a “stand alone” alternative to the proposed SR-11, POE and CVEF facilities. TSM strategies consist of actions that enhance the efficiency of existing roadways without requiring additional through lanes, by increasing the number of vehicle trips that roadways can accommodate. Depending on individual site conditions, TSM measures may include facilities such as ramp metering and auxiliary lanes, as well as the use of ITS such as CCTV, changeable message signs (CMS), TMS and TMC connections to monitor and improve traffic conditions. In addition, TSM strategies also encourage the combined use of automobile facilities, public/private transit, ridesharing, and bicycle/pedestrian improvements to create and enhance a unified and multi-modal urban transportation system.

TDM focuses on regional strategies for reducing the number of vehicle trips and vehicle miles traveled, as well as increasing vehicle occupancy. Specifically, this can include the provision of ridesharing (carpool or HOV) lanes, implementation of multi-modal facilities and services to increase transportation options, provision of transit-oriented facilities to support bus and pedestrian traffic, connections to BRT and bicycle facilities (e.g., bike routes and staging areas), implementation of variable congestion pricing (as previously described), provision of dedicated commercial and passenger vehicle lanes, and use of extended POE hours of operation.

| Implementation of the TSM/TDM Only Alternative would have consisted of one of the following two potential options:

1. Constructing the proposed Otay Mesa East POE/CVEF (or some variation of these facilities) without SR-11, and implementing TSM/TDM measures at the POE/CVEF and one or more local roadways used to access the site; or
2. Not constructing any of the proposed project facilities and implementing TSM/TDM measures at other local/regional POE sites.

As described above in Section 2.3.3, *Local Road Alternative*, the potential use of local roadways to provide access to the Otay Mesa East POE/CVEF in lieu of SR-11 was considered and rejected as an alternative to the proposed project, since it would not meet the identified purpose and need of the proposed project. Based on this conclusion, the use of either of the identified options under the TSM/TDM Only Alternative would also not meet the project purpose and need, as both would involve the use of local roadways for border access in lieu of SR-11.

In addition, based on the description of existing and projected border crossing traffic volumes in Section 1.2.2, *Need for the Project*, the TSM/TDM Only Alternative would not adequately address the need for increased border transportation capacity. Specifically, U.S. - Mexico trade has increased substantially since the passage of NAFTA, with over 80 percent of merchandise shipped across the border by truck (DOT 2007b). Passenger traffic has also risen dramatically in the past decade, with over 60 million border crossings in the San Diego County/Baja California border area during 2006 (SANDAG/Caltrans 2006a). The number of primary inspections (commercial and passenger) at the existing Otay Mesa POE, for example, increased over 80 percent between 1996 and 2006, and is projected to climb an additional 50 percent by 2025. It is also anticipated that the total number of primary inspections will increase by nearly 30 percent during the same period at both the San Ysidro and Tecate POEs (Caltrans/GSA 2007). These existing and projected increases, coupled with the recent adoption of additional border crossing

security requirements, have highlighted the fact that existing border transportation infrastructure in the San Diego-Tijuana region is not designed to accommodate current or anticipated future traffic volumes.

While the implementation of TSM/TDM measures can provide some congestion relief by increasing transportation efficiency and reducing trips as noted, they are not sufficient, in and of themselves, to effectively address existing or future transportation capacity issues in the San Diego-Tijuana border region. Based on these conditions, as well as the fact that many TSM/TDM measures are currently (or proposed to be) implemented at existing and proposed POE facilities (including the proposed project as described), the TSM/TDM Only Alternative is not considered a viable option to the proposed project and is not carried forward for impact analysis in this Final EIR/EIS.

2.3.5 CVEF Alternatives

Three alternative scenarios were identified for the proposed CVEF at the Otay Mesa East POE, based on criteria including CHP requirements, project schedule, travel times, environmental factors and cost. These alternatives all involved the use of the existing CVEF at the Otay Mesa POE and a secured access road for commercial vehicles from the Otay Mesa East POE, with two options also including limited inspection facilities at a proposed new Otay Mesa East CVEF site. The CVEF alternatives were evaluated in a separate study (AECOM 2009), as summarized below. In addition to the three CVEF alternative scenarios, several alternative locations for a new CVEF were also evaluated during the Tier II project scoping phase. It was determined that the currently proposed CVEF location and orientation provided the most efficient traffic flow from the POE to the CVEF and then to SR-11, and allowed for sufficient R/W for each facility and spacing between the three facilities.

CVEF Alternative A - Secured Access Road to the Existing Otay Mesa CVEF

Under this alternative, the proposed CVEF facilities adjacent to the Otay Mesa East POE would not be constructed, and a secured access road would be built from the Otay Mesa East POE to the existing Otay Mesa CVEF. All applicable inspections of northbound commercial vehicles crossing the border at the Otay Mesa East POE would be conducted at the existing Otay Mesa CVEF site, and commercial vehicles would then be routed onto existing local roadways following release by the CHP. Based on this scenario, the design of nearby interchanges on SR-905 and SR-11 (as well as local roadways) would need to accommodate the associated high commercial traffic volumes. This alternative would also require modification of the existing Otay Mesa CVEF site to accommodate commercial traffic from the secured access road, including expansion of existing scale capacity and provision of two additional lanes to access the existing weigh-in-motion (WIM) inspection stations.

The secured access road under this design would likely encompass a two-lane, one-way facility, with a 10-foot wide inside shoulder for emergency vehicle access and an 8-foot wide outside shoulder. Security requirements for the described access road would be determined based on criteria including proximity to the international border, but would likely include measures such as concrete barriers or a CBP-approved fence along both sides of the road. The secured access road would also traverse several parcels between the Otay Mesa CVEF and the Otay Mesa East POE, with approximately 15 acres of associated R/W acquisition required. These requirements could potentially be more extensive and/or include construction of additional grade-separated access crossing facilities if the proposed access road alignment were to “landlock” portions of these parcels (i.e., trapping these areas between the secured corridor and the international border), thereby reducing their development potential.

While this alternative would have met applicable CHP capacity and mission requirements for commercial vehicle inspections, it was eliminated from further consideration based on the following factors: (1) potential R/W acquisition and/or construction requirements (and associated costs) from possible

“landlocking” of parcels bisected by the secured access road; (2) increased travel time and potential delays for northbound commercial vehicles; (3) potential delays to the overall project schedule (and related costs) due to additional technical and environmental review requirements for the secured access roadway corridor and the existing Otay Mesa CVEF modifications; and (4) additional biological impacts/mitigation requirements (and associated costs) from construction of the secured access road corridor, including substantial impacts to jurisdictional wetlands, vernal pools, and basins with fairy shrimp.

CVEF Alternative B - WIM Stations and Access to the Existing CVEF via Public Roads

This alternative would entail constructing two WIM stations at the currently proposed Otay Mesa East CVEF site, with cargo and weight inspections to be conducted therein by CBP and CHP personnel, respectively. Vehicles cleared during this process would be released to SR-11, while those requiring additional inspection would be routed to the existing Otay Mesa CVEF via Siempre Viva Road. Vehicles dispatched to the Otay Mesa CVEF would be affixed with an electronic tracking device to ensure compliance with required CVEF inspection.

This alternative was eliminated from further consideration based on the following factors: (1) while adequate scale capacity would be provided under this scenario at the proposed WIM stations, additional garage inspection bays could be required at the existing Otay Mesa CVEF and it is unclear if CHP mission requirements related to issues including enforcement, safety and liability would be met; (2) increased travel time would result for northbound commercial vehicles routed to the Otay Mesa CVEF for additional inspection; (3) potential delays to the overall project schedule (and related costs) could occur as a result of research requirements for an acceptable electronic tracking system; and (4) this alternative could require improvements to Siempre Viva Road by local agencies to ensure adequate capacity for commercial vehicle traffic, potentially resulting in additional biological impacts/mitigation requirements (and associated costs).

CVEF Alternative C - WIM Stations and Secured Access to the Existing Otay Mesa CVEF

This alternative would combine elements of CVEF Alternatives A and B, encompassing a WIM station at the currently proposed Otay Mesa East CVEF site and a secured access road from the Otay Mesa East POE to the existing Otay Mesa CVEF. The design and operation of these facilities would be the same as described above for similar facilities in Alternatives A and B.

While this alternative would have met applicable CHP capacity and mission requirements for commercial vehicle inspections, it was eliminated from further consideration based on similar factors as described for Alternatives A and B, including: (1) potential R/W acquisition and/or construction requirements (and associated costs) as previously described from possible “landlocking” of parcels bisected by the secured access road; (2) increased travel time for northbound commercial vehicles routed to the Otay Mesa CVEF for additional inspection; (3) potential delays to the overall project schedule (and related costs) due to additional technical and environmental review requirements for the secured access roadway corridor and the existing Otay Mesa CVEF modifications; and (4) additional biological impacts/mitigation requirements (and associated costs) from construction of the secured access road corridor, including impacts to jurisdictional wetlands.

2.4 PERMITS AND APPROVALS NEEDED

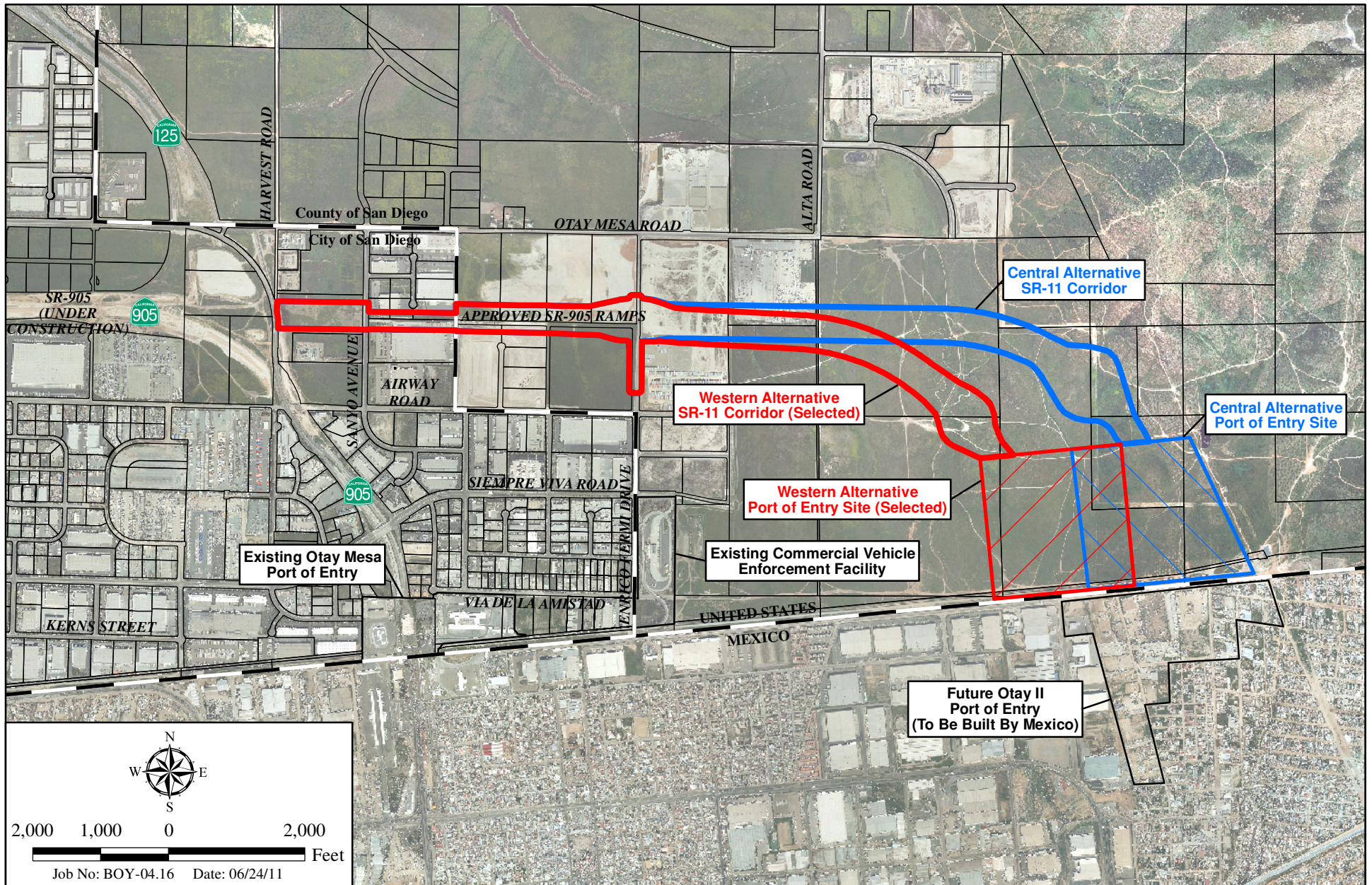
The following program-level permits, reviews and approvals were acquired during implementation of Phase I:

Agency	Permit/Approval	Status
U.S. Department of State	Conditional Presidential Permit for the POE (included as Appendix A)	Approved
U.S. General Services Administration	Approval of preferred POE site alternative	Approved

Based on identified project impacts and current environmental analysis, the following permits, reviews and approvals will be required for project-level implementation in Tier II:

Agency	Permit/Approval	Status
U.S. Department of State	Full Presidential Permit for the POE	Pending
U.S. Fish and Wildlife Service	Endangered Species Act Section 7 Consultation for Threatened and Endangered Species	Consultation ended with the receipt of the Biological Opinion on November 23, 2011
U.S. Army Corps of Engineers	CWA Section 404 Nationwide Permit for filling waters of the United States	Pending
California Regional Water Quality Control Board	(1) Clean Water Act Section 401 Water Quality Certification for discharge of dredge and fill materials into federal waters, or Waste Discharge Requirements for non-federal waters and/or other discharges; and (2) conformance with NPDES Caltrans Statewide Permit and/or Groundwater Extraction/Disposal Permit for the SR-11 and the POE/CVEF sites	Pending
California Department of Fish and Game	California Fish and Game Code 1602 Agreement for Streambed Alteration Section 2080.1 Agreement for Threatened and Endangered Species	Pending
State Water Resources Control Board	(1) Conformance with Statewide Caltrans NPDES Permit for SR-11, and (2) Conformance with NPDES General Construction Permit for the POE/CVEF sites	Pending
County of San Diego and City of San Diego	Freeway Agreements	Pending
International Boundary and Water Commission	Approval of project grading/drainage designs within IBWC jurisdiction along the border	Pending
California Transportation Commission	SR-11 Route Adoption	Pending

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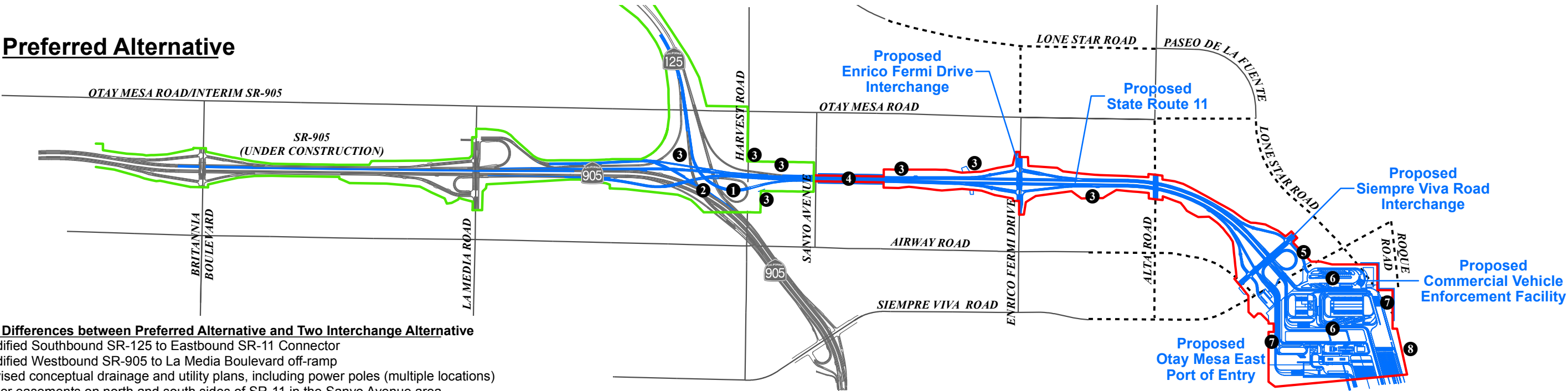
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Phase I Program Alternatives

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

Figure 2-1

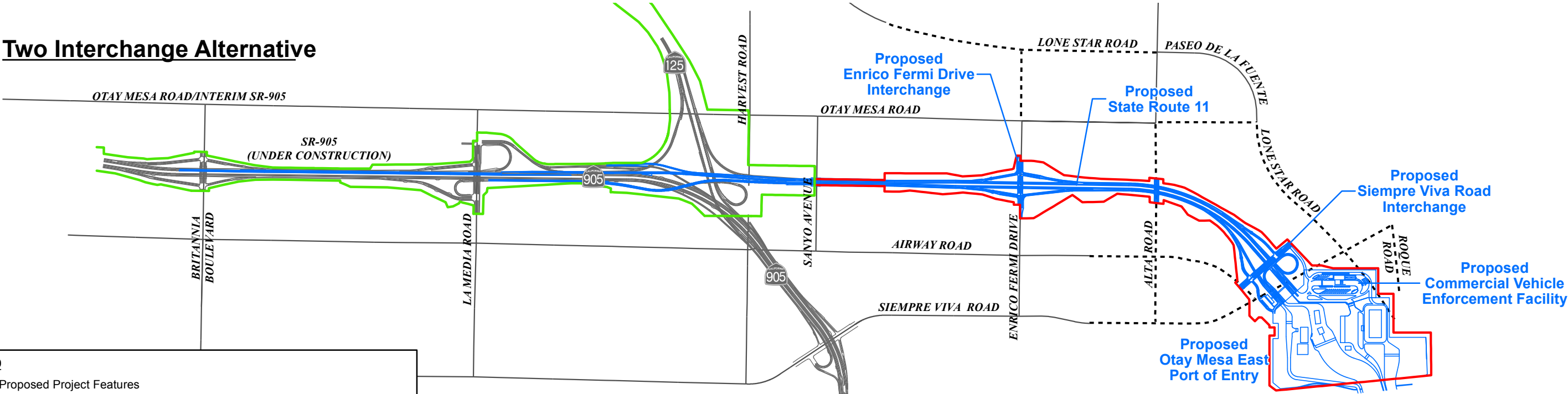
Preferred Alternative



Major Differences between Preferred Alternative and Two Interchange Alternative

- 1. Modified Southbound SR-125 to Eastbound SR-11 Connector
- 2. Modified Westbound SR-905 to La Media Boulevard off-ramp
- 3. Revised conceptual drainage and utility plans, including power poles (multiple locations)
- 4. Wider easements on north and south sides of SR-11 in the Sanyo Avenue area
- 5. Addition of northbound access from CVEF to Siempre Viva Road (for commercial vehicles only)
- 6. Updated POE and CVEF layouts
- 7. Conceptual design identified for relocation of 30-inch high-pressure gas line within the POE/CVEF footprint
- 8. Eastern POE boundary moved westward to reduce impacts to sensitive species

Two Interchange Alternative



LEGEND

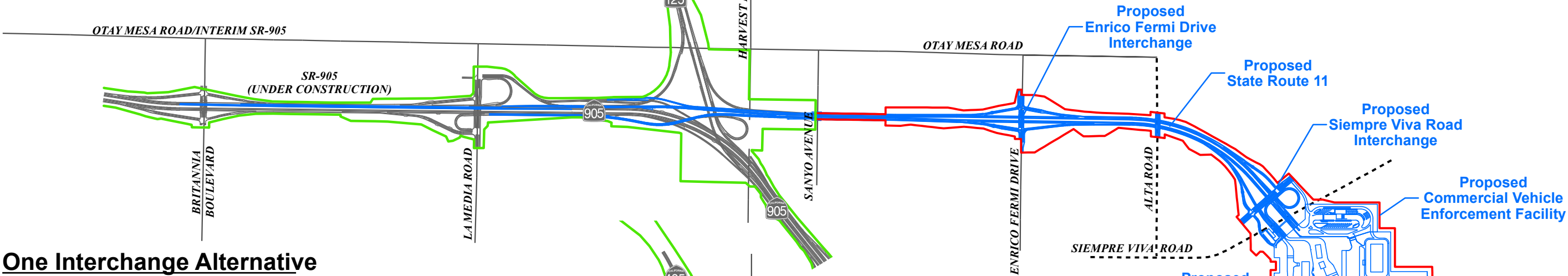
- Proposed Project Features
- Proposed Right of Way
- Project Study Area Parcels Owned By Caltrans/Transportation Agencies
- Future County Circulation Element Roads to be Built by Others (Would Require Revisions by the County to Accommodate the Proposed Project)



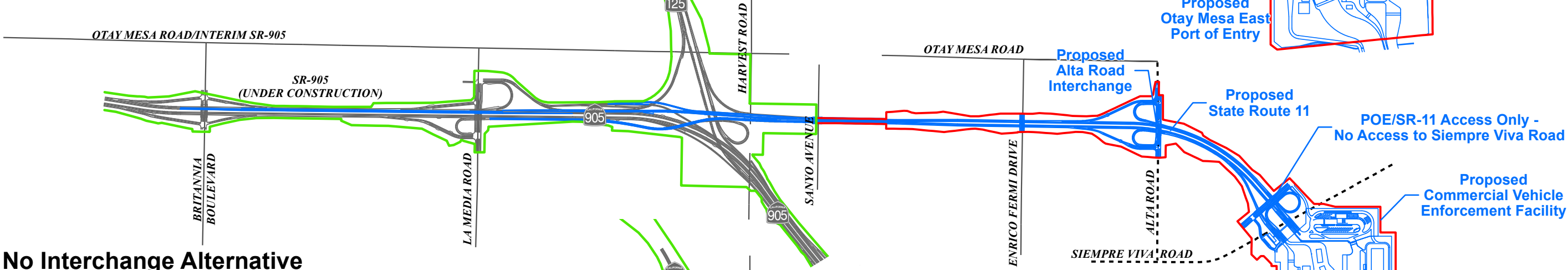
Comparative Overview of the Preferred Alternative and the Two Interchange Alternative

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

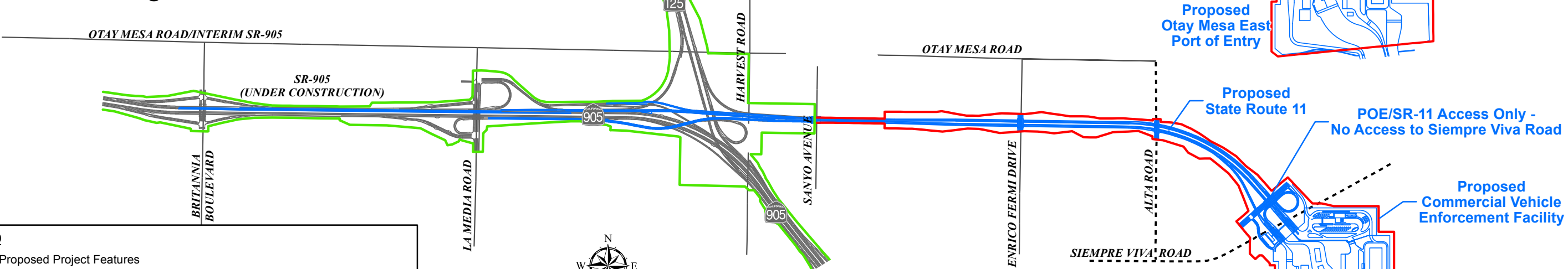
Two Interchange Alternative



One Interchange Alternative



No Interchange Alternative



LEGEND

- Proposed Project Features
- Proposed Right of Way
- Project Study Area Parcels Owned By Caltrans/Transportation Agencies
- Future County Circulation Element Roads to be Built by Others (Would Require Revisions by the County to Accomodate the Proposed Project)

2,000 1,000 0 2,000 Feet

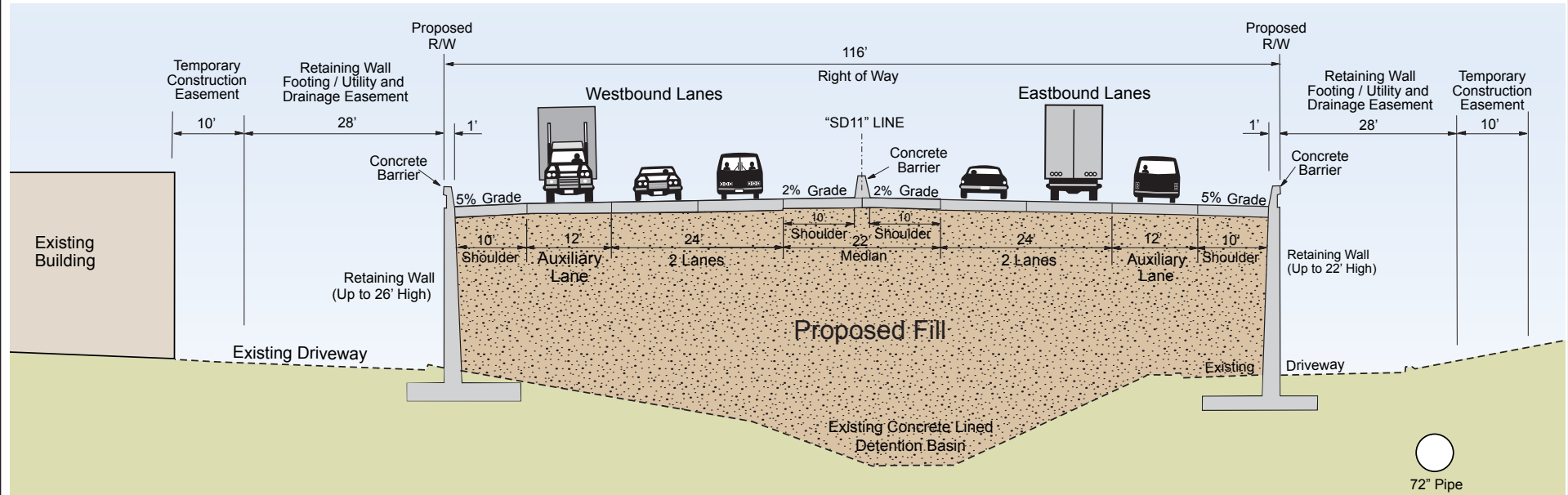
Job No: BOY-04.16 Date: 06/24/11

Comparative Overview of the Draft EIR/EIS Build Alternatives

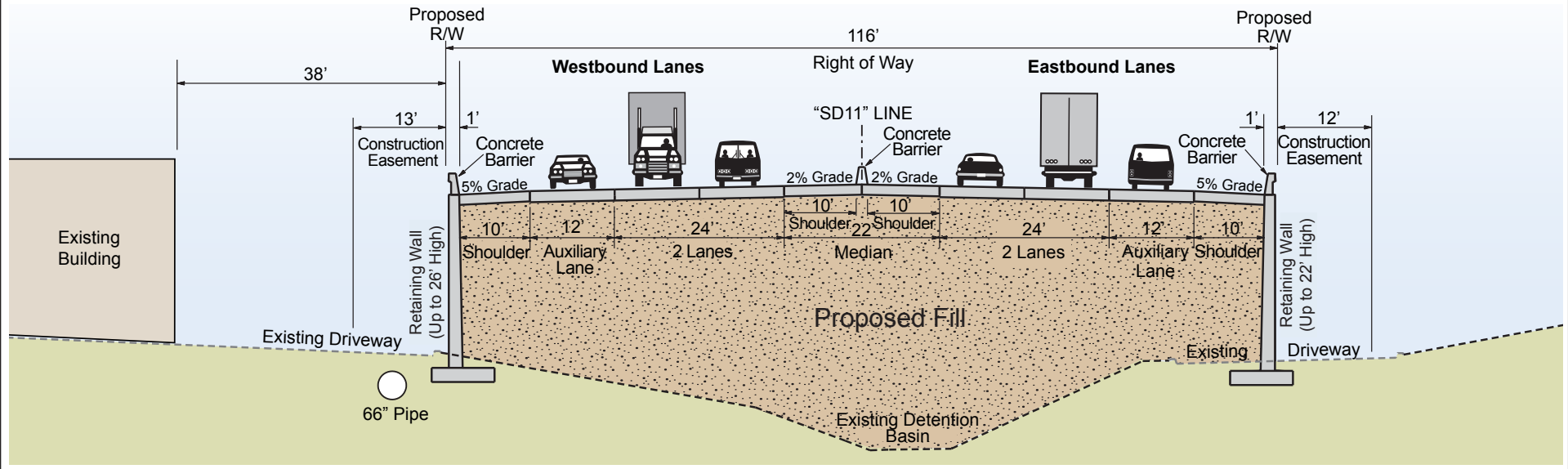
STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

Figure 2-3

Preferred Alternative: Cross Section East of Sanyo Avenue STA 41+00



Two Interchange Alternative: Cross Section East of Sanyo Avenue STA 41+00

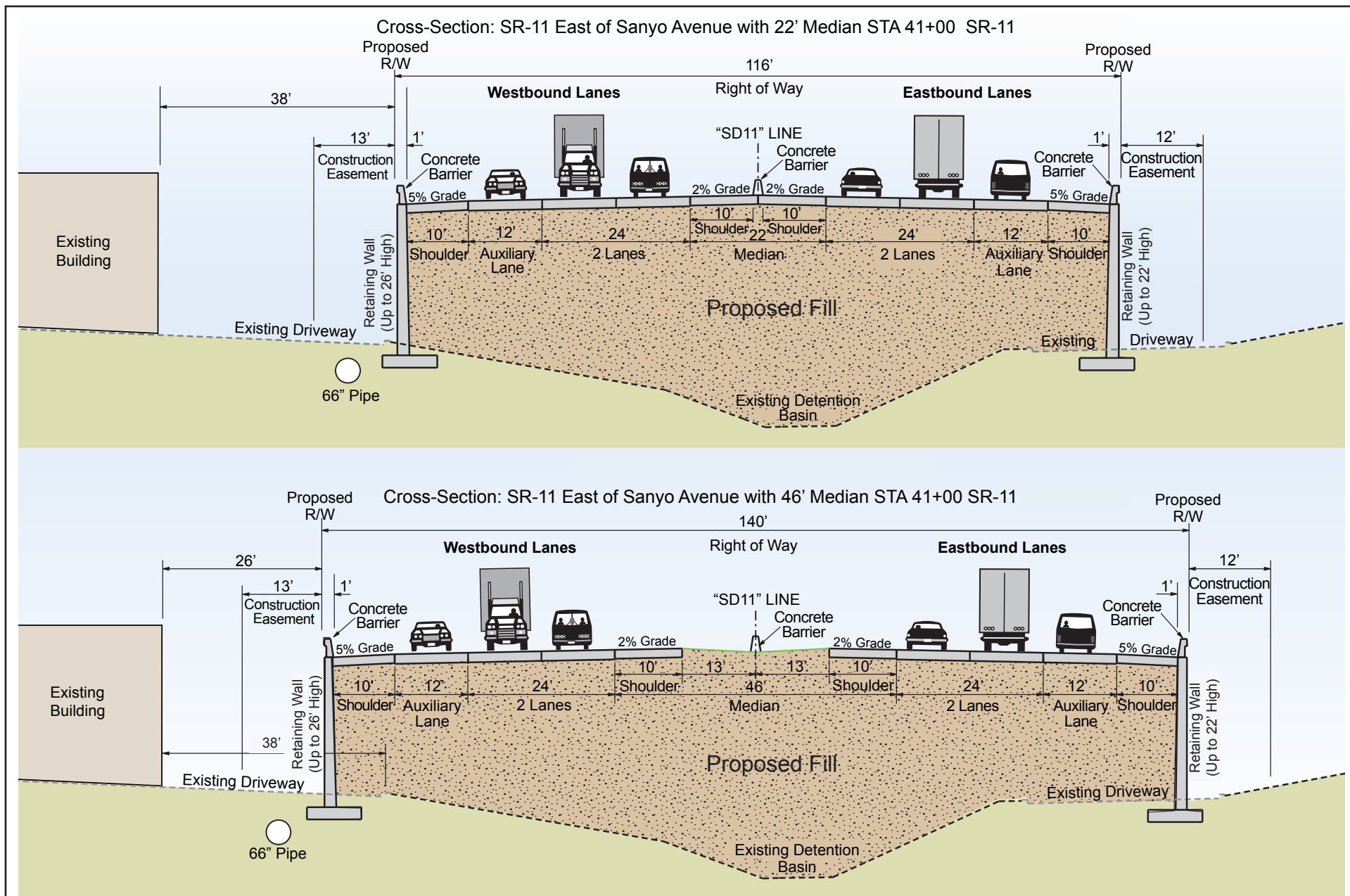


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Cross-Sections of SR-11 in the Sanyo Avenue Area: Preferred Alternative and Two Interchange Alternative (with 22-foot Median)

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

Figure 2-4

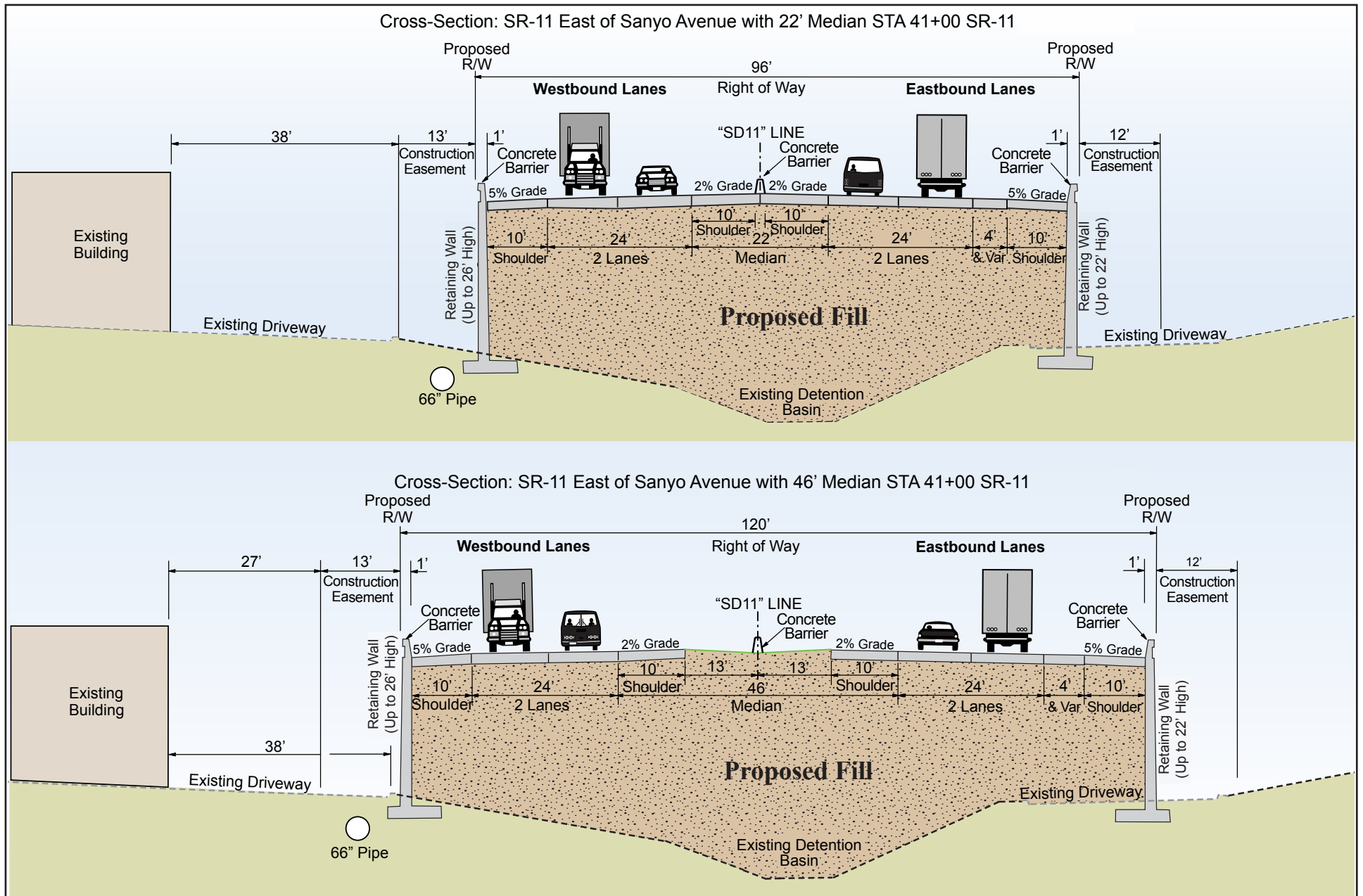


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**Cross-Sections of SR-11 in the Sanyo Avenue Area:
Two Interchange Alternative (with 22-foot Median) and 46-foot Median Variation**

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

Figure 2-5

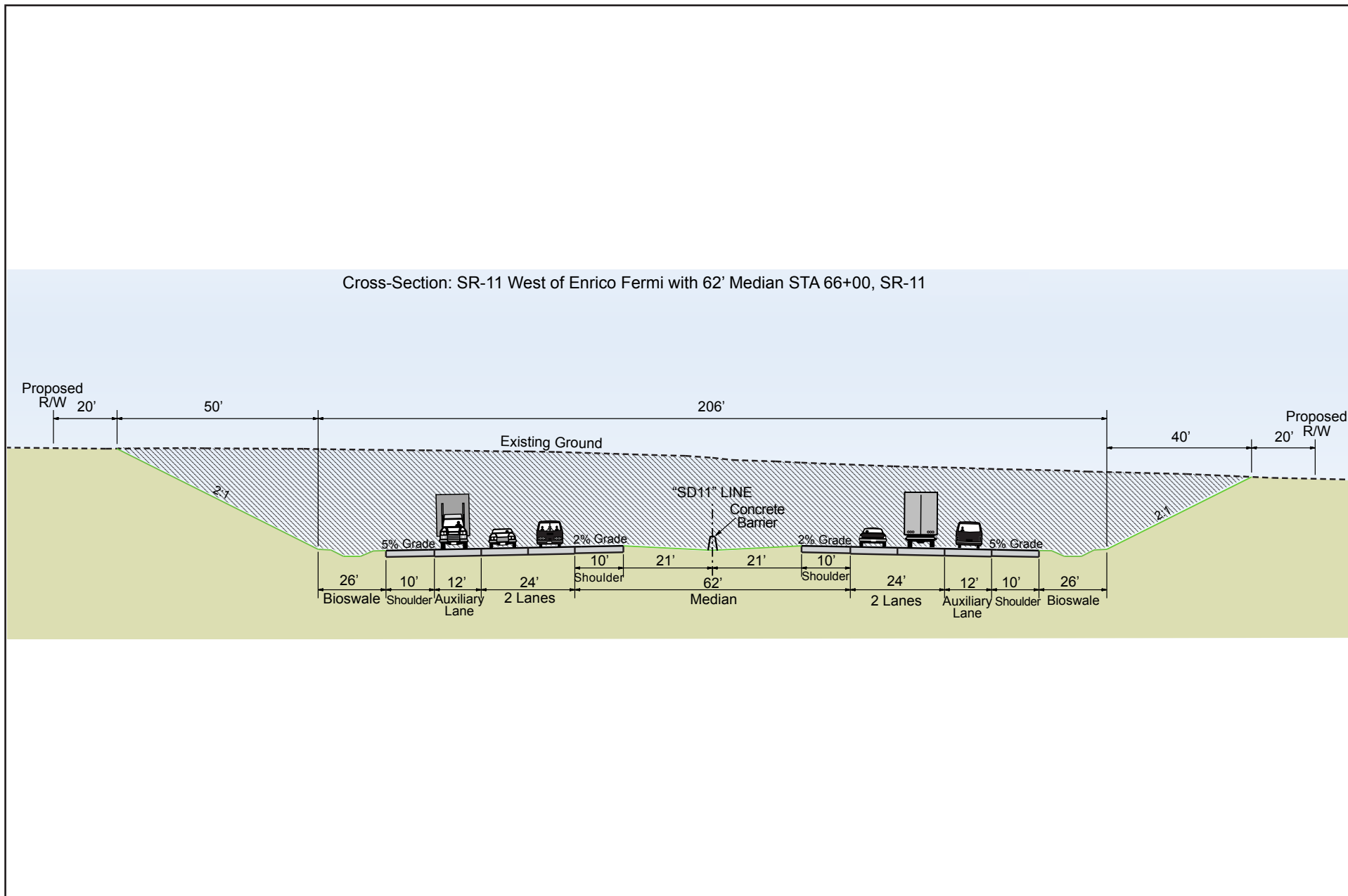


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Cross-Sections of SR-11 in the Sanyo Avenue Area: One and No Interchange Alternatives (with 22-foot Median) and 46-foot Median Variation

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

Figure 2-6

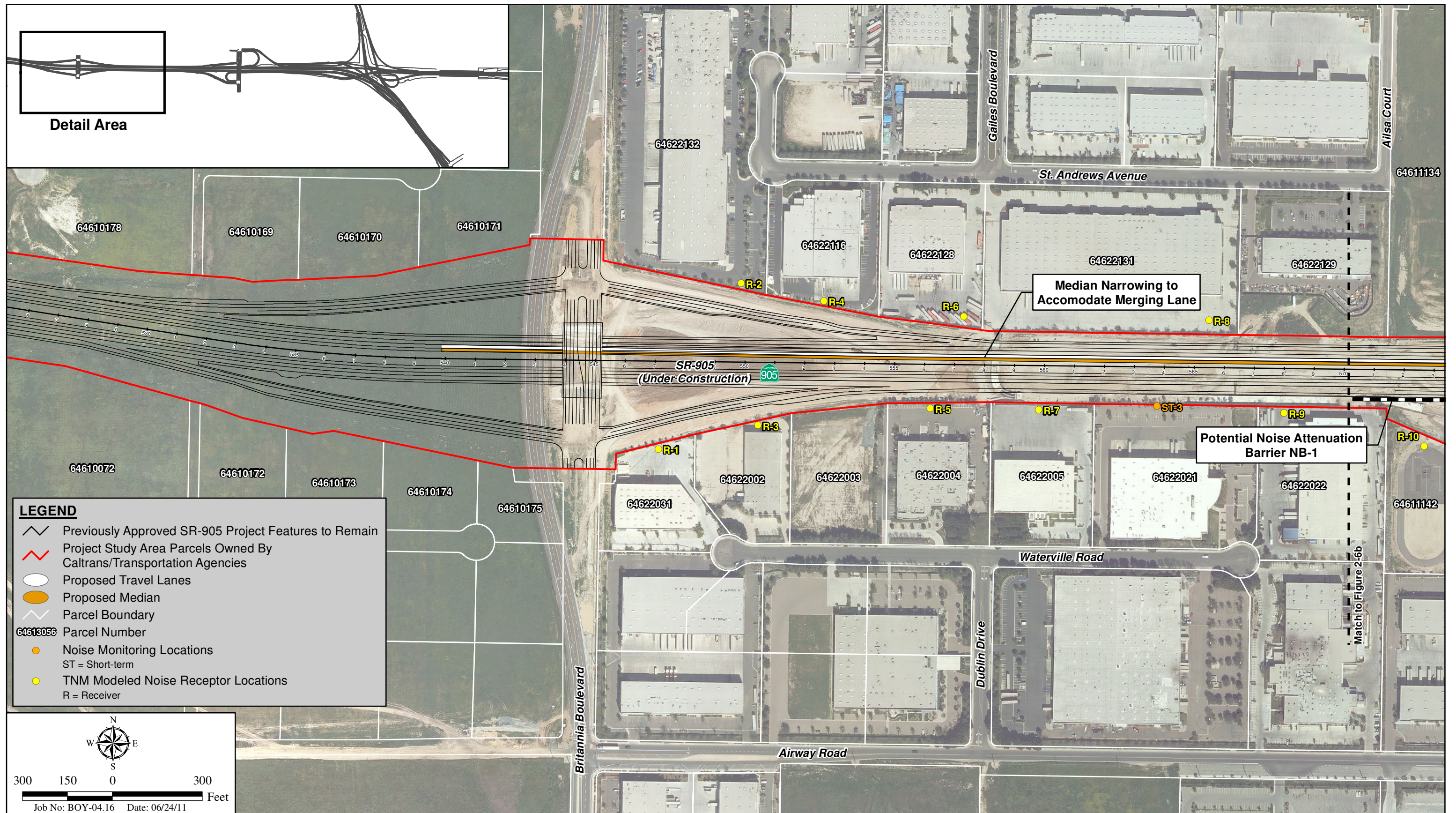


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Typical Cross-Section of SR-11 with 62-foot Median (All Build Alternatives)

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

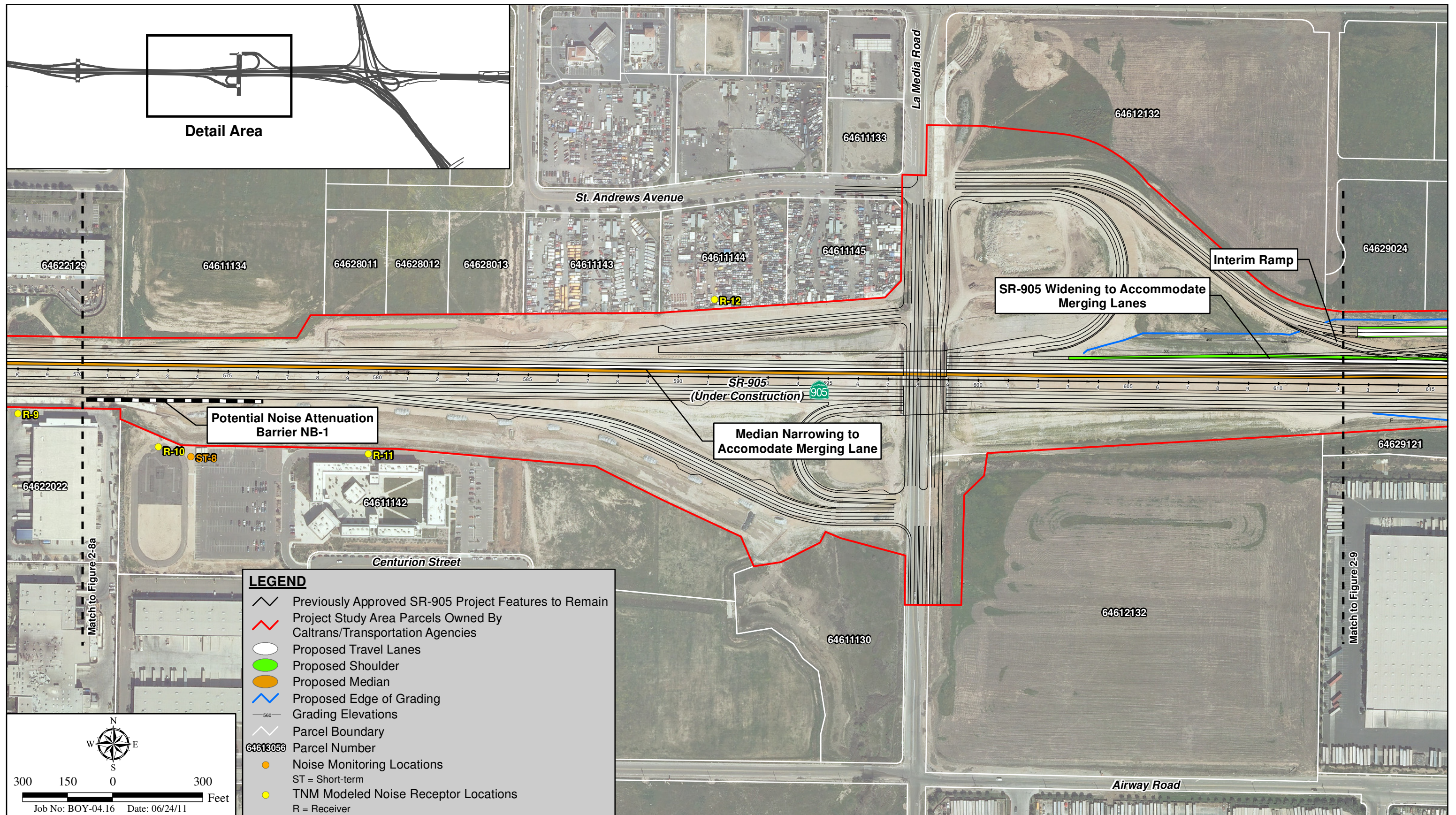
Figure 2-7



Major Project Features West of SR-905/SR-125/SR-11 Interchange (Preferred Alternative)

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

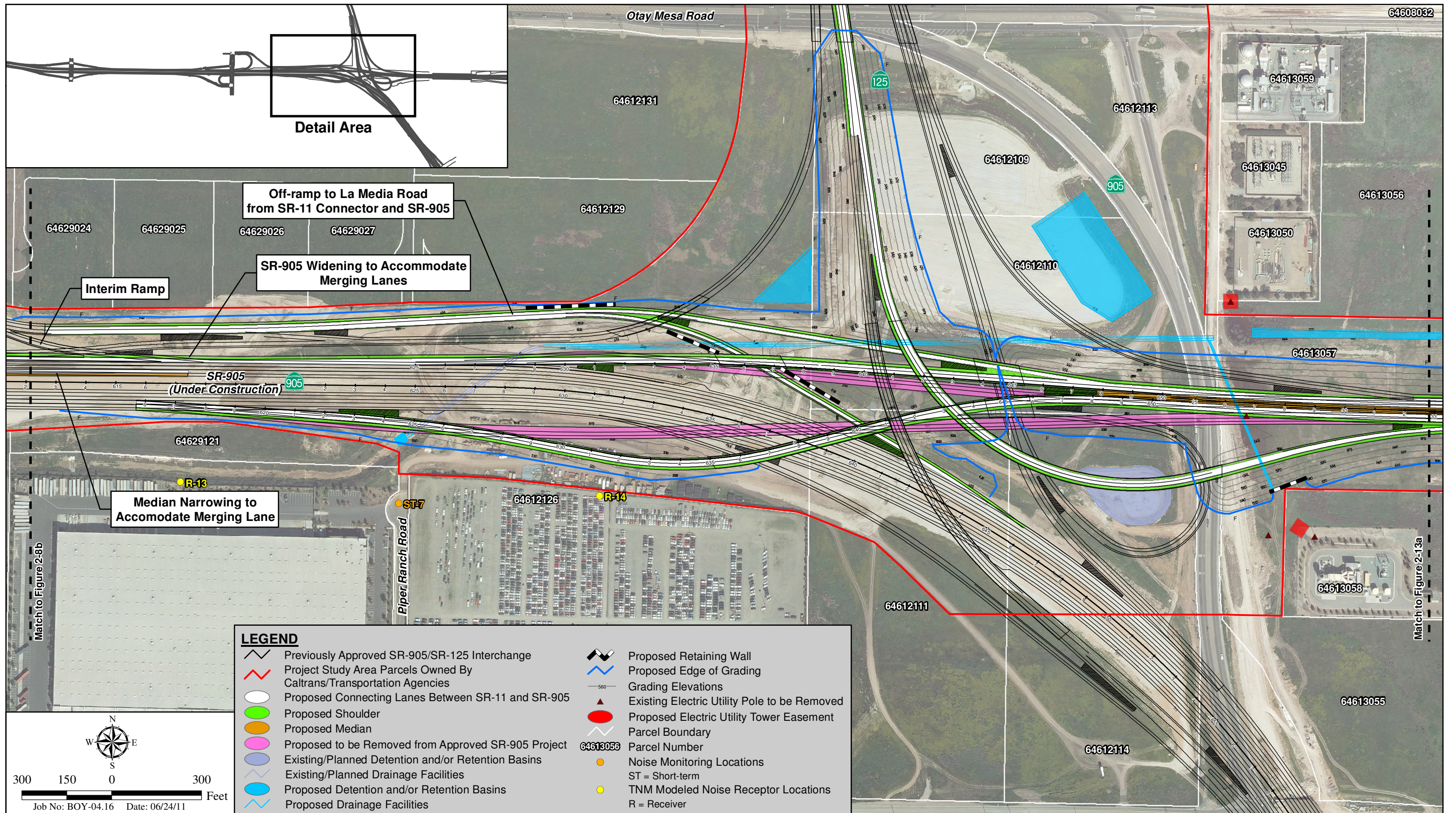
Figure 2-8a



Major Project Features West of SR-905/SR-125/SR-11 Interchange (Preferred Alternative)

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

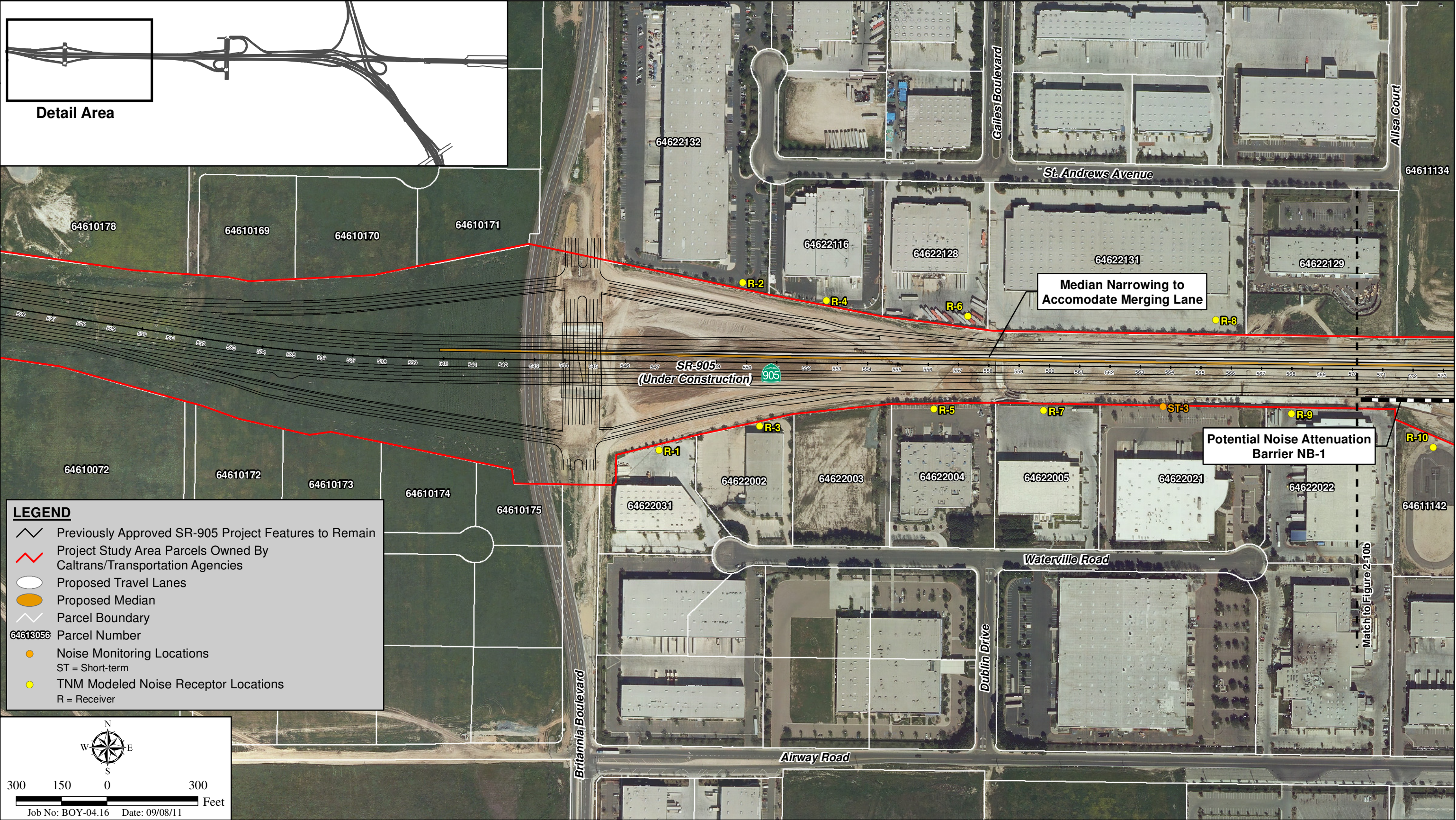
Figure 2-8b



SR-905/SR-125/SR-11 Interchange (Preferred Alternative)

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

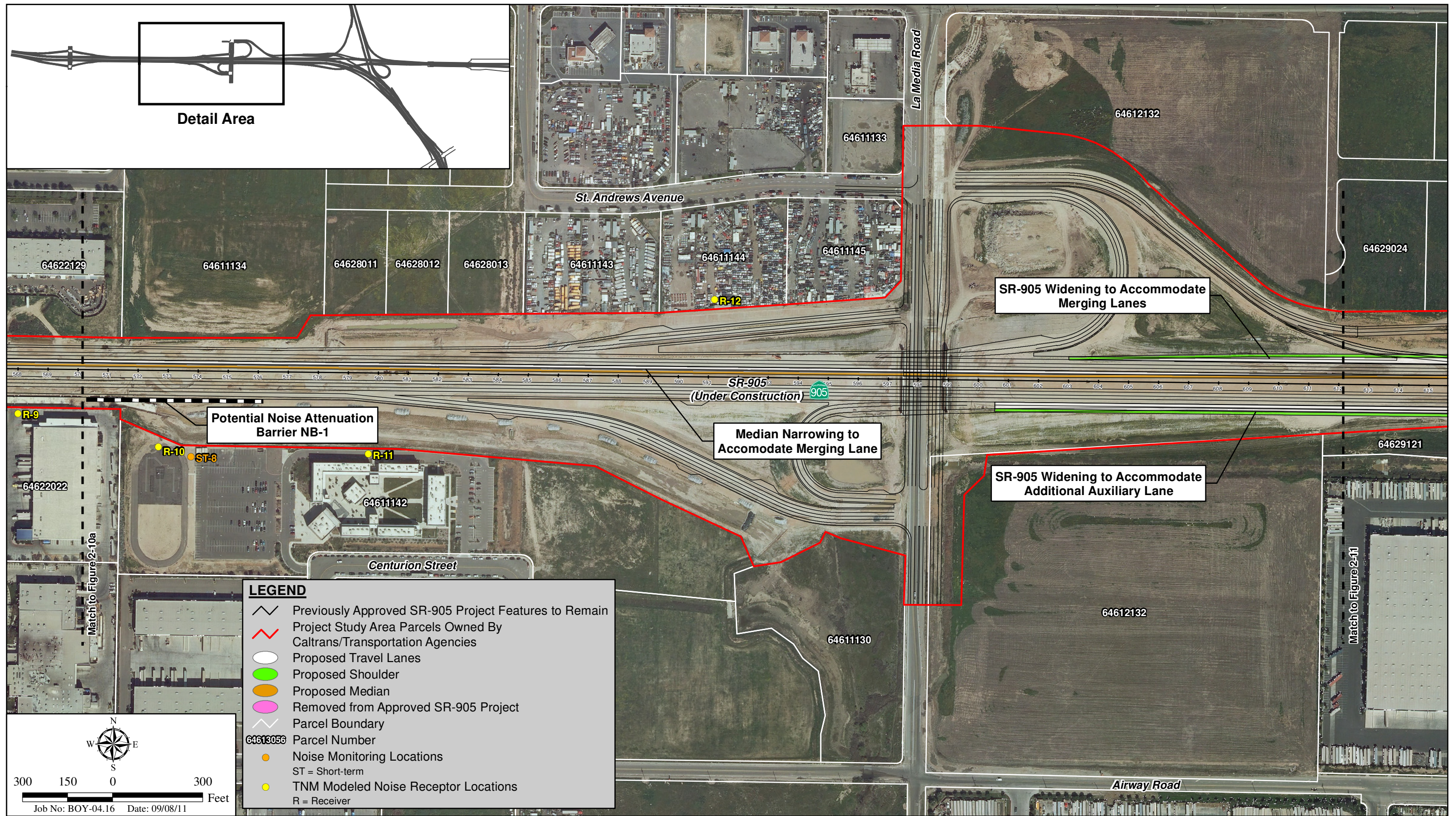
Figure 2-9



Major Project Features West of SR-905/SR-125/SR-11 Interchange (All Draft EIR/EIS Build Alternatives)

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

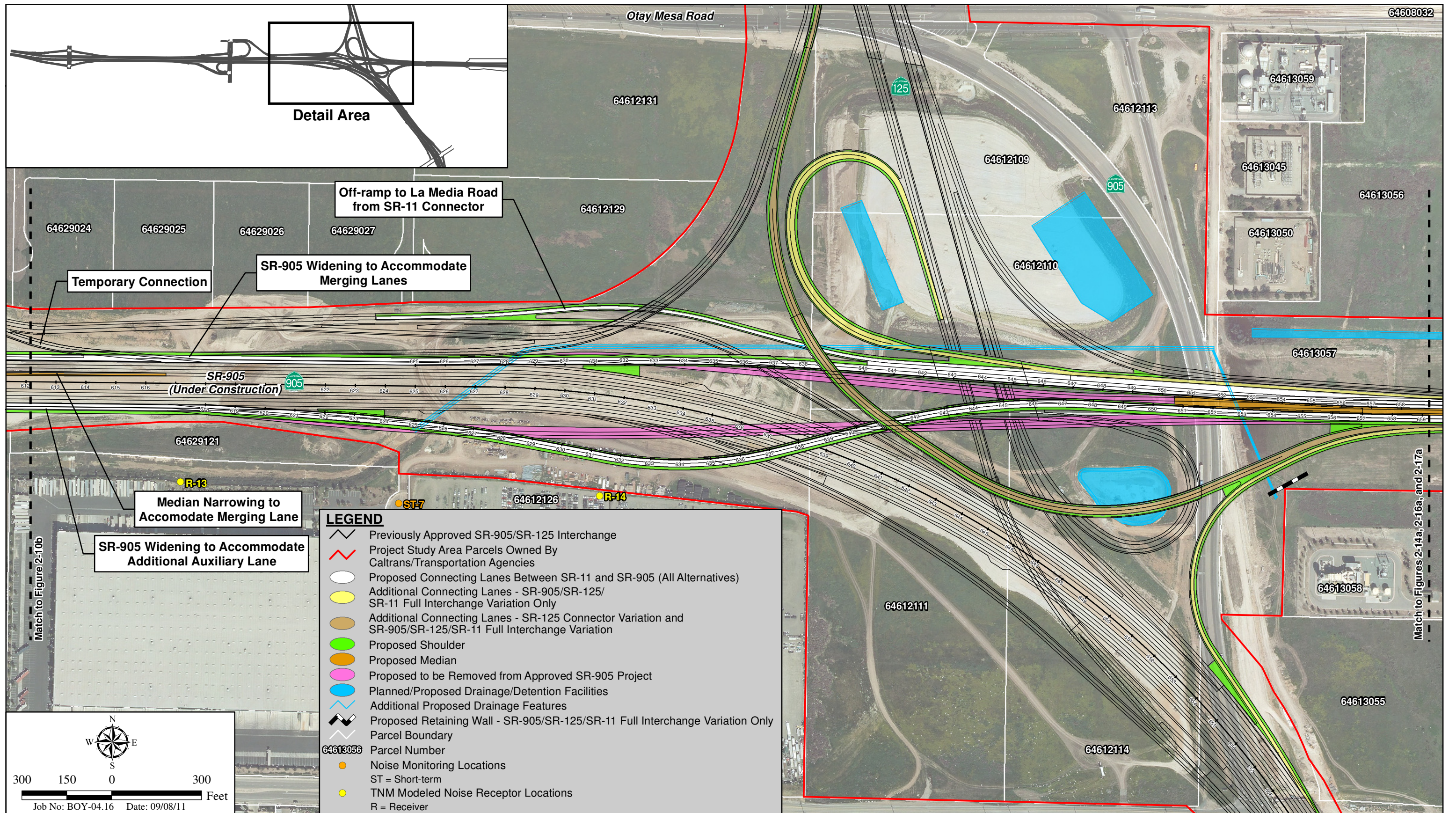
Figure 2-10a



Major Project Features West of SR-905/SR-125/SR-11 Interchange (All Draft EIR/EIS Build Alternatives)

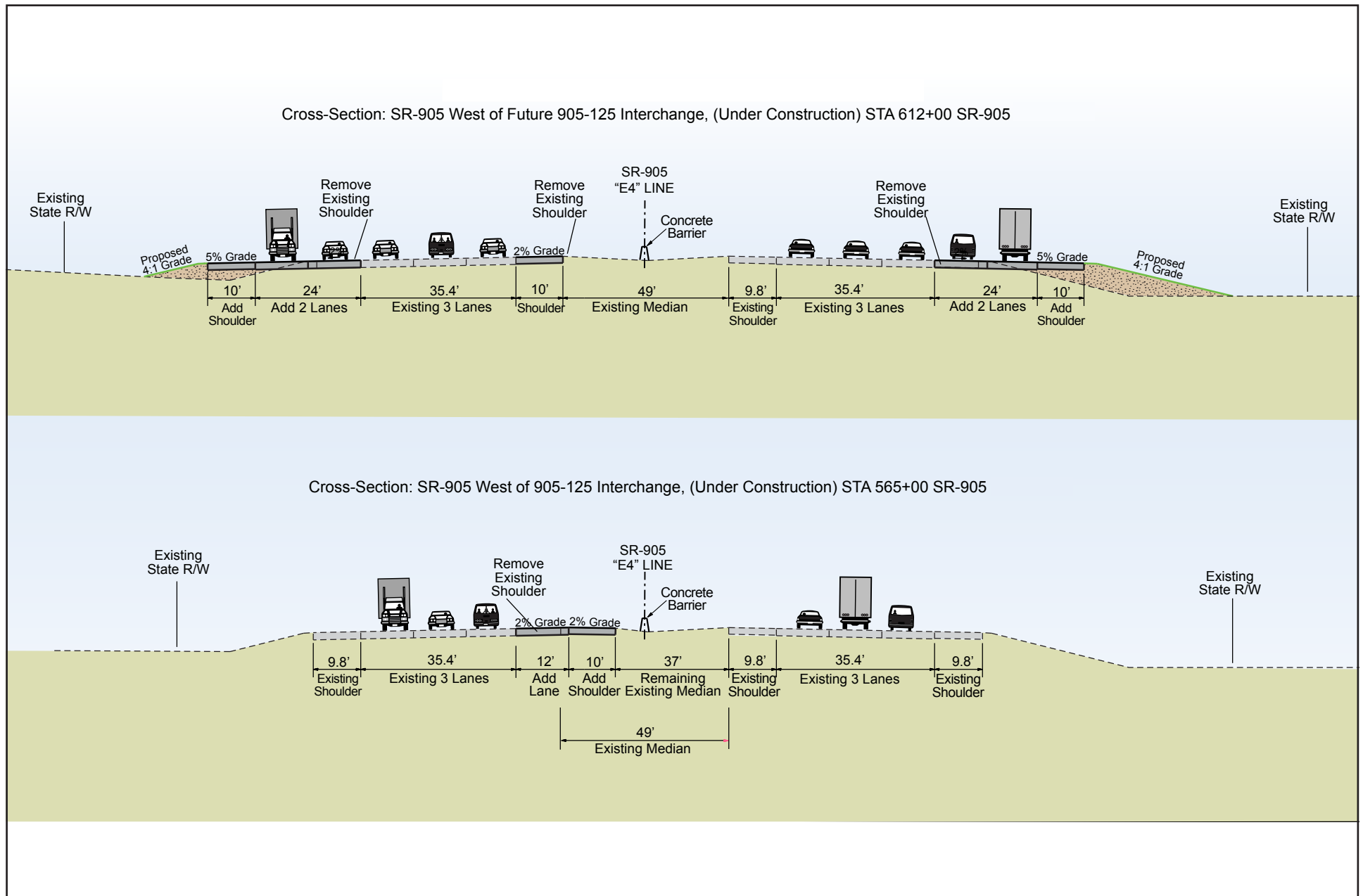
STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

Figure 2-10b



SR-905/SR-125/SR-11 Interchange and Variations (All Draft EIR/EIS Build Alternatives)

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

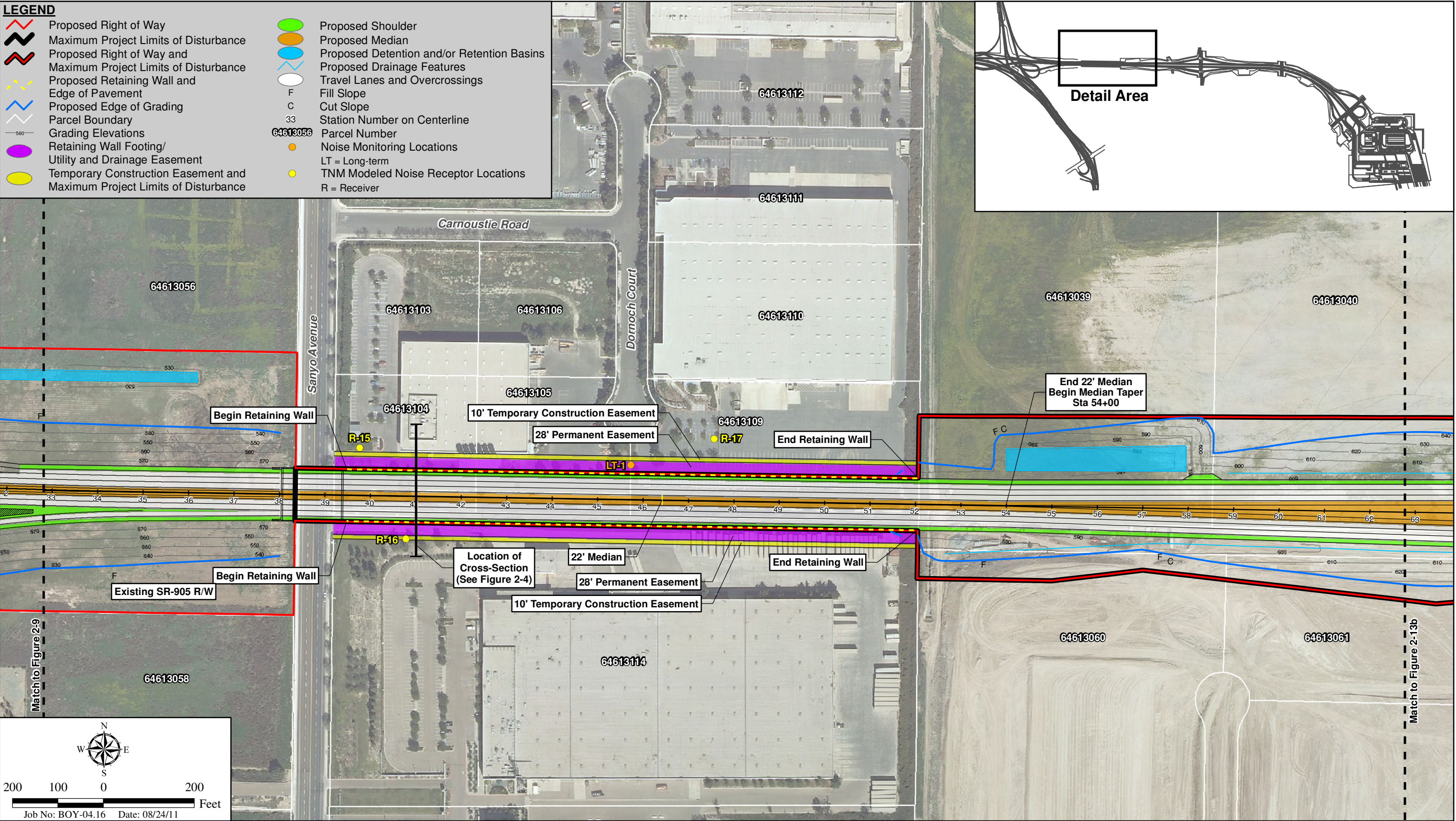


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Cross-Sections of SR-905 Modifications Under All Build Alternatives

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

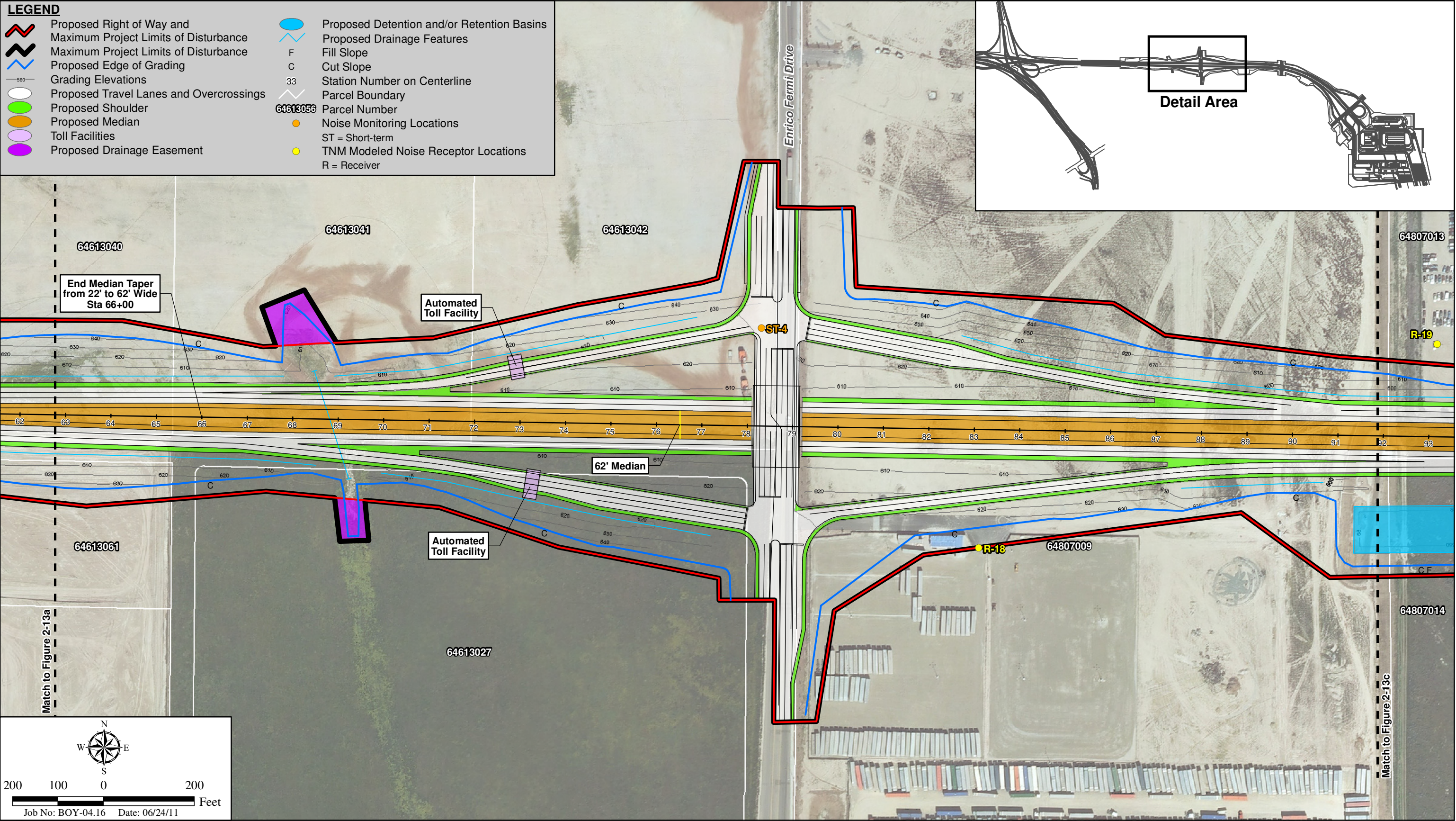
Figure 2-12



Preferred Alternative - Major Project Features Sheet A

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

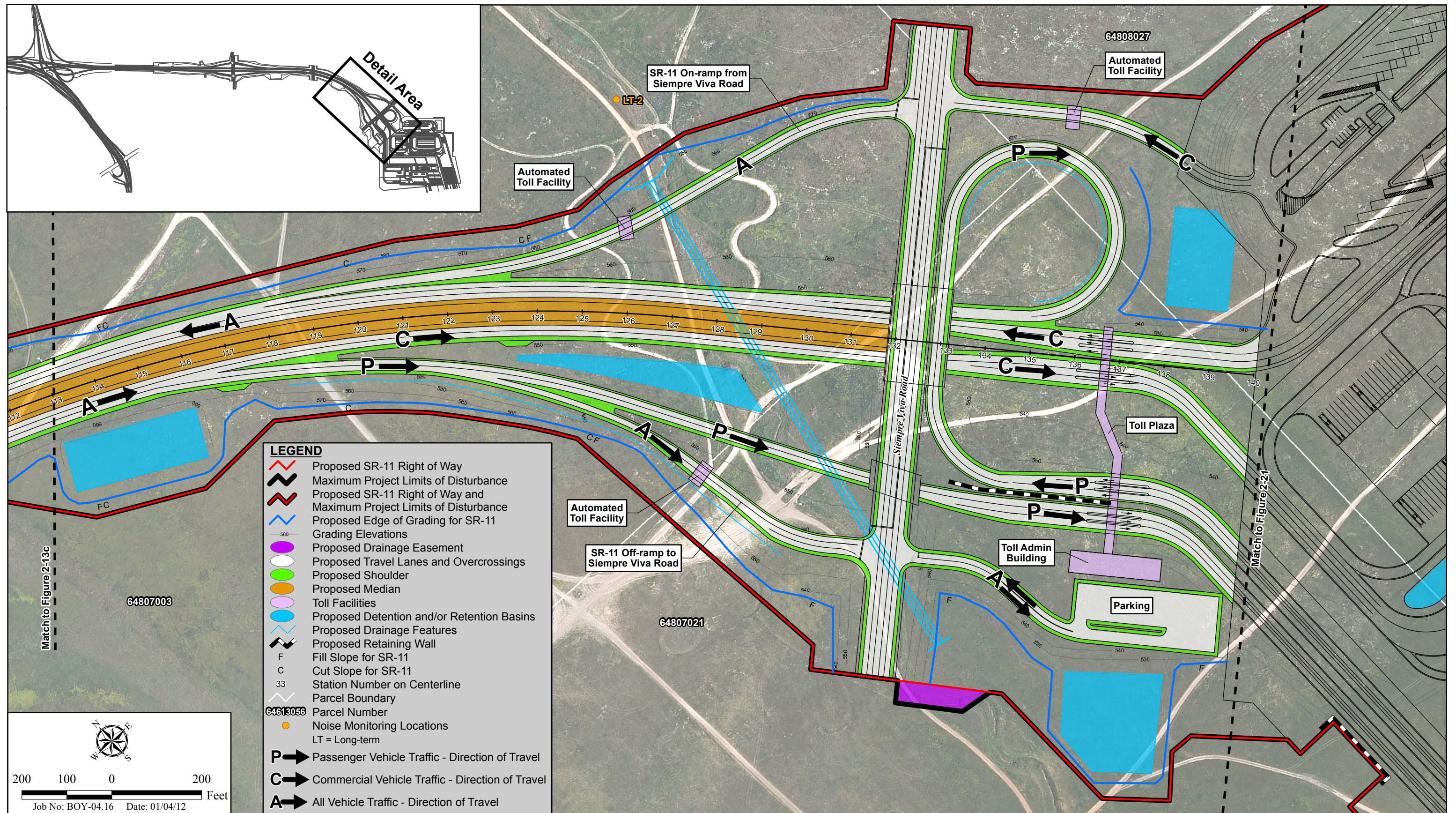
Figure 2-13a



Preferred Alternative - Major Project Features Sheet B

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

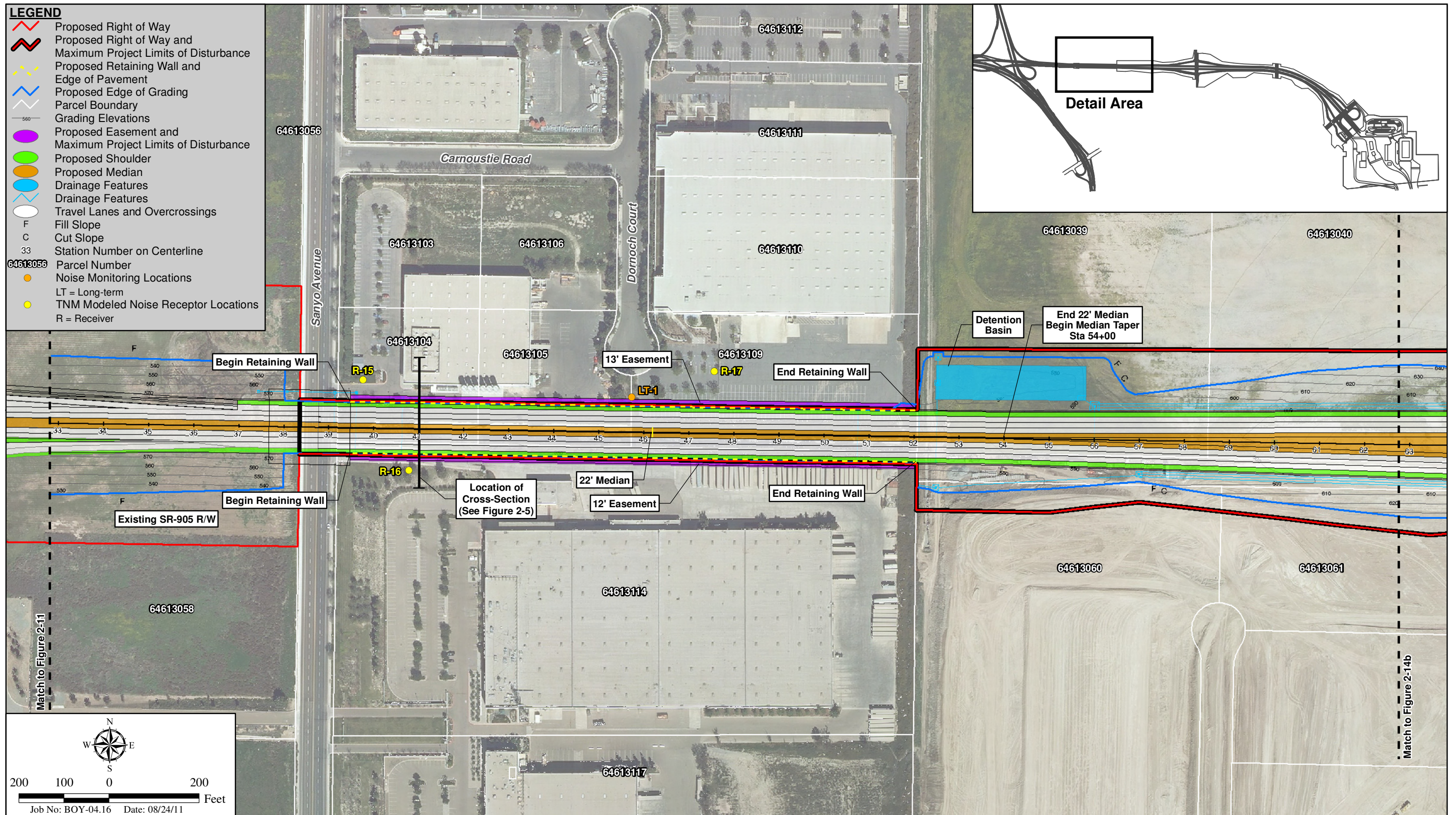
Figure 2-13b



Preferred Alternative - Major Project Features Sheet D

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

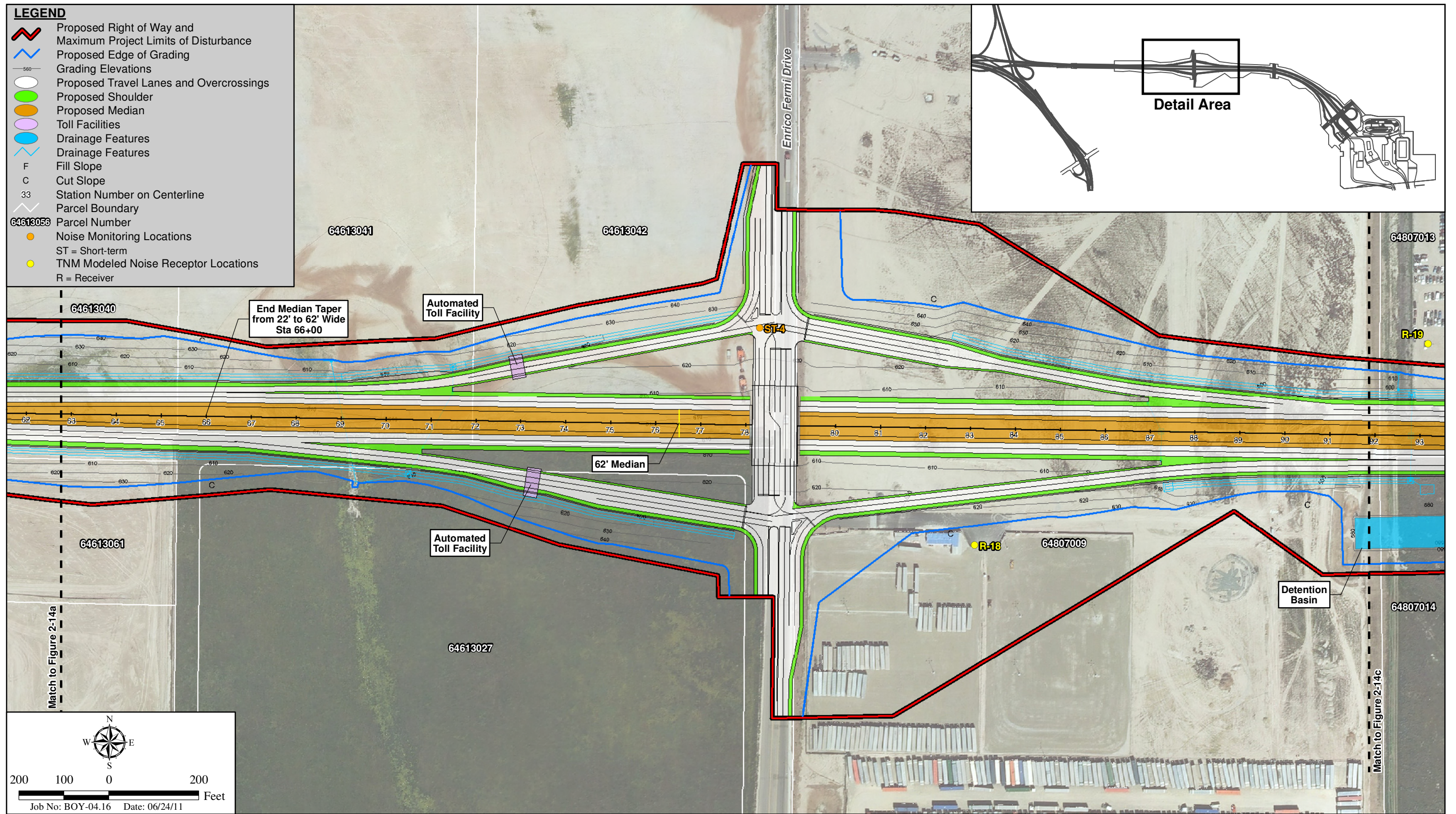
Figure 2-13d



Two Interchange Alternative - Major Project Features Sheet A

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

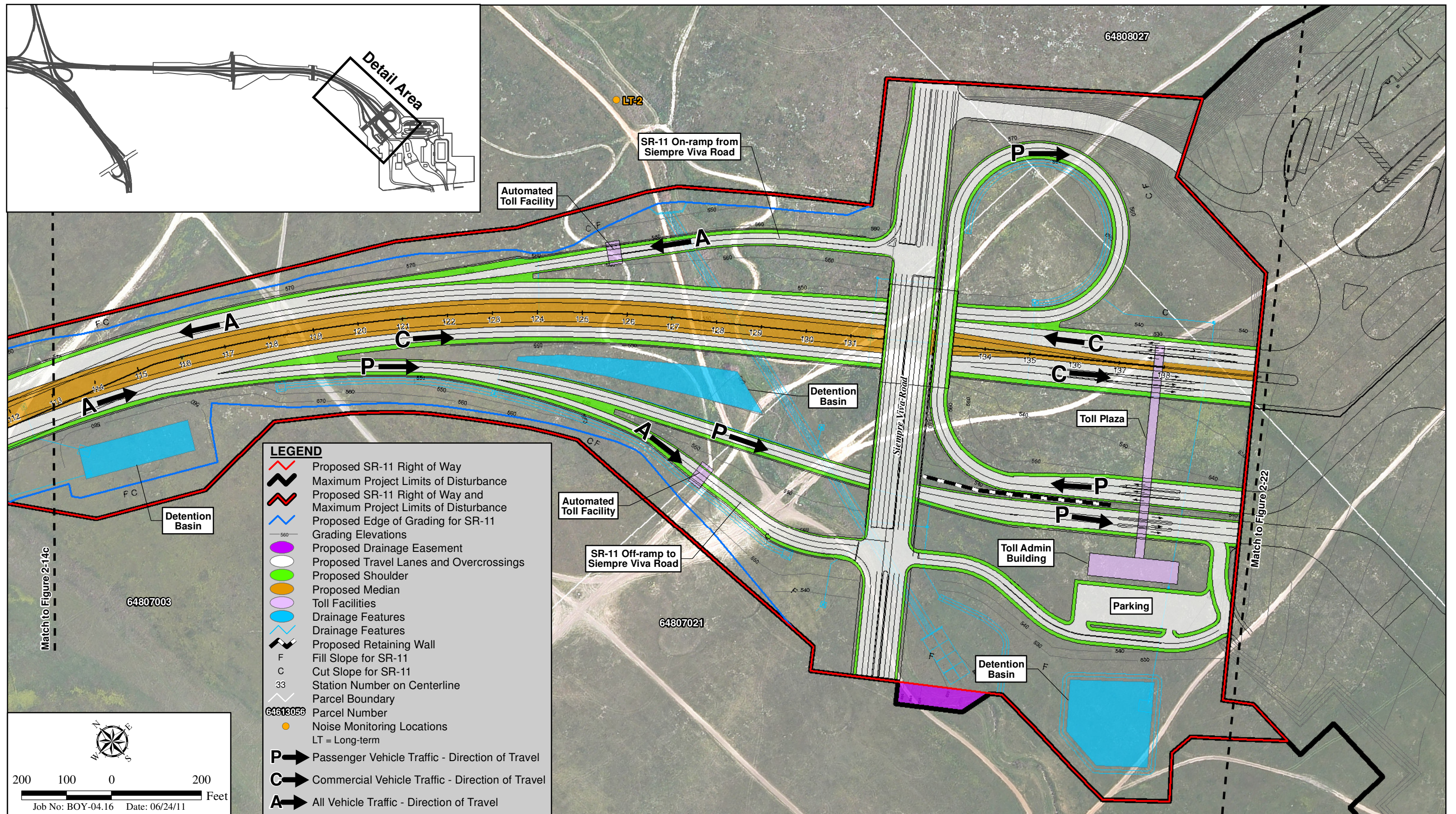
Figure 2-14a



Two Interchange Alternative - Major Project Features Sheet B

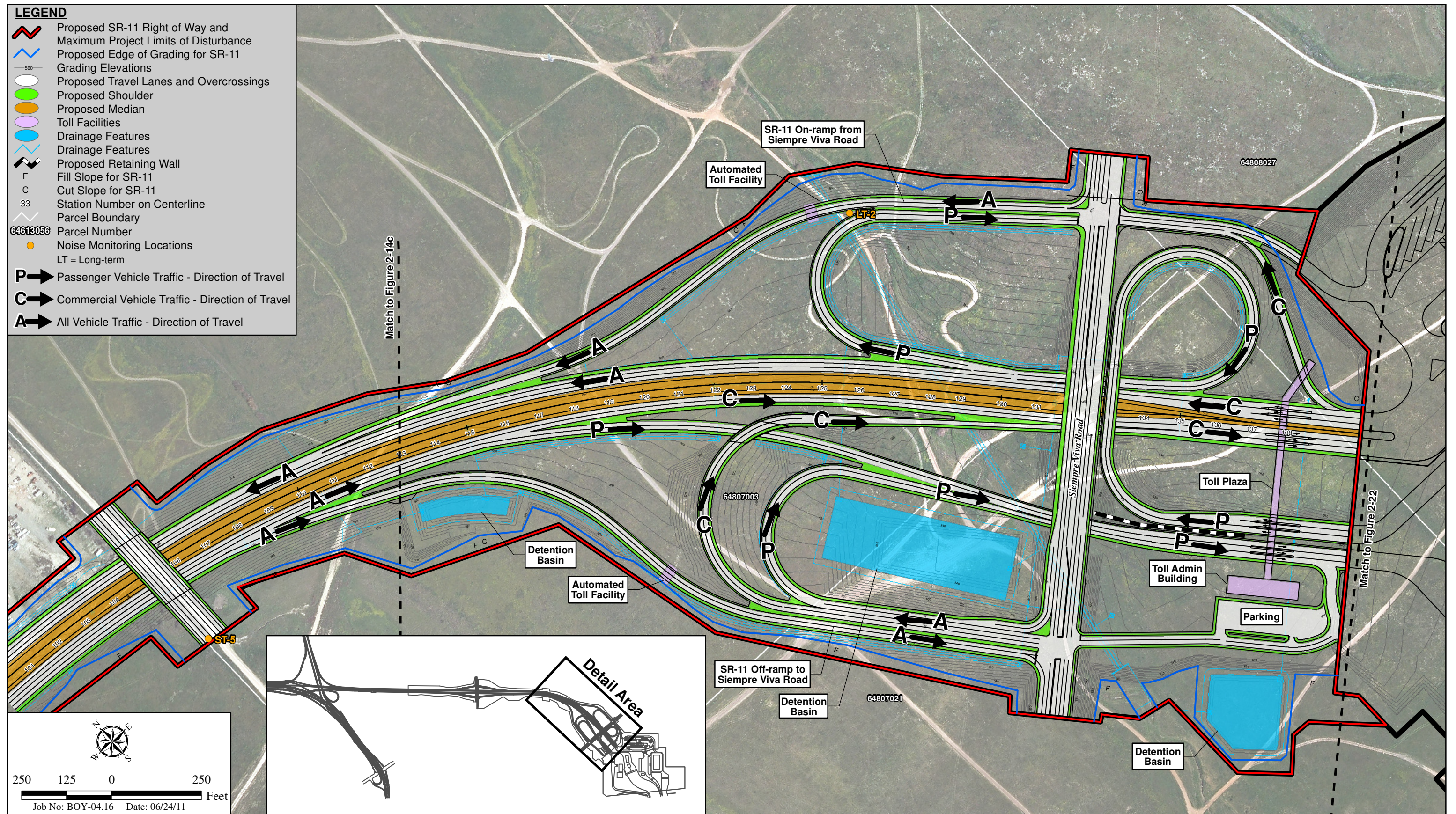
STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

Figure 2-14b



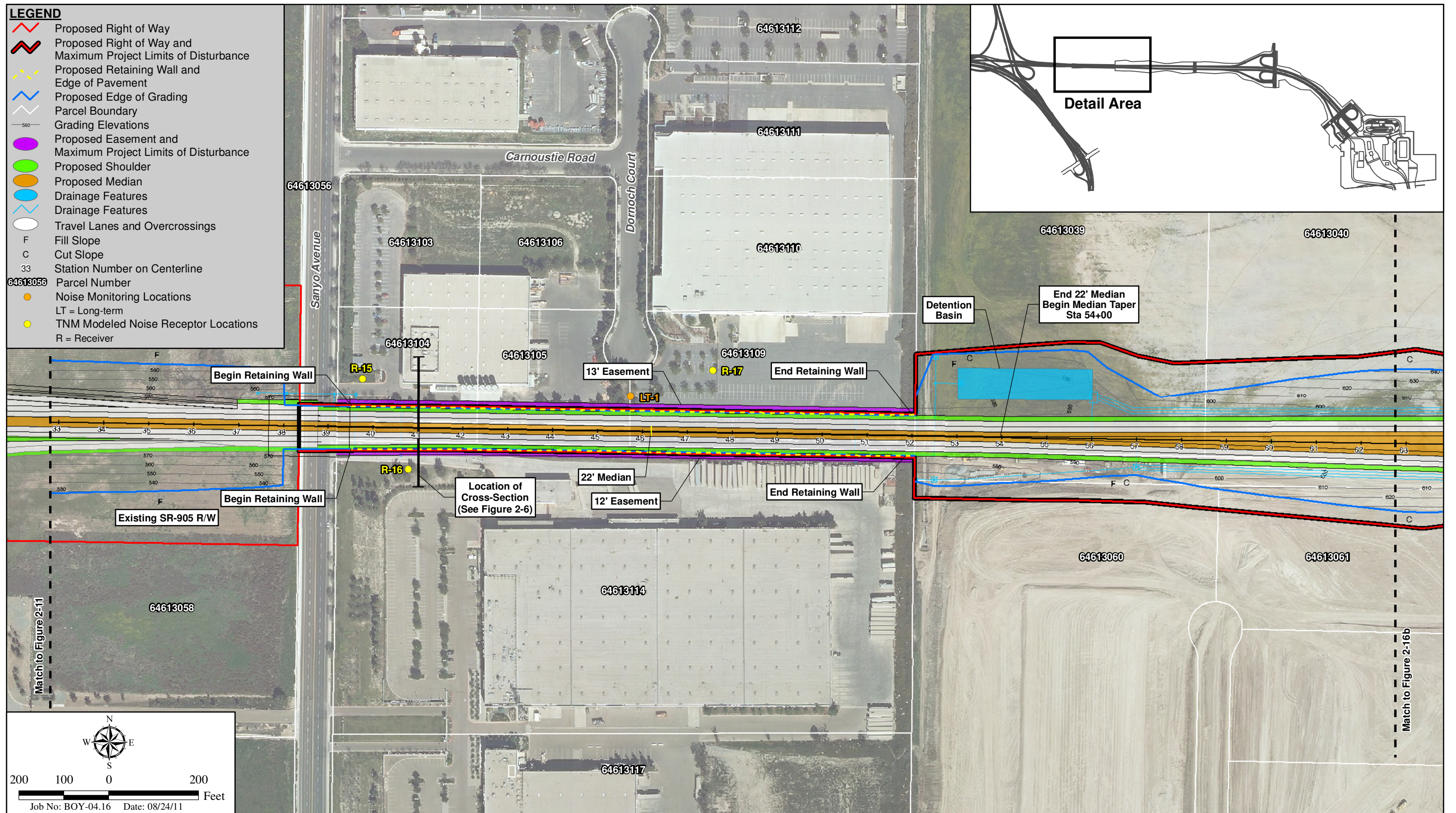
Two Interchange Alternative - Major Project Features Sheet D

Figure 2-14d



Siempre Viva Road Full Interchange Variation of the Two Interchange Alternative

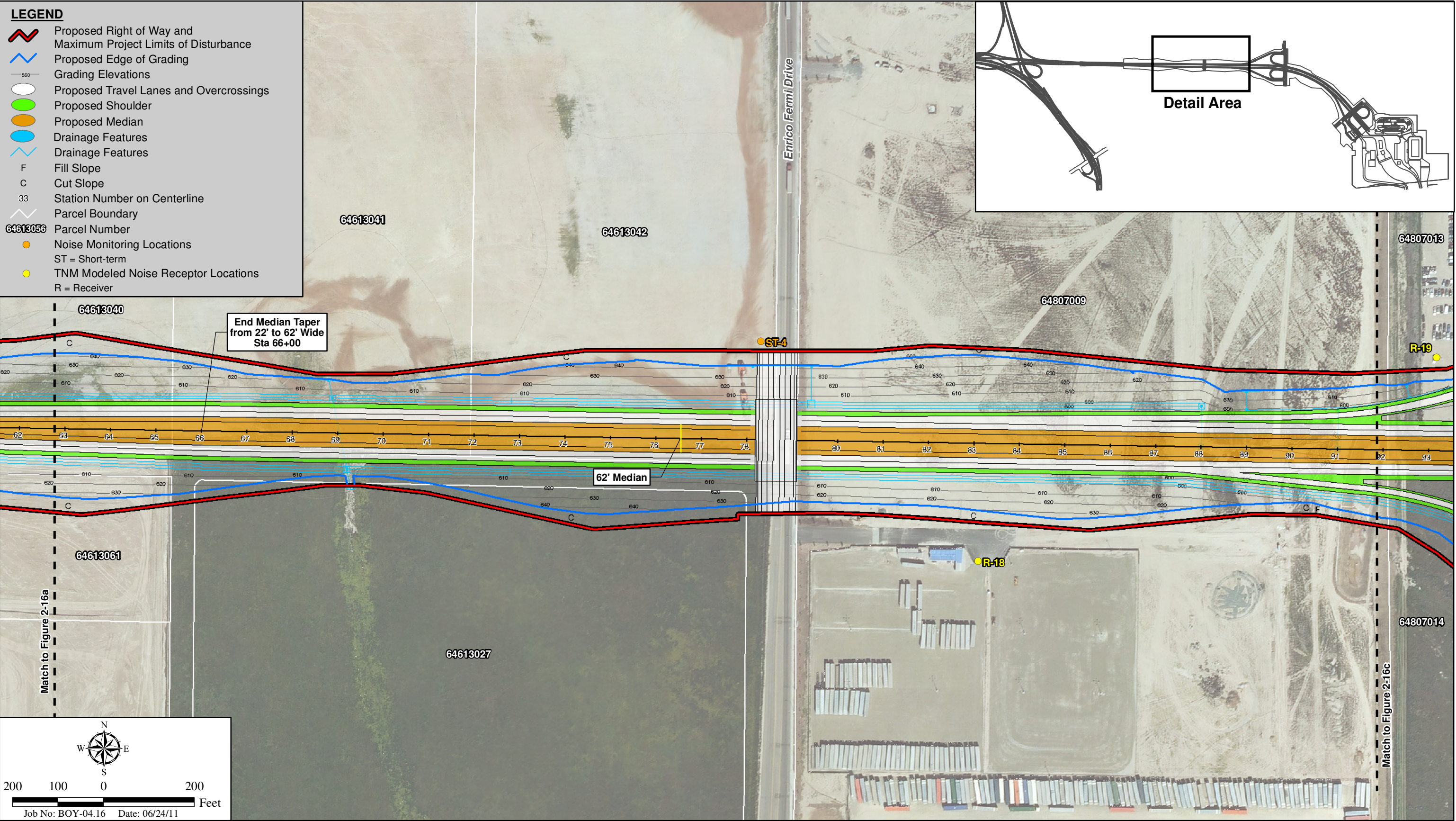
STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS



One Interchange Alternative - Major Project Features Sheet A

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

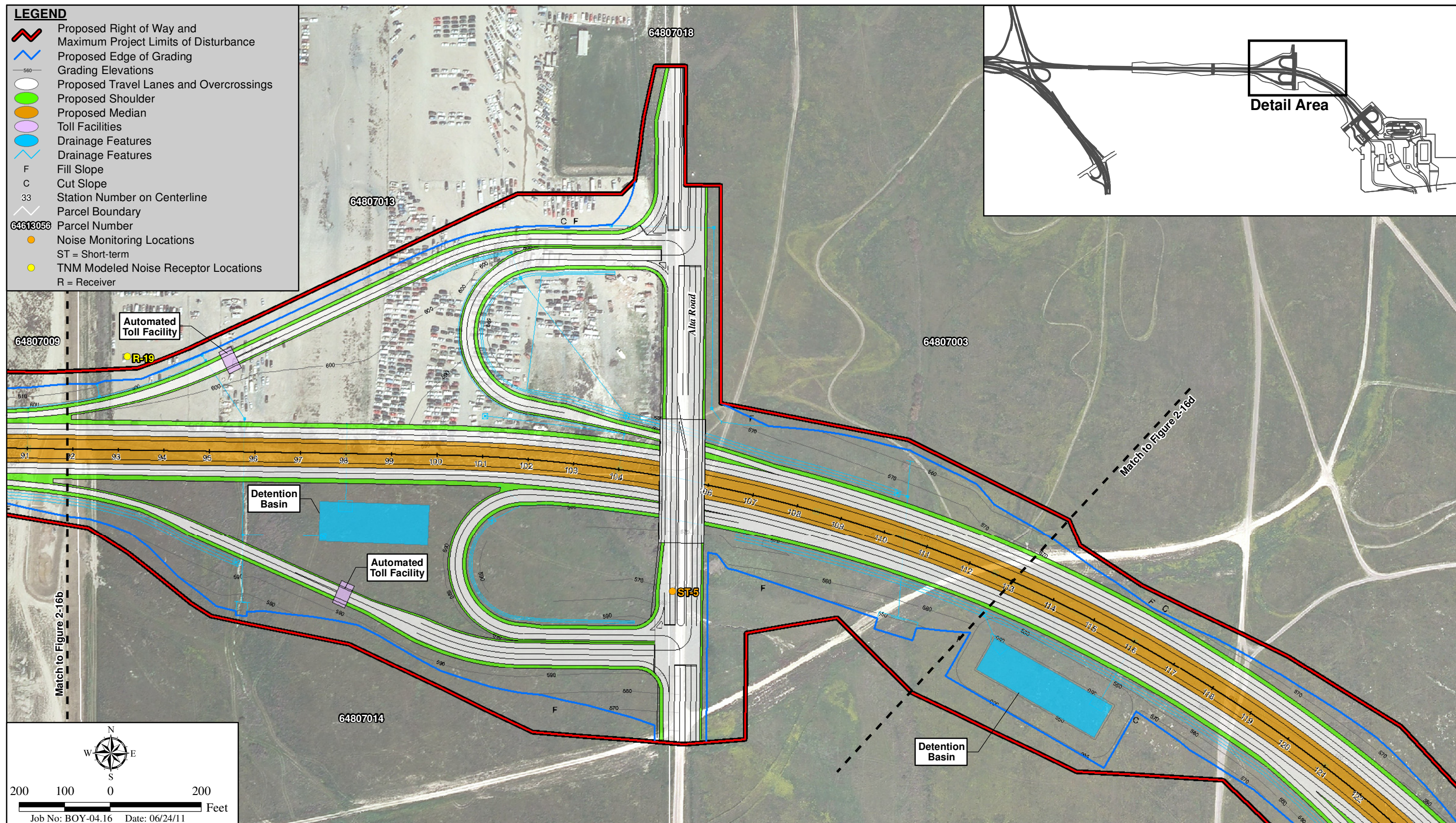
Figure 2-16a



One Interchange Alternative - Major Project Features Sheet B

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

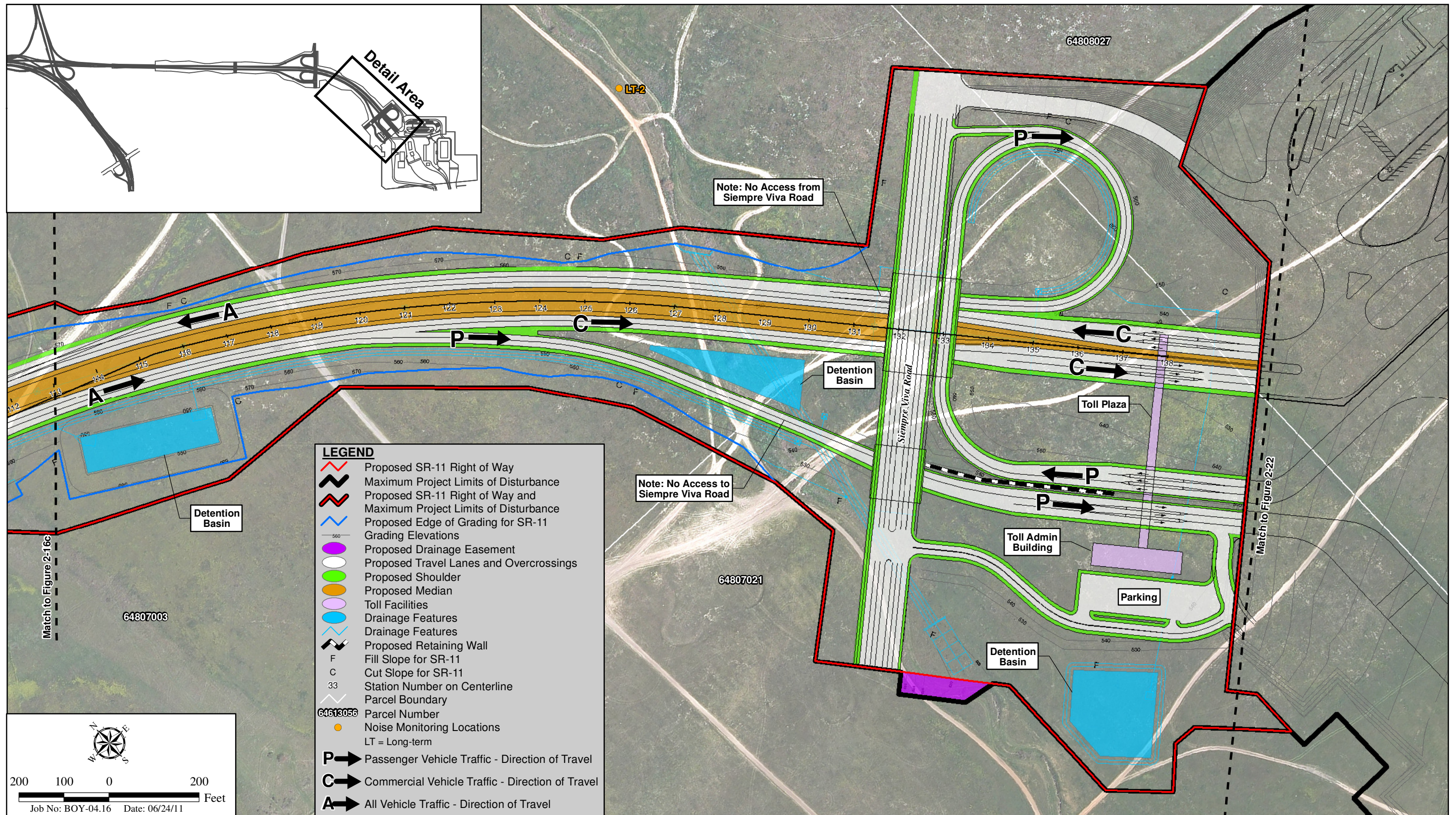
Figure 2-16b



One Interchange Alternative - Major Project Features Sheet C

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

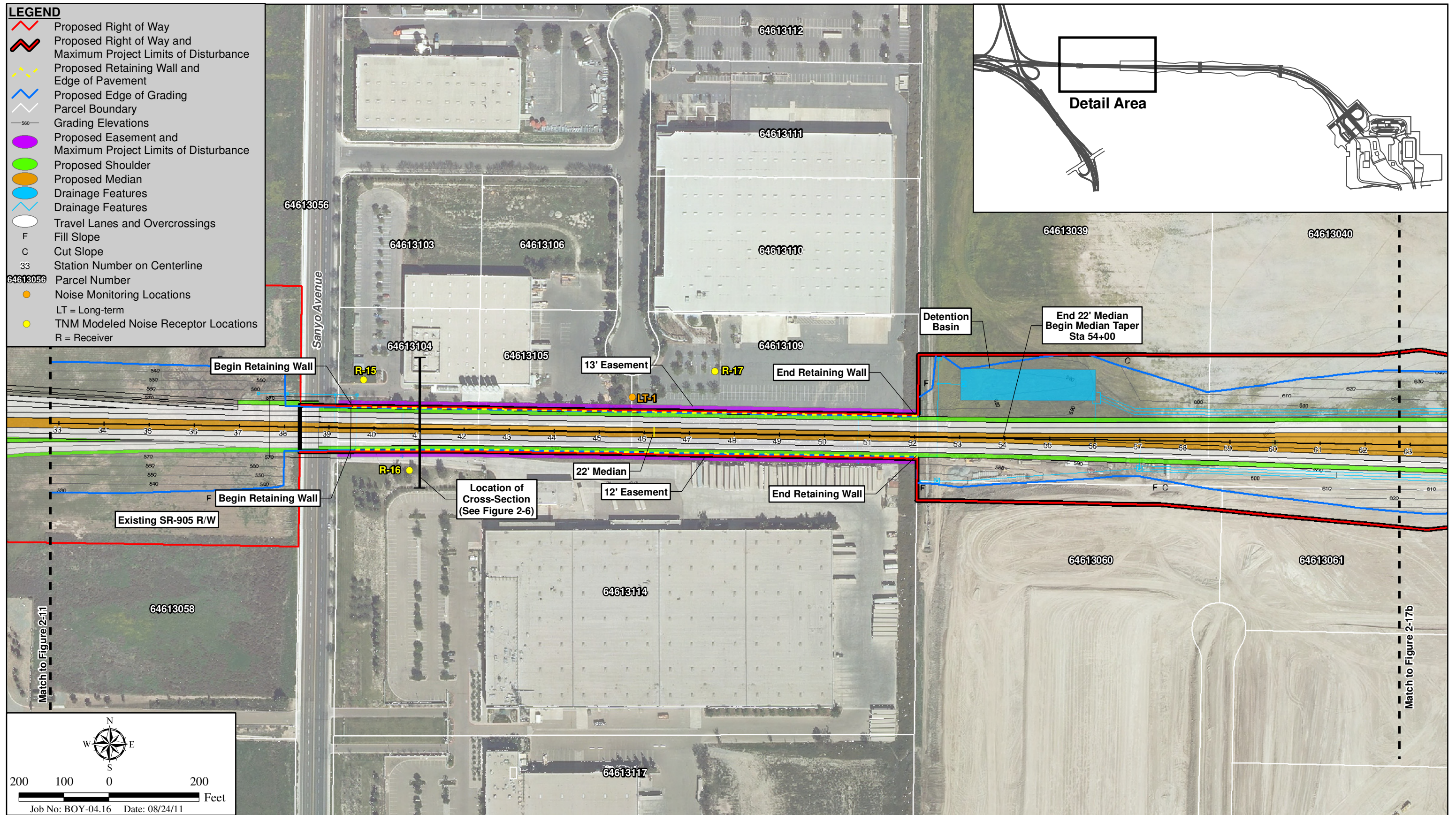
Figure 2-16c



One Interchange Alternative - Major Project Features Sheet D

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

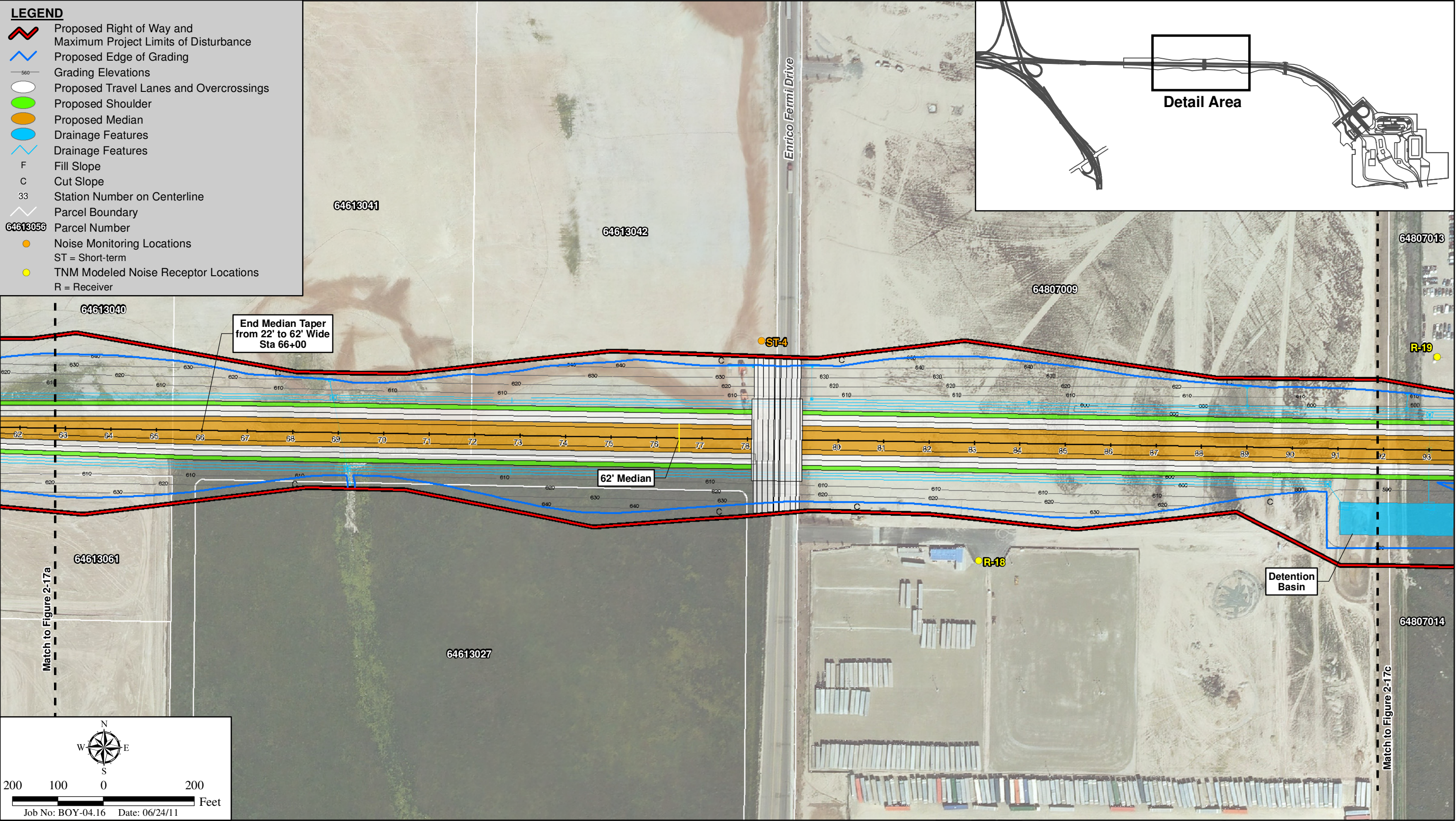
Figure 2-16d



No Interchange Alternative - Major Project Features Sheet A

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

Figure 2-17a

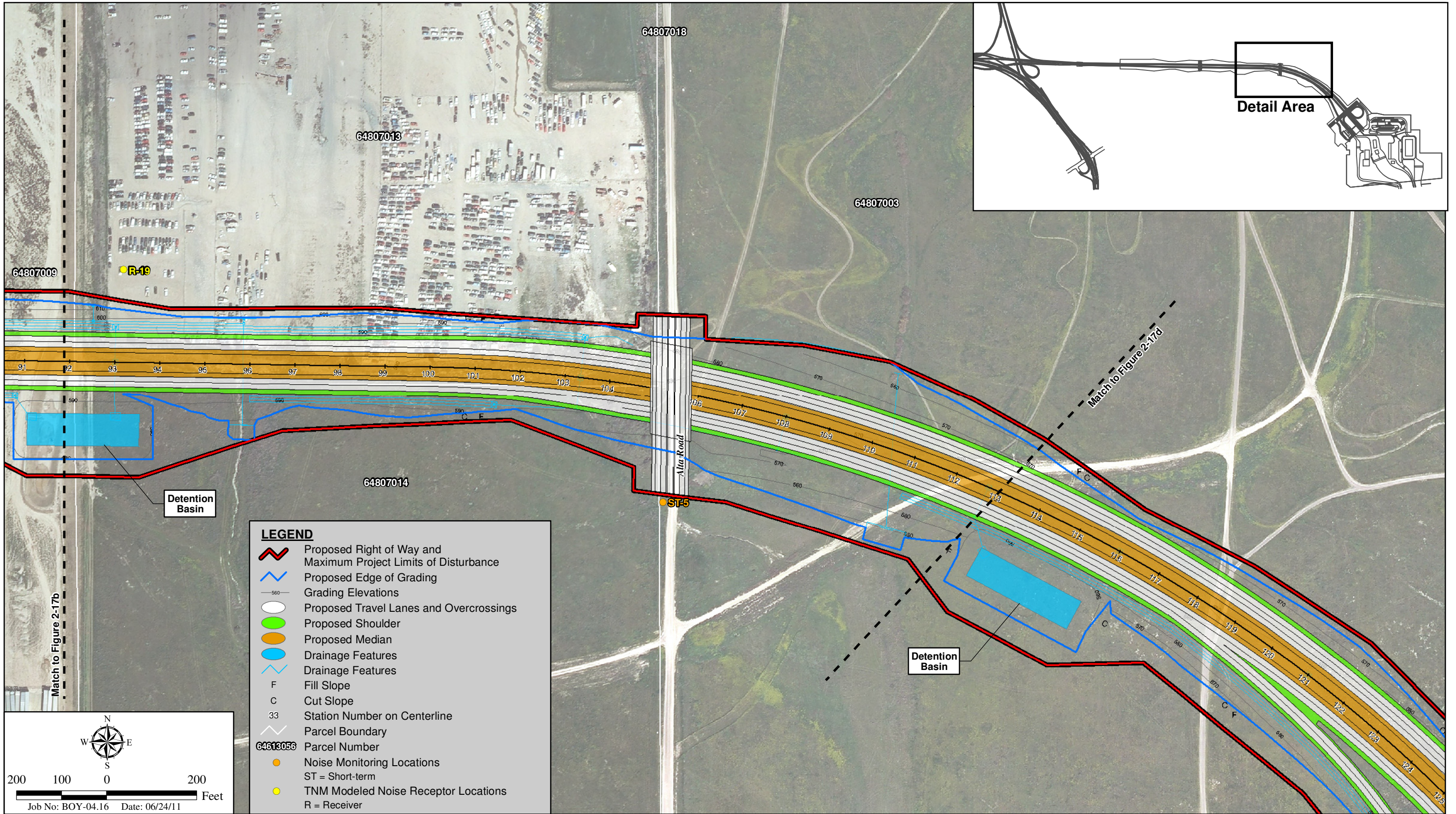


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No Interchange Alternative - Major Project Features Sheet B

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

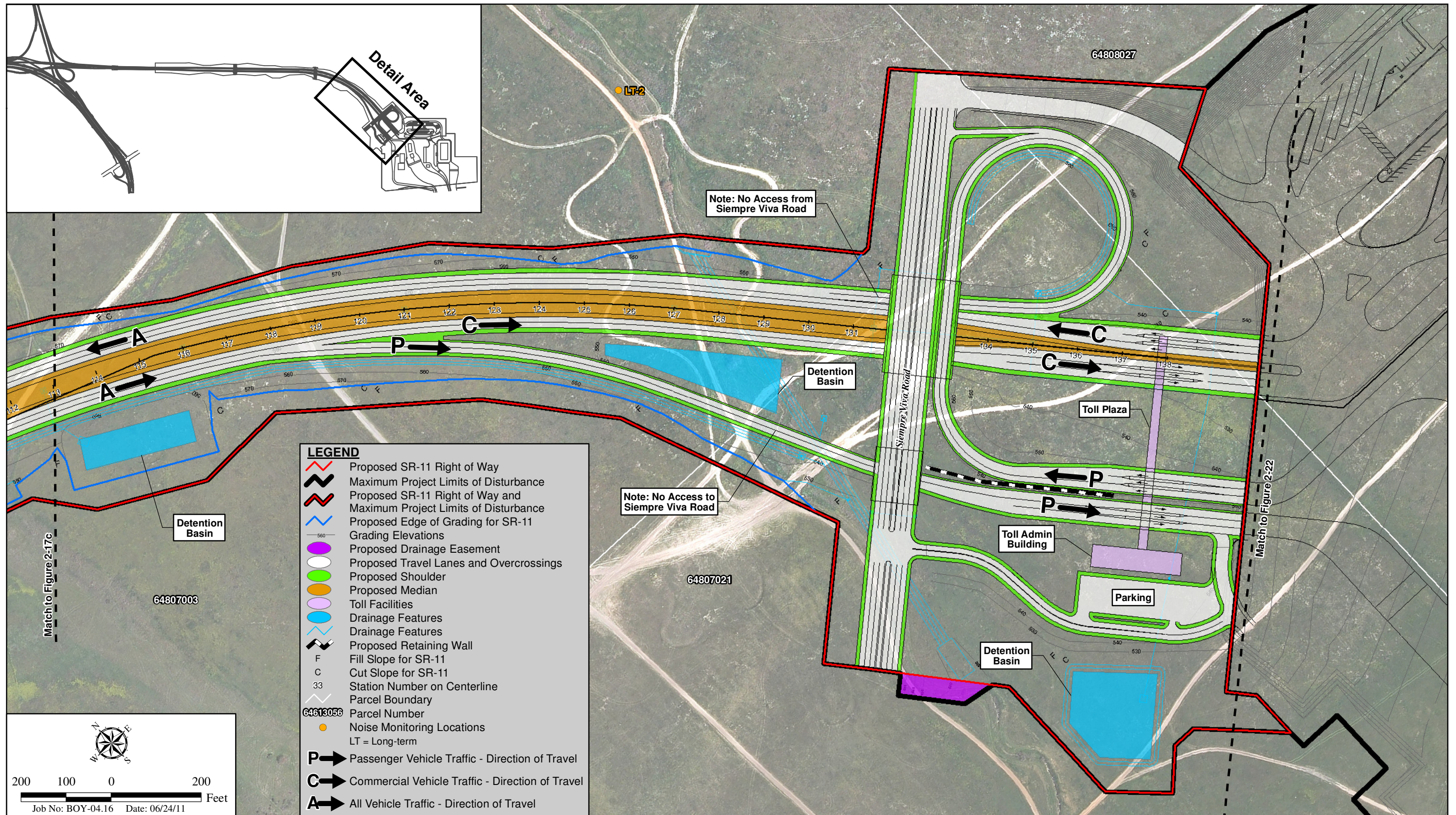
Figure 2-17b



No Interchange Alternative - Major Project Features Sheet C

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

Figure 2-17c



No Interchange Alternative - Major Project Features Sheet D

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

Figure 2-17d



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Typical Electronic Toll Collection Facilities

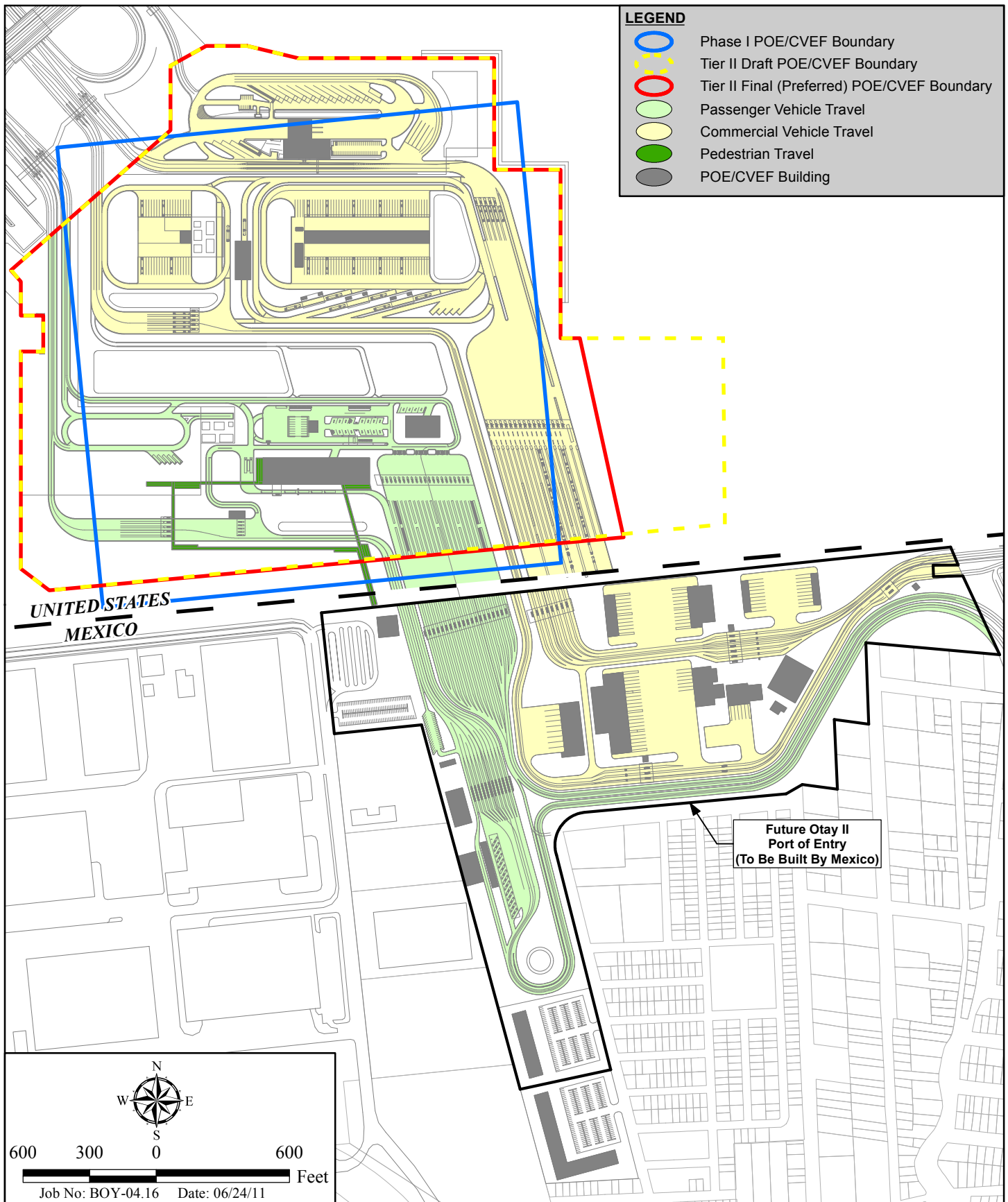
STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

Figure 2-18



Updated Conceptual Layout of Mexican Otay II POE

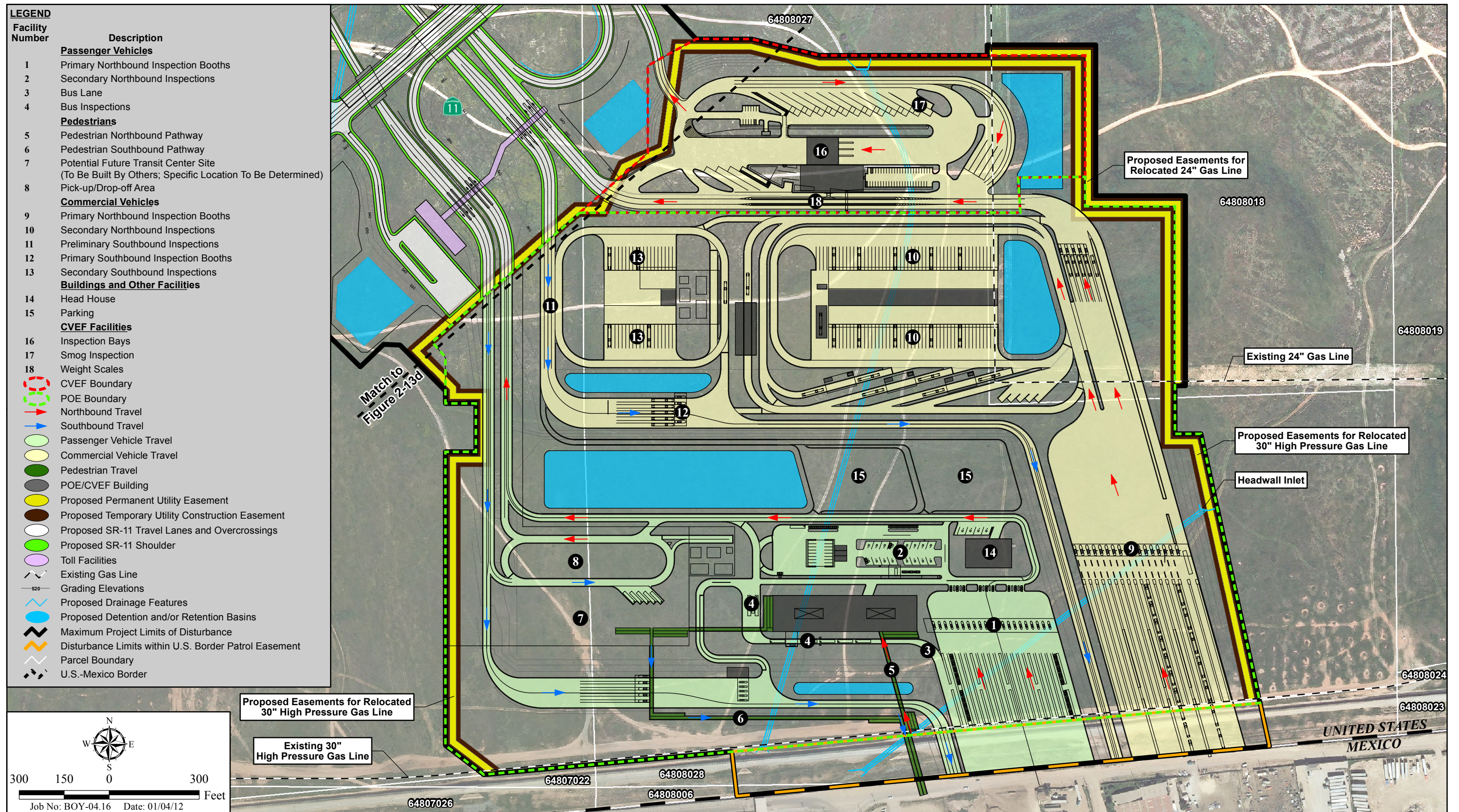
STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS



Comparison of POE/CVEF Footprints

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

Figure 2-20



Preferred Alternative Conceptual Layout of the Otay Mesa East POE and CVEF

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

Figure 2-21



Draft EIR/EIS Conceptual Otay Mesa East POE and CVEF Layout

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

Figure 2-22



Chapter 3
**Affected Environment;
Environmental
Consequences; and
Avoidance, Minimization
and/or Mitigation Measures**

CHAPTER 3.0 – AFFECTED ENVIRONMENT; ENVIRONMENTAL CONSEQUENCES; AND AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

A series of technical studies was prepared to support this Final EIR/EIS. These technical studies were available for review during the public review period at Caltrans District 11 offices at 4050 Taylor Street, Building 1 – Main Lobby, San Diego, CA 92110, and at the Imperial Beach, Bonita-Sunnyside and Otay Mesa-Nestor branches of the San Diego County Library. Appendix C contains a list of all technical studies supporting this Final EIR/EIS.

As part of the Tier II scoping and environmental analysis conducted for the project, the following environmental issues were considered but no adverse impacts were identified. Consequently, there is no further discussion regarding these issues in this document.

U.S. Department of Transportation - Section 4(f) Resources: Section 4(f) of the DOT Act of 1996 declares that “[it] is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites.” An analysis was undertaken to determine whether the project has potential to pose impacts to Section 4(f) resources and is contained in Appendix D to this Final EIR/EIS. In Appendix D, the fitness track at the Southwestern College Higher Education Center was evaluated for potential effects to a Section 4(f) resource. It was determined that, because the track is available only for student/team use and not open to the public, it does not qualify for protection under Section 4(f). The analysis in Appendix D concludes that the proposed project would not impact publicly owned land of a public park, recreation area or wildlife and waterfowl refuge of national, state, or local significance, or land of an historic site of national, state, or local significance (Caltrans 2007b).

Farmland: The majority of the study area, which would include the Preferred Alternative, was no longer used for agriculture by the early 1980s, with all agricultural use terminated by 1990. There are no Williamson Act contract lands or agricultural preserves within the study area for all build alternatives, including the Preferred Alternative. For projects where farmland may be affected, the Natural Resources Conservation Service (NRCS) requires the completion of the appropriate Farmland Conversion Impact Rating Form (pursuant to the Farmland Policy Protection Act [FPPA]), based on the underlying soil profile, regardless of surface development (i.e., even in developed areas). A Farmland Conversion Impact Rating assessment (Form NRCS-CPA-106) was submitted to the NRCS on July 30, 2010 for the Draft EIR/EIS build alternatives. A reply was received from the NRCS, dated September 3, 2010, and the information received is reflected in Appendix E.1a. The associated Form NRCS-CPA-106 (Form 106) in Appendix E.1a includes a quantified point subtotal generated by the NRCS based on important farmland designations (Part IV), as well as a point subtotal generated by the applicant agency based on “corridor assessment criteria” such as surrounding land use and local agricultural operations and services (Part VI). Part VII of the project Form 106 (which includes point subtotals from Parts IV and VI as described) indicates that the Two Interchange Alternative (Corridor A on Form 106) would have 69.2 total points, the One Interchange Alternative (Corridor B on Form 106) would have 69.4 total points, and the No Interchange Alternative (Corridor C on Form 106) would have 69.6 total points out of a possible 260 points. A separate Form 106 for the Preferred Alternative was submitted to the NRCS on August 18, 2011, with a reply received on September 6, 2011. The Preferred Alternative Form 106 is included as Appendix E.1b, and identifies a total point score of 70.2. The NRCS “threshold score” identified for Form 106 is 160 points. For scores of 160 points or more, the FPPA “...recommends the agency consider alternative actions, as appropriate, that could reduce adverse impacts (e.g., Alternative Sites).” Accordingly, scores of less than 160 total points do not entail any such alternative analysis and are therefore not considered substantial. Because the total project scores range between

69.2 (Two Interchange Alternative) and 70.2 points (Preferred Alternative) as noted, implementation of any of the identified project alternatives would not substantially affect farmland.

Timberlands: The project site is not located within a Timber Production Zone. Implementation of the Project would not substantially affect timberlands.

Wild and Scenic Rivers/Coastal Zone Areas: The project site is neither located near wild and scenic rivers nor within a coastal zone area.

Parks and Recreational Services: All parks and recreational facilities are located at least one mile from the proposed project and would therefore not be impacted. The proposed project would not impact a publicly owned, Section 4(f) park, preserve or recreational facility under any of the project alternatives or variations. The project also would not generate an increase in demand for parks or recreational facilities.

HUMAN ENVIRONMENT

3.1 EXISTING AND FUTURE LAND USE

This section of the Final EIR/EIS assesses the potential for existing land use patterns and development trends within the study area to affect, or be affected by, implementation of the proposed project. A Community Impact Assessment (CIA; HELIX/CIC Research 2010) was completed for the proposed project, and an Addendum to the Tier II CIA (CIC Research 2011) was submitted to address potential socioeconomic impacts of the Preferred Alternative. The CIA analyzes characteristics of existing and future land use and community characteristics; these documents are the basis of the information presented in this section, as well as in Sections 3.2, *Consistency with Federal, State, Regional and Local Plans and Programs*; 3.3, *Growth*; 3.4, *Community Character and Cohesion*; 3.5, *Relocations and Real Property Acquisition*; and 3.6, *Environmental Justice*.

The land use study area evaluated in the CIA and in this Final EIR/EIS extends from just north of Otay Mesa Road south to the U.S. - Mexico international border; and from just east of the Sempra Energy easement, near the base of the San Ysidro Mountains, to just west of Britannia Boulevard along SR-905. The land use study area is depicted in Figure 3.1-1, *Existing Land Uses in the Land Use Study Area*. SANDAG is the regional growth management agency for the San Diego area and is responsible for preparing demographic and economic statistics and regional growth forecasts. SANDAG's statistics are available at the subregional and census tract level, as well as for zip codes and community planning areas. The San Diego region is divided into seven Major Statistical Areas (MSAs), which are further subdivided into Subregional Areas (SRAs). The land use study area is located within the South Suburban MSA, SRA 22, near the boundary of the East Suburban MSA and SRA 30. More specifically, the project site is located in the southeast section of CT 100.15, which lies partially in the City, and partially in the County.

Unless otherwise indicated, references in this Final EIR/EIS to "the POE site," "the POE footprint" or "the POE limits of disturbance" are intended to include the proposed CVEF and sufficient space for a potential future transit center.

3.1.1 Affected Environment

Land Use Designations and Zoning

Approximately half of the proposed project area is located within the jurisdiction of the County. More specifically, the entirety of the proposed POE and CVEF sites and most of proposed SR-11 (except its connectors and associated modifications to SR-905) are located within the EOMSP area, which extends

northerly to Johnson and O'Neill canyons and easterly to the base of the San Ysidro Mountains. The westernmost portion of proposed SR-11, including the business park fronting on Sanyo Avenue, its connectors to SR-905, and the associated modifications to SR-905, are within the City of San Diego's OMCP area.

County of San Diego

The County portions of the project would be located in the EOMSP Area. EOMSP land use designations were developed with the expectation that SR-11 and the POE would be implemented to support the anticipated growth in the area, and are consistent with the goals and policies of the Regional Land Use Element and Otay Subregional Plan of the County's General Plan. SR-11 and the Otay Mesa East POE are identified on the EOMSP and County Circulation Plans in the approximate locations of the corridor that was selected in Phase I for the project.

The western portion of SR-11 that would fall within the County passes through land designated Technology Business Park and Light Industrial. The Technology Business Park designation is intended for development of manufacturing operations and business offices that research, develop and produce advanced technologies. The Light Industrial designation accommodates all uses permitted in the Technology Business Park plus wholesale storage and distribution.

To the east, the County portions of the project pass through land designated Mixed Industrial, which is intended primarily to accommodate wholesale storage and distribution, research services, and general industrial uses, as well as compatible commercial uses. All of these land designations permit civic uses. The "B" Designator overlay also applies to the County portions of the land use study area; this requires the implementation of specific development and design regulations in conjunction with development.

The POE and CVEF sites and the County portions of SR-11 are zoned S88, Specific Plan Use Regulations under the County Zoning Ordinance. The S88 zoning is intended to accommodate any land uses designated in the applicable Specific Plan. As noted, in the case of the POE and CVEF sites and the County portions of SR-11, such uses include the Technology Business Park, Light Industrial and Mixed Industrial land use designations.

City of San Diego

SR-11 is also a planned facility in the City's OMCP. Proposed SR-11, its connectors to SR-905 and proposed SR-905 modifications to accommodate these connectors, and the SR-125 Connector Variation that has been incorporated into the Preferred Alternative, are surrounded by a land use designation of Industrial Parks/Light Industry in the Land Use Element of the City's currently adopted OMCP. The zoning designation surrounding this portion of the project is Otay Mesa Development District: Industrial Subdistrict under the City's Land Development Code. Properties fronting the future SR-905 from just west of Britannia Boulevard to the SR-125 interchange have similar land use and zoning designations, except for the land surrounding the future SR-905/La Media Road Interchange, which is designated Specialized Commercial. This area is zoned Otay Mesa Development District Commercial Subdistrict.

Existing and Future Land Uses

Field investigations of the land use study area were conducted on June 5, August 25, September 25, 2009, and January 12, 2010. The field investigations confirmed specific land uses and potential impacts based on preliminary maps of the land use study area. The field reviews also included observations of traffic flow, speed, congestion, and access. Digital photographs were taken to document the land use study area and are contained in the CIA.

Surrounding Land Uses

The proposed project is primarily surrounded by undeveloped land, as shown in Figure 3.1-1. Two vehicle/container storage lots and a vehicle auction yard are located in the southern part of the land use study area near Enrico Fermi Drive, along with the Otay Mesa CVEF operated by the CHP in cooperation with the existing Otay Mesa POE. Additional vehicle-related businesses are located just southwest of the SR-905/SR-125/SR-11 Interchange and just west of the SR-905/La Media Road Interchange. Existing industrial uses within the land use study area are located west of Enrico Fermi Drive. These include industrial buildings to the east of SR-905, and vehicle storage and industrial buildings between La Media Road and Britannia Boulevard. Several peaker power plants are located east of the SR-905/SR-125/ SR-11 Interchange. Two small commercial zones developed primarily with hotel, motel, and restaurant uses are also located along SR-905 near the existing Otay Mesa POE; other commercial zones are located just northwest of the SR-905/SR-125/SR-11 Interchange and just northwest of the SR-905/La Media Road Interchange. A satellite campus of Southwestern College is located southeast of the SR-905/Britannia Boulevard Interchange. The only residential uses in the vicinity are three single-family residences grouped together on the north side of Otay Mesa Road between SR-905 and Alta Road. Another house is located just beyond the land use study area, approximately 0.4 mile west of the terminus of the project modifications to SR-905 at Britannia Boulevard. Several other single-family residences are located one or more miles from the proposed project in areas to the north, south and west (beyond the limits of the land use study area). A privately-owned wetland preserve is located south of SR-905 and west of La Media Road. There are currently no plans or requirements for this preserve to be placed in public ownership.

Beyond the land use study area, open space lands are located to the east and northeast of the project. To the north are open space, industrial uses, the Brown Field Airport, and several correctional facilities. To the south are industrial, commercial and government uses, some of which are associated with SR-905 and the existing Otay Mesa POE. West of this developed area toward I-805/I-5 and the San Ysidro POE is a mix of land uses including residential, commercial, industrial, and open space.

Undeveloped Land

Of the 2,524 acres in the land use study area, 1,677 (66 percent) are undeveloped (including the SR-905/SR-125 R/W), while 847 acres (34 percent) are developed. Portions of the undeveloped land have been graded in preparation for development.

Development Trends

Land on both sides of the border in the Otay Mesa area is rapidly urbanizing. On the U.S. side, employment in the census tract surrounding the land use study area is projected to increase from 341 to 28,109 during the period from 2000 to 2030, an 81-fold increase, while a 19-fold population increase is projected during the same time period (HELIX/CIC Research 2010). It is noted that current industrial market conditions are weak throughout San Diego County and for the nation, having been substantially impacted by the recent economic recession. The lingering high national unemployment rate is one measure of the slow U.S. economic recovery. A return to economic growth for the nation and for the local region's economy is a necessary condition for improved industrial land and industrial space market demand within the Otay Mesa submarket.

Despite the current recession-related slow-down in market demand for industrial land in San Diego, long term population and employment projections (2010 – 2030) for the County in general, and for the southern portion of the County specifically, support both the absorption and strong market demand for the available industrial land in Otay Mesa. The County has a limited supply of vacant industrial-zoned land

that could accommodate large-scale warehousing and manufacturing facilities. The development of the proposed POE would enhance demand for the available large industrial parcels in Otay Mesa.

The County most recently updated the EOMSP in September 2010 (County 2010a). Both the County and the City have several active development applications within and adjacent to the land use study area. The EOMSP identifies a conceptual SR-11 Corridor and POE site approximating the Western Alternative selected in the Phase I PEIR/PEIS process, although the identified conceptual POE site is smaller than the POE site proposed as part of this project (approximately 22 acres compared to up to 106.3 acres).

Development pressures are also occurring in the areas of northeastern Tijuana near the proposed POE, where potential undeveloped sites for the Otay II POE on the Mexico side of the border have all but disappeared due to industrial development and increasing encroachment by low income, high density, unregulated residential settlements. Accordingly, Mexican transportation and land use agencies at the state and local levels have reserved a 91-acre site for the Otay II POE (refer to Figures 1-2, *Project Area Map*, and 2-19, *Updated Conceptual Layout of Mexican Otay II POE*) that corresponds closely to the proposed Otay Mesa East POE in the U.S. Concurrently, these agencies initiated studies of potential alternative links between the Otay II POE and Baja California regional transportation network, as well as design and environmental studies for the Otay II POE. The original 2006 five-year land reservation was extended in November 2011 for an additional five years.

Figure 3.1-2, *Planned Land Uses in the San Diego/Tijuana Border Region*, depicts the land use designations in the border region on both the U.S. and Mexican sides. Table 3.1-1, *Characteristics of Proposed Land Development Projects in the Cumulative Study Area*, presents the current proposed private development projects in the project vicinity. The SR-11 and POE/CVEF alternatives would traverse the following proposed project sites described in Table 3.1-1: Otay Crossings Commerce Park, Otay Business Park (Paragon), Bradley/Robertson Copart Salvage Auto Auctions, Otay Mesa Travel Plaza, Dillard and Judd Roll County LLC/Enrico Fermi Industrial Park, and Saeed TM/Airway Business Center.

In addition to the proposed development projects listed in Table 3.1-1, a number of public projects are in process in the project vicinity and are listed in Table 3.1-2, *Characteristics of Proposed Public Works Projects in the Cumulative Study Area*. These include capital improvement projects undertaken by the County, the City and the OWD, construction by Caltrans of SR-905 and SR-125, and improvements to the existing San Ysidro and Otay Mesa POEs.

**Table 3.1-1
CHARACTERISTICS OF PROPOSED LAND DEVELOPMENT PROJECTS IN THE CUMULATIVE STUDY AREA**

Map Key	Identifying Project Number/ Project Name	Location	Proposed Improvements (Project Acreage)	Project Status
County of San Diego				
1	TM 5405 <i>Otay Crossings Commerce Park</i>	South of Otay Mesa Road and east of Alta Road	Subdivision into 62 industrial lots ranging from 1.3 to 69.6 net acres each (total lot area: 287 acres). Also, 26.6 acres of public streets. Open space easements on five lots in the northeast corners of site to protect steep slopes and biologically sensitive resources. Two-phase development. Future R/W for SR-11 and new POE tentatively mapped on four lots, covering approximately 102.7 acres. (311.6 acres)	February 9, 2006 County scoping letter required preparation of a supplemental EIR due to changes since the EOMSP EIR (July 27, 1994). Significant and unmitigable cumulative impacts identified for traffic and air quality. Significant and mitigable direct impacts identified for biological resources, cultural resources, traffic, and noise. Sixth Screencheck Draft Supplemental EIR circulated for public review May 27, 2010 and approved October 7, 2011.
2	TM 5538/TM 5139/MUP 98-020 STP 02-05139-1/ SPA 07-003 <i>Sunroad Centrum Tech Center</i>	Northeast of Otay Mesa Road and Otay Mesa Road/SR-905	Subdivision into 63 lots ranging in size from 1.4 acres to 5.1 acres, of which 11.5 acres are dedicated to commercial uses (SPA). (289.5 acres)	Final Supplemental EIR to the EOMSP Final EIR dated December 15, 2000 for 96-lot project (TM 5139). EIR addendum dated March 4, 2003 for 56-lot project included changes to road improvements and grading. TM 5139 expired; TM 5538 currently proposed on same site (plus triangular area just west of original site, adjacent to SR-125). Supplemental EIR for TM 5139 identified significant unmitigable impacts for air quality and transportation; significant and mitigable impacts identified for biological and cultural resources. Mitigation required open space to protect vernal pools, NNG and sensitive species, cultural and bio monitors, off-site purchase of 0.4 acre of southern willow scrub wetland, 5.4 acres native grassland, 48.6 acres of NNG, avoidance of raptor nesting, and obtaining a QCB take permit. Other requirements include traffic improvements and construction conditions to prevent air quality impacts; however, cumulative air quality impacts and short-term construction traffic impacts would remain unmitigable.
3	TM 5304/Saeed TM/ <i>Airway Business Center</i>	North side of Airway Rd. between Paseo de las Americas and Michael Faraday Dr.	Subdivision into 18 lots (0.75 acre to 3.07 acres) for light industrial uses. (40.59 acres)	Project approved April 21, 2008. Scoping letter dated April 8, 2003 indicated potentially significant impacts to biology, paleontology, archaeology, geology, traffic, and drainage issues. April 2, 2004 biological survey identified impacts to 38.52 acres of NNG, to be mitigated by purchase of 19.26 acres of mitigation bank habitat. Only sensitive species are foraging raptors.

Table 3.1-1 (cont.) CHARACTERISTICS OF PROPOSED LAND DEVELOPMENT PROJECTS IN THE CUMULATIVE STUDY AREA				
Map Key	Identifying Project Number/ Project Name	Location	Proposed Improvements (Project Acreage)	Project Status
County of San Diego (cont.)				
4	TM 5394/ <i>Dillard and Judd Roll County LLC/ Enrico Fermi Industrial Park/ South County Commerce Center</i>	Southwest corner of Enrico Fermi Drive and Otay Mesa Road/SR 905	Subdivision into 16 industrial lots ranging from 2.25 to 8.20 acres each. (80 total acres)	FEIR dated January 2006, certified March 10, 2006. Minor Amendment to the MSCP, consistent with BMO, within the boundary of the adopted HCP. Impacts concluded as less than significant. Project completed September 9, 2008.
5	MUP 04-004 RP 04-001/ <i>Otay Hills Construction Aggregate Extraction Operation</i>	Approximately 0.5 mile east of the intersection of Otay Mesa Road and Alta Road	Rock Quarry located on 210 acres in 550 acre-ownership. Construction aggregate extraction operation, including materials processing (primary and secondary plants), concrete batch plant, cement-treated base plant, asphalt batch plant, and recycling of asphalt and concrete products. (210 acres)	NOP dated May 26, 2005 included Initial Study identifying potential impacts to land use, geology, hydrology/water quality, biological and cultural resources, traffic, noise, air quality, public services/utilities, hazardous materials, and aesthetics. Draft EIR submitted April 2007. First Iteration Review of the Screencheck Draft EIR dated September 6, 2007. March 3, 2009 Follow-up letter from February 13, 2009 meeting stated that current negotiations were underway to revise the project footprint.
6	TPM 20701RPL1/ ZAP 99-029/STP 05-018 SPA 05-005/ <i>Burke Minor Subdivision/Otay Logistics Center</i>	Eastern side of Enrico Fermi Drive between Siempre Viva Road and Airway Road	Subdivision into four parcels of 8.80, 9.37, 9.48, and 11.66 acres. Grading and improvement of a commercial road traversing the site. Truck parking and storage on site. Construction of approximately 27,000 sf of buildings and warehouse in the northern part of the site, along with 404 parking spaces and 73 loading spaces. (39.3 acres)	MND for Burke Minor Subdivision dated October 2, 2003 (otherwise relies on EOMSP EIR), plus an addendum dated February 23, 2001 to mitigate impacts. Significant and mitigable impacts identified for biological resources. Mitigation consists of off-site purchase of 20 acres of NNG to mitigate for 40 acres (entire site) of disturbed grassland at 0.5:1 ratio. Otay Logistics Center: ND dated August 2006 required fair share traffic contributions to mitigate traffic impacts for 635 (Phase I) and 715 (Phase II) ADT. Changes from mixed industrial (LU) to LE and Heavy Industrial. Also some potential impacts to cultural resources.

Table 3.1-1 (cont.) CHARACTERISTICS OF PROPOSED LAND DEVELOPMENT PROJECTS IN THE CUMULATIVE STUDY AREA				
Map Key	Identifying Project Number/ Project Name	Location	Proposed Improvements (Project Acreage)	Project Status
County of San Diego (cont.)				
7	MUP 00-012/ Minor Dev. 00-012-02/L- 14212/ P-00-012 TE <i>East Otay Mesa Auto Storage/ Aaron Construction Auto Auction Park/ Insurance Auto Auctions</i>	Northwest corner of Otay Mesa Road and Alta Road	Vehicle storage facility with weekly storage auctions. Temporary use (maximum five years). (38 acres)	MND dated July 9, 2003 for MUP 00-012. Previous MUP expired on July 9, 2008. Application for Time Extension submitted on July 8, 2008. Letter dated August 26, 2008 requested further analysis. Significant and mitigable impacts identified for traffic in 2003 MND. Site is currently vacant. Potential impacts to biological resources, geology, hydrology, traffic, and paleontological resources. Mitigation required fair share traffic contributions to mitigate traffic impacts from addition of 354 ADT.
8	MUP 03-001/ <i>Otay Mesa Auto Transfer/Rowl and</i>	Northeast corner of Otay Mesa Road and Enrico Fermi Drive	Storage area for operable vehicles as an interim use. (40.4 acres)	MND dated June 24, 2005 relying on EOMSP with modifications. Significant and mitigable impacts identified for biological and cultural resources, paleontology, traffic, and geology. Mitigation measures included four acres of NNG credits, biological monitoring for burrowing owls and raptor breeding, cultural and paleontological monitoring, control of construction emissions and fugitive dust, geological requirements, landscape requirements, traffic improvements, and a fair share contribution for SR-905/Old Otay Mesa Road realignment.
9	MUP 88-020/ STP 00-070/ <i>Bradley/Robertson Copart Salvage Auto Auctions</i>	7377 Otay Mesa Road. Southwest corner of Otay Mesa Road at Alta Road	Modification of existing MUP to add a 300 feet by 140 feet auto storage facility on an existing graded auto storage lot. (acreage NA)	First ND dated February 22, 1994. Second ND dated November 2, 2001 to increase the number of employees from 10 to 40, add 900 feet of additional leach line, and extend the expiration date of the interim permit from November 2000 to November 2005. January 3, 2007 letter requested supplemental technical information regarding hydrology, storm water management, traffic, aesthetics, route locations, and the preliminary grading plan.

Table 3.1-1 (cont.) CHARACTERISTICS OF PROPOSED LAND DEVELOPMENT PROJECTS IN THE CUMULATIVE STUDY AREA				
Map Key	Identifying Project Number/Project Name	Location	Proposed Improvements (Project Acreage)	Project Status
County of San Diego (cont.)				
10	TM 5505/ <i>Otay Business Park (Paragon)</i>	Southeast of future intersection of Alta Road and Airway Road.	Subdivision into 59 industrial lots, in four phases, from west to east. No specific uses identified. Water, sewer and storm drain lines would be extended into the project site. Off-site improvements include extensions of Alta Road, Airway Road and Siempre Viva Road. The future alignment of SR-11 may traverse a portion of the site. (161.6 acres)	<p>Scoping letter dated July 27, 2006. Supplemental EIR was requested May 30, 2007 for biology regarding preservation of vernal pools, storm water management, and easements. Letter from County dated March 13, 2008 stated no RPO wetlands identified.</p> <p>Revised Request For SEIR dated April 23, 2008, listed potential impacts to biological resources. June 30, 2008 letter stated the County's acceptance of mitigation proposal. Mitigation for burrowing owl NNG habitat at a ratio of 1:1, with 0.5:1 on East Otay Mesa and the other 0.5:1 off East Otay Mesa in an area with the potential to support burrowing owl. Also identified as significant were stormwater and drainage impacts.</p> <p>First iteration of the SEIR dated October 30, 2008, requested further discussion in the SEIR and technical studies. Potential impacts identified in SEIR were air quality; biological resources: project determined not to be consistent with the BMO, because it will impact all sensitive plant species on site. Impacts to sensitive animal species could occur also. More than five acres of raptor habitat might be impacted; cultural/paleontological resources; hazards; hydrology; noise; public services; transportation/traffic; utilities and service systems.</p>
11	STP-07-038/ L14625 <i>Vulcan-Otay Mesa Plant</i>	East of Alta Road and Otay Mesa Road intersection	Proposed asphalt and concrete plants. 1,500 sf of office space, 2,800 sf of break area, and 28 parking spaces. (13.5 acres)	<p>NOD for grading of pad dated September 15, 2006. Approval of project relying on EOMSP EIR. Scoping letter for asphalt and concrete plant project dated October 29, 2007. Revised Scoping letter from County dated November 29, 2007 deleted the request for an archaeological report. Letter dated November 7, 2008 stated that biological resource mitigations were completed. First Iteration of Initial Study dated May 26, 2009 requested further analysis.</p> <p>Grading project would impact 73.5 acres of NNG. Impacts to NNG will be mitigated at a 1:1 ratio by contributing \$10,000 per acre of mitigation responsibility to the San Diego Foundation to be used for management of NNG preserve areas on Otay Mesa. Letter received on August 13, 2007, stated impacts to project would be 2.06 acres of CSS, 10.9 acres of NNG,</p>

Table 3.1-1 (cont.) CHARACTERISTICS OF PROPOSED LAND DEVELOPMENT PROJECTS IN THE CUMULATIVE STUDY AREA				
Map Key	Identifying Project Number/Project Name	Location	Proposed Improvements (Project Acreage)	Project Status
County of San Diego (cont.)				
				mitigated by 8.54 acres off site. Revised Scoping Letter from County dated November 29, 2007 deleted the request for an archaeological report. May 26, 2009 iteration requested further analysis for stormwater, air quality, traffic, and hydrology.
12	TM 5527 <i>Maple Leaf Industrial/Piper Otay Park</i>	West of SR-125, north of Otay Mesa Road/SR- 905 and east of Piper Rancho Road	Subdivision into 13 industrial lots ranging in size from 1.03 to 2.61 acres. (24.84 acres)	Environmental Review Update Checklist Form for projects with Previously Approved Environmental Documents identified potential new impacts to biological resources, hazards, hydrology, and traffic which were not previously identified in the EOMSP EIR. Scoping Letter dated March 5, 2007 identified the same issues as above. Fourth iteration of Initial Study stated further analysis of traffic impacts was needed.
13	TPM 21046 P06-102 93-19-006AA <i>California Crossings</i>	Northwest corner of Otay Mesa Road and Harvest Road	A 352,502 sf regional shopping center. (28.4 acres)	Currently in environmental analysis. EIR not yet available for public review. Potential significant project impacts are to air quality (long-term mobile source emissions related to CO, VOC, and PM ₁₀); traffic/circulation (significant impacts to intersections and roadways); biological resources (direct loss of 23.4 acres of sensitive NNG habitat, loss to raptor foraging and nesting habitat, impacts to migratory birds [mitigation includes acquisition of a 15.4-acre conservation easement and distance restrictions of construction during raptor nesting season]); and cultural and paleontological resources. Impacts determined not to be significant are associated with geology/soils, hazards/hazardous materials, hydrology/water quality, noise, aesthetics, agriculture, land use and planning, mineral resources, population and housing, public services and utilities, and recreation.
14	TM 5549 <i>International Industrial Park</i>	Alta Road at Lonestar Road	Subdivision of vacant land into 24 parcels for technology/business. 118.43 acres to be developed; 35.90 acres placed in open space; 16.26 acres used for internal circulation streets. Development will include three acres for the future permanent fire and sheriff station. (170.59 acres)	Pre-Application letter dated July 23, 2007 listed biological resources as one of the major project Issues. Scoping Letter, dated February 3, 2009.

Table 3.1-1 (cont.)
CHARACTERISTICS OF PROPOSED LAND DEVELOPMENT PROJECTS IN THE CUMULATIVE STUDY AREA

Map Key	Identifying Project Number/ Project Name	Location	Proposed Improvements (Project Acreage)	Project Status
County of San Diego (cont.)				
15	MUP 06-074W1 <i>Corrections Corporation of America</i>	East of Alta Road and north of Calzada de la Fuente	Development of a 408,522-sf secure detention facility in two phases. The facility would include detention buildings to accommodate 2,132 beds and several other buildings for ancillary support services, as well as walled and partially covered outdoor recreation areas. Includes parking area and an equestrian trail. (37 acres)	The County is processing a MUP. Because this project would not result in environmental impacts beyond those assessed in the EOMSP EIR, no Supplemental EIR is expected to be prepared.
16	MUP 98-001RPL1 <i>Salvage Yards/National Enterprises Storage and Recycling Facility</i>	East and west sides of Alta Road, north of Calzada de la Fuente	Development of areas for interim use, including automobile storage, scrap and recycling operations, and wood and green material recycling. Project would include temporary office trailers of 720 sf each, 200 employee parking spaces, and space for approximately 11,000 vehicles. (161.2 acres)	MUP issued December 23, 2008.
17	MUP 98-024W1 <i>Travel Plaza</i>	East side of Enrico Fermi Drive, north of Airway Drive and south of Otay Mesa Road	Four parcels, ranging from 7.35 to 42.16 acres each. Full-service truck stop travel plaza. Driver facilities, restaurant, convenience store, service bays, fuel sales, 122-room hotel, office building, parking. (82 acres)	Original MUP issued November 1998. Subsequent request for modifications/deviations filed in September 2010 and April 2011.
18	TM 5566 <i>Hawano Subdivision</i>	Southeast corner of Airway Road and Airway Place	Tentative Map for 23 light industrial lots and one detention basin lot in the EOMSP. Project would include extension of sewer or water utilities; a sewer pump station off-site at the northeast corner of Alta Road and Via de la Amistad; cut and fill of 230,000 cy of material in a balanced grading operation; and possible off-site drainage improvements to serve the proposed roadways The site is currently vacant and vegetated in non-native grassland. (80 acres)	Draft EIR in process as of May 2011.
19	TM 5568 <i>Rabago Subdivision</i>	6950 and 6980 Otay Mesa Road	Proposed subdivision of 71.1 acres to create 19 lots for business park development in the EOMSP. Public roads are proposed within the project site to provide access to the lots internally. The project site would be rough graded to accommodate building pads and the on-site roads.	EIR NOP prepared in March 2011.

Table 3.1-1 (cont.) CHARACTERISTICS OF PROPOSED LAND DEVELOPMENT PROJECTS IN THE CUMULATIVE STUDY AREA				
Map Key	Identifying Project Number/ Project Name	Location	Proposed Improvements (Project Acreage)	Project Status
City of San Diego				
20	<i>Cross Border Facility (a.k.a. Las Californias Center)</i>	8077 Siempre Viva Road. South of Siempre Viva Road and east of Britannia Blvd.	75,000 sf facility with a pedestrian bridge allowing access to the Tijuana International Airport. This property has previously been approved for development with 31 industrial lots, as the Las Californias Center. (24.6 acres)	Draft NEPA EA was circulated for public review in December 2009 and approved on January 10, 2012. Industrial subdivision (Las Californias Center) has been approved by the City but not yet constructed.
21	<i>Just Rite</i>	Northeast corner of Siempre Viva Road and Britannia Blvd.	12 lots for industrial development. (38.68 acres)	Environmental Initial Study Review in 2005.
22	<i>Airway 18 Truck Terminal/Airway Auto Park Storage</i>	Southeast corner of Britannia Blvd. and Airway Road	Truck terminal. (acreage N/A)	N/A
23	<i>Lonestar/New Millenium</i>	East of the intersection of Lonestar Road, La Media Road and SR-125	1,150 to 1,350 residential units and 70-80 thousand sf of industrial development. (119 acres)	Preliminary review opened August 2, 2008. Application date change June 18, 2008.
24	<i>Brown Field Technology Park</i>	South of Otay Mesa Road and west of Britannia Blvd.	Subdivision to consolidate 21 parcels into 20, and also vacate, dedicate and acquire easements for SR-905 for future industrial/business park development. (58.4 acres)	Expedited processing for economic development. Approved April 14, 2009.
25	<i>Brown Field Airport Development Project</i>	North of Otay Mesa Road, between Heritage Road and La Media Road	Development of general aviation uses, fixed base operations, hangars, restaurants, a new air and space museum, industrial area, solar generation facility, retail, transit, and other uses to support Brown Field Airport. (73 acres)	NA

NOP = Notice of Preparation; EIR = Environmental Impact Report; FEIR = Final Environmental Impact Report; ND = Negative Declaration; MND = Mitigated Negative Declaration; IS = Initial Study; NOD = Notice of Decision; EOMSP = East Otay Mesa Specific Plan; SWMP = Storm Water Management Plan; WUS = Waters of the U.S.; NNG = Non-Native Grassland; DCSS = Diegan Coastal Sage Scrub; QCB = Quino Checkerspot Butterfly; BMO = Biological Mitigation Ordinance; HCP = Habitat Conservation Plan; ADT = Average Daily Trips; SFR = Single-family residences; MFR = Multi-family residences; DU = Dwelling units; TM = Tentative Map; TPM = Tentative Parcel Map; STP = Site Plan; MUP = Major Use Permit; RP = Reclamation Plan; ZAP = Minor Use Permit; RPL = Replacement; SPA = Specific Plan Amendment; MSCP = Multiple Species Conservation Program; R/W = Right of Way; N/A = Not Available.

**Table 3.1-2
CHARACTERISTICS OF PROPOSED PUBLIC WORKS PROJECTS IN THE CUMULATIVE STUDY AREA**

Map Key	Project Name	Location	Proposed Improvements	Project Status
Caltrans Capital Improvements Projects				
A	SR-905	From I-805 to the existing Otay Mesa POE at the U.S. - Mexico Border	Project consists of construction of a six-lane freeway including grade-separated local access interchanges, and a freeway-to-freeway interchange with future SR-125.	Final EIS/EIR dated July 2004. R/W has been acquired in the eastern portion of SR-905. Siempre Viva Road Interchange and associated segment of SR-905 have been constructed. Remaining portion of SR-905 between Siempre Viva Road and Britannia Boulevard was opened to traffic in December 2010. The western portion of SR-905 between Britannia Boulevard and I-805 is expected to be completed in summer 2012. Clearing and preliminary grading within the SR-125/SR-905/SR-11 interchange area began in 2009.
B	I-805 Managed Lanes South	Along I-805 from East Palomar Street in Chula Vista to Landis Street in the City.	The project proposes to construct four buffer-separated Managed Lanes between East Palomar Street and SR-94, and two HOV/transit lanes between SR-94 and Landis Street, all in the freeway median. Includes associated ramps and transit stations and park-and-ride lots.	EIR/EA approved June 2011. Phased construction is expected to begin in 2012 and be completed by 2020.
GSA POE Improvement Projects				
C	U.S. Cargo Import Facility Improvements at Otay Mesa POE	East of the existing Otay Mesa POE at the U.S. - Mexico Border.	Project consists of adding lanes to a connector roadway, modifying approaches and fences for booths and other infrastructure improvements to enhance goods movement at the U.S. Cargo Import Facility	First phase of project completed; final phase is pending.
D	Otay Mesa POE Improvements Project	Otay Mesa POE at southern terminus of SR-905	The proposed project would reconfigure the existing POE through the purchase of adjacent property. The project would add primary and secondary inspection booths to the passenger side. On the commercial side, the project would add primary inspection, empty-truck inspection, and exit booths, and would relocate the hazardous materials import inspection area from the export compound to the commercial import compound.	Feasibility Study and PDS complete. In early stages of environmental process. Scoping meeting held July 7, 2009.

Table 3.1-2 (cont.) CHARACTERISTICS OF PROPOSED PUBLIC WORKS PROJECTS IN THE CUMULATIVE STUDY AREA				
Map Key	Project Name	Location	Proposed Improvements	Project Status
GSA POE Improvement Projects (cont.)				
E	Reconfiguration and Expansion of the San Ysidro POE	San Ysidro POE at southern terminus of I-5	Three-phase project includes demolition and new construction of most of the POE. New facility will consist of 210,000 sf of building space, primary and secondary inspection areas, 29 northbound vehicle lanes, 2 northbound bus lanes, 6 southbound vehicle lanes, and a new southbound roadway to connect with Mexico's El Chaparral facility.	EIR/EIS complete. Schedule includes Phase I construction initiation in 2010 and completion of final phase construction in 2014.
County Capital Improvement Projects				
F	Lonestar Road	From Alta Road to 0.5 mile west	Project is the construction of a new road from Enrico Fermi Drive to Alta Road. No planning group has been assigned and funding has yet to be determined.	Estimated completion date is to be determined, per the County Department of Public Works Five-Year Capital Improvement Plan.
G	Otay Mesa Road Widening	Otay Mesa Road from SR-905 to Enrico Fermi Drive	Project is the widening of 1.2 miles of Otay Mesa Road from Vann Centre Boulevard to Enrico Fermi Drive. No planning group has been assigned and funding has yet to be determined.	Estimated completion date is to be determined, per the County Department of Public Works Five-Year Capital Improvement Plan.
Otay Water District Capital Improvement Projects				
H	Otay Mesa Recycled Water System Capital Improvement Program R2087, R2077, R2058 Project	Wueste Road, Alta Road, and Airway Road/La Media Road	<p>Construction of three recycled water pipelines to bring recycled water to Otay Mesa: A 24-inch diameter pipeline in Wueste Road (R2087), a 24-inch pipeline in Alta Road (R2077), and a 16-inch diameter pipeline in Airway Road/La Media Road (R2058)</p> <p>A pressure-reducing station is planned as part of the Wueste Road Pipeline to reduce pressure of recycled water arriving in Otay Mesa.</p>	Design schedule for 2006 through 2010; construction scheduled for 2008 through 2012. Draft EIR issued February 26, 2010.
City of San Diego Capital Improvements Project				
I	Otay Mesa Road Widening	Otay Mesa Road from Piper Ranch Road to Sanyo Avenue	Improve Otay Mesa Road to a four-lane Prime Arterial from Piper Ranch Road easterly to SR-125 and a four-lane Major Road from SR-125 to Sanyo Avenue.	Design schedule for 2006 through 2010; construction scheduled for 2008 through 2012.
J	Otay Truck Route Widening	Border corridor truck route between La Media Road and Drucker Lane.	Widen existing truck route between La Media Road and Drucker Lane 12 feet to the north to accommodate an 11-foot safety lane and two 12-foot truck lanes. The additional width will require five feet additional R/W to the north.	Construction began in July 2010.

Table 3.1-2 (cont.) CHARACTERISTICS OF PROPOSED PUBLIC WORKS PROJECTS IN THE CUMULATIVE STUDY AREA				
Map Key	Project Name	Location	Proposed Improvements	Project Status
San Diego Rural Fire Protection District				
K	Fire Station/ Sheriff's Station Relocation	Otay Mesa Road and Enrico Fermi Drive	As determined necessary on the basis of development in the region, a permanent 6,000-sf Sheriff's station is planned to be co-located with a future 8,000-sf fire station at the (future) northwest corner of the intersection of Otay Mesa Road and Lonestar Road.	N/A
SANDAG Capital Improvements Project				
L	South Bay Bus Rapid Transit (BRT) – Phase One	21-mile BRT line between the existing Otay Mesa POE and downtown San Diego, via eastern Chula Vista, I-805 and SR-94.	The South Bay BRT is being developed to provide high-speed transit connections between downtown San Diego and the Otay Mesa Border Crossing along the future I-805 Managed Lanes (a Final EIR/EA was completed by Caltrans for this managed lanes project in 2011) and a dedicated transit way through eastern Chula Vista. At full buildout, project will include 15 stations with upgraded passenger shelters and technological enhancements, and premium coach buses. Options are being explored to connect the proposed Otay Mesa East POE to the BRT system. See Project B above for additional information.	Preliminary engineering, environmental work and final design in process; Phase One is planned to be in operation by late 2012.

EIS/EIR = Environmental Impact Statement/Environmental Impact Report; R/W = Right of Way; SR = State Route; I- = Interstate; MG = million gallon; PES = Preliminary Environmental Study; NA = Not Available; NOP = Notice of Preparation

3.1.2 Environmental Consequences

As discussed above, land uses surrounding the proposed project are dominated by undeveloped land and industrial uses, along with several vehicle storage lots and the existing CVEF. Existing and proposed development in the land use study area consists primarily of industrial and transborder support uses, many of which were established due to proximity with the existing Otay Mesa POE and planned Otay Mesa East POE.

The project build alternatives and variations would traverse primarily undeveloped land and Caltrans R/W, with a few exceptions (refer to Figures 2-9a through 2-9d, Figures 2-11a through 2-11d, and Figures 2-12a through 2-12d). Section 3.5, *Relocations and Real Property Acquisitions*, of this Final EIR/EIS discusses in more detail the proposed parcel acquisitions under the various build alternatives and variations.

Preferred Alternative

The Preferred Alternative represents a modified version of the Two Interchange Alternative with the SR-125 Connector Variation and some connections previously evaluated as part of the Siempre Viva Road Full Interchange Variation (refer to analyses of these Draft EIR/EIS alternatives and variations below). It would convert 21.8 fewer acres of land to transportation uses than the Two Interchange Alternative. The Preferred Alternative would permanently convert a total of 235.5 acres to transportation-related uses, including 210.5 acres of undeveloped land designated for industrial uses, 2.8 acres of industrial land, 16.3 acres of graded land currently used for truck storage, 5.6 acres of land currently used as a vehicle auction yard under a temporary major use permit, and 0.3 acre of Otay Water District Land. As noted below, this conversion of existing land to transportation uses would represent a land use impact.

The Preferred Alternative would traverse existing local roads (Enrico Fermi Drive, Sanyo Avenue, Harvest Road, La Media Road, and Britannia Boulevard), and existing highway R/W, but this would not constitute a change of land use. The Preferred Alternative would also traverse the same currently proposed private developments described below for the Two Interchange Alternative. As noted below, the conversion of portions of the proposed developments to SR-11 R/W and the POE/CVEF site would be considered a substantial land use impact, despite the fact that the project would be consistent with the County General Plan, EOMSP, the City General Plan and the OMCP.

Two Interchange Alternative

As shown in Figures 2-9a through 2-9d, the Two Interchange Alternative would permanently convert a total of 257.3 acres of land to transportation-related uses, including 226.5 acres of undeveloped land designated for industrial uses, 2.9 acres of industrial land, 22.0 acres of graded land currently used for truck storage, 5.6 acres of land currently used as a vehicle auction yard under a temporary major use permit, and 0.3 acre of Otay Water District Land. An additional 7.4 acres of undeveloped land (a 150-foot strip) adjoining the international border fence is currently under federal ownership and CBP control; it would continue under CBP control for border protection purposes. It is expected that appropriate arrangements for shared use of this space would be agreed upon by FHWA/Caltrans and CBP, to allow simultaneous operation of the proposed POE and cross border travel, as well as continued border patrol activity along the POE's border frontage. The Two Interchange Alternative would traverse existing local roads (Enrico Fermi Drive, Sanyo Avenue, Harvest Road, La Media Road, and Britannia Boulevard), but this would not constitute a change of land use. Similarly, as noted above, the project would traverse existing highway R/W, but this also would not constitute a change of land use. Although implementation of SR-11 and the Otay Mesa East POE would be consistent with the County General Plan, EOMSP, the City General Plan and the OMCP (as explained in more detail in Section 3.2, *Consistency with Federal State, Regional, and Local Plans and Programs*), the project conversion of existing non-transportation land uses to transportation uses would represent a land use impact.

The Two Interchange Alternative would also traverse the following currently proposed private developments: Saeed TM/Airway Business Center, Dillard and Judd Roll County LLC/Enrico Fermi Industrial Park South County Commerce Center, Otay Mesa Travel Plaza, Bradley/Robertson Copart Salvage Auto Auctions, Otay Crossings Commerce Park, and Otay Business Park. Specific acquisition acreages for these parcels are discussed in Section 3.5, *Relocations and Real Property Acquisition*. With respect to the potential for noise-related land use incompatibility impacts, per Caltrans guidelines, noise abatement for planned development is only considered if the development has received all final local jurisdictional discretionary approvals before final approval of the transportation project. Since none of these projects has received final discretionary approval, no noise impacts to planned land uses are assessed. Potential visual impacts would be minimized through measures identified in the project Visual Impact Assessment (VIA; HELIX 2010a), and included in this Final EIR/EIS as well. Although the project has been identified for many years in the County General Plan, EOMSP, City General Plan and OMCP, the conversion of portions of these proposed developments to SR-11 R/W and the POE site would be considered a substantial land use impact. Much of the planned development in the area is industrial use associated with the maquiladora industry, and would benefit from the proposed project. Property owners/developers have been tracking the proposed project and have been planning/designing their development projects to accommodate SR-11 and the proposed POE, in the location that was selected in the Phase I ROD for the proposed project. Nevertheless, the project would be considered to result in a land use incompatibility impact with planned uses, because the project would convert designated industrial land to highway use.

One Interchange Alternative

The One Interchange Alternative would permanently convert to transportation-related uses a total of 253.8 acres of land, including 227.41 acres of undeveloped land designated for industrial uses, 2.0 acres of industrial land, 10.5 acres of graded land currently used for truck storage, 13.6 acres of land currently used as a vehicle auction yard under a temporary major use permit (refer to Figures 2-11a through 2-11d), and 0.3 acre of OWD land. As in the case of the Two Interchange Alternative, an additional 7.4 acres of undeveloped land adjoining the international border fence is currently under federal ownership and CBP control; it would continue under CBP control as part of the proposed POE. The One Interchange Alternative also would traverse existing local roads and highway R/W, but this would not constitute a change of land use. As in the case of the Two Interchange Alternative, the project conversion of existing non-transportation land uses to transportation uses would represent a land use impact.

The One Interchange Alternative would also traverse the same currently proposed private developments described above for the Two Interchange Alternative. The implementation of a single local interchange instead of the two interchanges contemplated in the Phase I ROD for the project would require design adjustments on the part of the property owners of these proposed developments. As noted above, the conversion of portions of the proposed developments to SR-11 R/W and the POE site would be considered a substantial land use impact, despite the fact that the project would be consistent with the County General Plan, EOMSP, the City General Plan and the OMCP.

No Interchange Alternative

The No Interchange Alternative would permanently convert to transportation-related uses a total of 232.3 acres of land, including 214.5 acres of undeveloped land designated for industrial uses, 2.0 acres of industrial land, 10.7 acres of graded land currently used for truck storage, 4.8 acres of land currently used as a vehicle auction yard under a temporary major use permit (refer to Figures 2-12a through 2-12d), and 0.3 acre of OWD land. As mentioned for the other alternatives, an additional 7.4 acres of undeveloped land adjoining the international border fence is currently under federal ownership and CBP control; it would continue under CBP control as part of the proposed POE. The No Interchange Alternative would

traverse existing local roads and highway R/W, but this would not constitute a change of land use. As in the case of the Two and One Interchange Alternatives, the project conversion of existing non-transportation land uses to transportation uses would represent a land use impact.

The No Interchange Alternative would also traverse the same currently proposed private developments described above for the Two Interchange Alternative. The implementation of SR-11 with no local interchanges instead of the two interchanges contemplated in the Phase I ROD for the project would require design adjustments on the part of the property owners of these proposed developments. As noted above, the conversion of portions of proposed developments to SR-11 R/W and the POE/CVEF site would be considered a substantial land use impact, despite the fact that the project would be consistent with the County General Plan, EOMSP, the City General Plan and the OMCP.

Proposed New and Relocated Easements – All Alternatives

All of the alternatives would also include several easements, both permanent (for utilities, drainage, retaining wall footings and land under CBP control) and temporary (for construction). These would not represent land use conversion impacts, but they could affect the use of the land under easement. All of the proposed easements (including the CBP easement) are on currently undeveloped land, except the drainage/utilities/wall footing easements in the Sanyo Avenue area, which overlay existing industrial land uses. The Preferred Alternative includes the following easements, which constitute project refinements that could also be applied to any of the Draft EIR/EIS build alternatives:

Disturbance Limits within CBP Easement	6.0 acres
Drainage Easements adjacent to Siempre Viva Road and Enrico Fermi Drive interchanges	0.6 acre
Permanent Gas Line Easement – northwest corner of POE/CVEF	0.8 acre
Temporary Gas Line Easement – northwest corner of POE/CVEF	0.6 acre
Temporary Construction Easements – Sanyo Avenue Area	0.6 acre
Wall Footing, Utility and Drainage Easements – Sanyo Avenue Area	1.7 acres

The Draft build alternatives, which included a POE footprint that extended farther east than the Preferred Alternative POE footprint, would have disturbed 7.4 acres within the CBP easement.

Proposed Biological Mitigation Sites – All Alternatives

Under any of the alternatives, up to 184.2 acres of undeveloped land at the Lonestar and Johnson Canyon mitigation sites would be impacted by project-related mitigation efforts, including some grading as part of the process of preservation, restoration, creation and enhancement of habitat. The majority of the acreage of the Lonestar and Johnson Canyon parcels is within the City of San Diego Multi-Habitat Planning Area (MHPA); some of it is also designated as Multiple Species Conservation Program (MSCP) Biological Resource Core Area (BRCA).

Variations on the Draft EIR/EIS Build Alternatives

No Toll Variation

The No Toll Variation of each of the Draft EIR/EIS build alternatives would involve conversion of the same land uses to transportation-related uses and the same partial acquisitions as described for the toll versions of these build alternatives. As noted above, this conversion of existing non-transportation land uses would represent a land use impact. The conversion of portions of proposed developments to SR-11 R/W and the POE/CVEF site would also represent a land use impact, despite the fact that implementation

of SR-11 and the Otay Mesa East POE would be consistent with the County General Plan, EOMSP, the City General Plan and the OMCP.

46-foot Median Variation

Compared to the baseline Draft EIR/EIS build alternatives with the 22-foot median, the 46-foot Median Variation of these alternatives would convert slightly (approximately two percent) more developed land to transportation uses in each case. For any of the Draft EIR/EIS build alternatives, the 46-foot Median Variation would result in an additional 0.7 acre converted from industrial developed land to transportation uses. As noted above, this conversion of existing land would represent a land use impact.

SR-125 Connector Variation

The construction of the elevated connector from southbound SR-125 to eastbound SR-11, whether according to the Draft EIR/EIS variation design or the Preferred Alternative design, would take place entirely within existing Caltrans R/W among other planned connector ramps associated with a large interchange, so there would be no additional land use conversion or compatibility impacts to existing or planned developments, when combined with any of the previously described build alternatives. Regardless of the design, the additional connector would increase accessibility to project area industrial properties from the north, which is a land use benefit to these properties, although the traffic study predicts that only 3,700 to 4,000 average daily trips (ADT)¹ in 2015 and 6,700 to 8,600 ADT in 2035 would use this connector each day (depending on the project alternative; VRPA Technologies [VRPA] 2011). This benefit would be particularly important under the No Interchange Alternative, since access to and from local businesses would be more limited under this alternative.

SR-905/SR-125/SR-11 Full Interchange Variation

The construction of the additional connectors proposed for the Draft EIR/EIS alternatives under the SR-905/SR-125/SR-11 Full Interchange Variation would take place entirely within existing Caltrans R/W among other planned connector ramps associated with a large interchange, so there would be no additional land use conversion or compatibility impacts to planned developments, when combined with any of the previously described Draft EIR/EIS build alternatives. This variation would provide more complete accessibility to and from East Otay Mesa, which would represent a land use benefit and would be compatible with the industrial properties on the mesa; however, the traffic study indicates only the following low ADT for each connector, with traffic volumes projected to be the same in each direction:

Year/Alternative	ADT
2015	
Two Interchange Alternative	1,000
One Interchange Alternative	1,000
No Interchange Alternative	1,400
2035	
Two Interchange Alternative	2,000
One Interchange Alternative	2,200
No Interchange Alternative	6,500

¹ Average daily traffic or average daily trips, is the average or mean number of vehicles passing in both directions at a specific point in a 24-hour period.

This benefit would be particularly important under the No Interchange Alternative, since access to and from local businesses, and from local businesses to the proposed POE, would be more limited under this alternative.

Siempre Viva Road Full Interchange Variation

This variation, which would apply only to the Two Interchange Alternative, would require slightly more land for transportation uses in the vicinity of Siempre Viva Road than would the baseline Two Interchange Alternative. The Siempre Viva Road Full Interchange Variation would result in an additional 20.2 acres of undeveloped land designated for industrial use permanently converted to transportation uses. As noted above, this conversion of existing land would represent a land use impact.

No Build Alternative

Implementation of the No Build Alternative would not convert existing land uses to transportation uses, or introduce incompatible land uses to the area, and there would be no short-term impact to land use. However, the No Build Alternative would deviate from the planned development in the area by not providing SR-11 or POE, and could adversely affect the existing land uses that were developed in anticipation of the proposed project, as well as other planned industrial development in the area, by perpetuating the current excessive border wait times and the associated business inefficiencies.

It is expected that development would proceed in this area, with or without the proposed project. With a decision not to implement SR-11 and Otay Mesa East POE project at this time, the County could choose to amend the EOMSP to remove SR-11 and the new POE from the Circulation Plan, and process active tentative maps, no longer reserving R/W for these facilities.

As noted above under *Affected Environment*, after 2011, the land currently reserved for a new POE by the Mexican government potentially could become developed with other uses under the No Build Alternative and no longer be available for future implementation of a POE, if the No Build were to be selected.

It is possible that the No Build Alternative would only delay implementation of the Otay Mesa East POE. If development were to proceed on the U.S. and/or Mexico sides of the border in the East Otay Mesa area, a situation could develop wherein acquisition of developed property would be necessary to implement SR-11 and the Otay Mesa East POE in the future. If development leaves only the most environmentally constrained land available for these facilities and the facilities must be constructed in close proximity to more existing development, associated visual- and noise-related land use compatibility impacts may eventually be greater than they would be under the currently proposed project build alternatives.

3.1.3 Avoidance, Minimization, and/or Mitigation Measures

Preferred Alternative and Draft EIR/EIS Build Alternatives

The project conversion of existing and planned land uses would represent a land use impact under the Preferred Alternative or any of the other build alternatives. Extensive efforts have been made to design the project in such a way that impacts to existing industrial uses would be minimized, including the proposal of build alternatives with a 22-foot median in the Sanyo Avenue area to minimize operational impacts to businesses. Project land acquisition in undeveloped areas has also been planned to accommodate future needs through 2035, to avoid a situation in which future acquisition of developed property would be necessary. Where land acquisition is unavoidable, property owners would be compensated in accordance with the Uniform Relocation Assistance and Real Property Acquisition

Policies Act of 1970, as amended (refer to Section 3.5 and Appendix F for relocation assistance information).

Aside from land use conversion impacts, neither the Preferred Alternative nor any of the other build alternatives, would impact farmlands or result in any other type of land use impact. Therefore, no additional avoidance, minimization, and/or mitigation measures would be required.

Variations on the Draft EIR/EIS Build Alternatives

No Toll Variation and the SR-905/SR-125/SR-11 Interchange Variations

The above-listed avoidance, minimization, or mitigation measures would still apply if any of the variations of the Draft EIR/EIS build alternatives are implemented, and no additional measures would be required. This conclusion would apply to the No Toll Variation, the SR-905/SR-125/SR-11 Interchange variations or the Siempre Viva Road Full Interchange Variation.

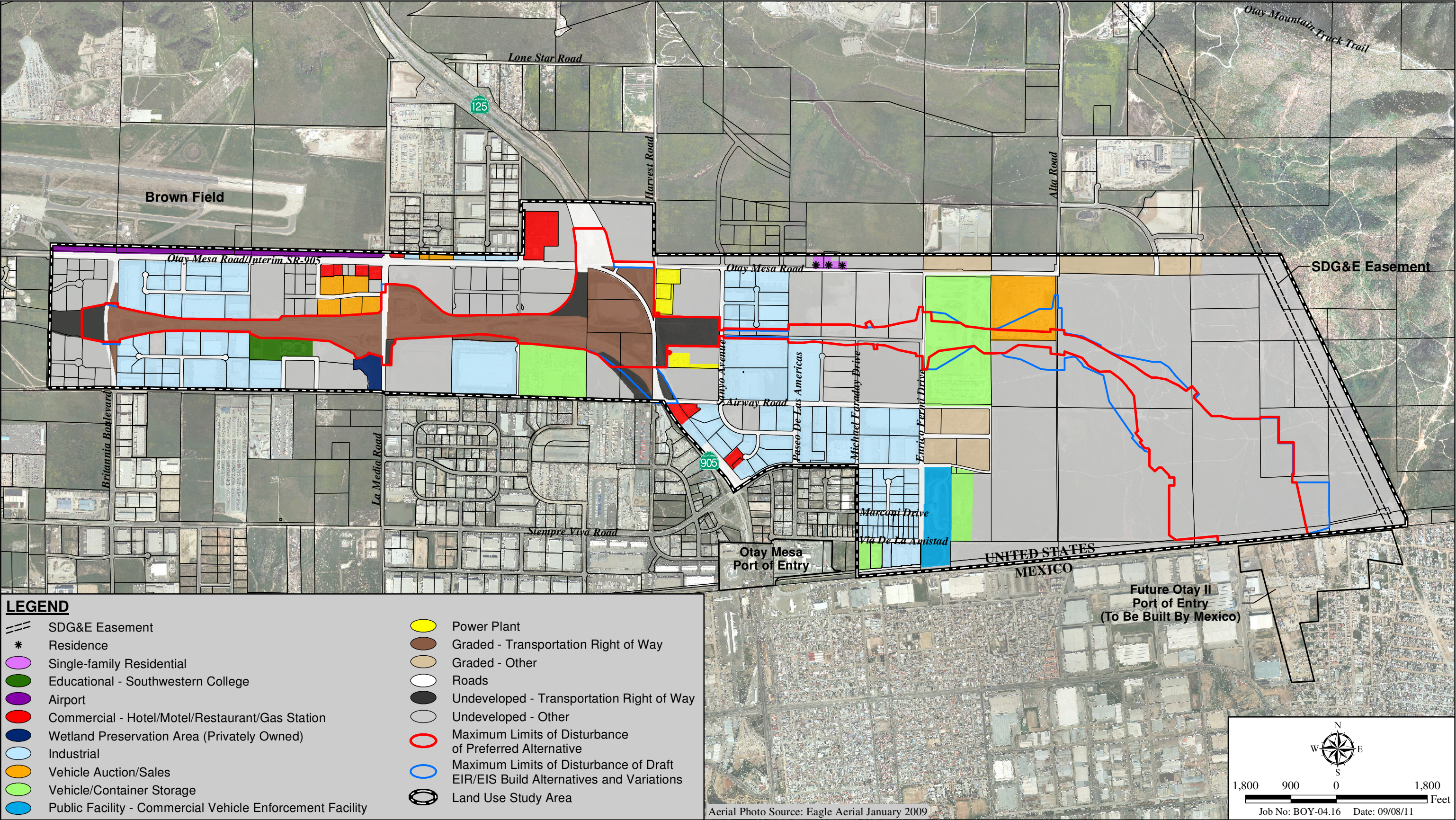
46-foot Median Variation

Land use conversion impacts in the Sanyo Avenue area would be greater under the 46-foot Median Variation, and efforts to minimize partial acquisitions and operational issues for existing businesses in this area would be less successful than under the Preferred Alternative or baseline Draft EIR/EIS build alternatives, any of which would have a 22-foot median. Nevertheless, the existing businesses would be able to continue operations, as discussed in more detail in Section 3.5, *Relocations and Real Property Acquisition*.

No Build Alternative

Unlike the project build alternatives, the No Build Alternative would not be consistent with regional and local planning documents. However, because no action would occur under the No Build Alternative, no avoidance, minimization, and/or mitigation measures would be required.

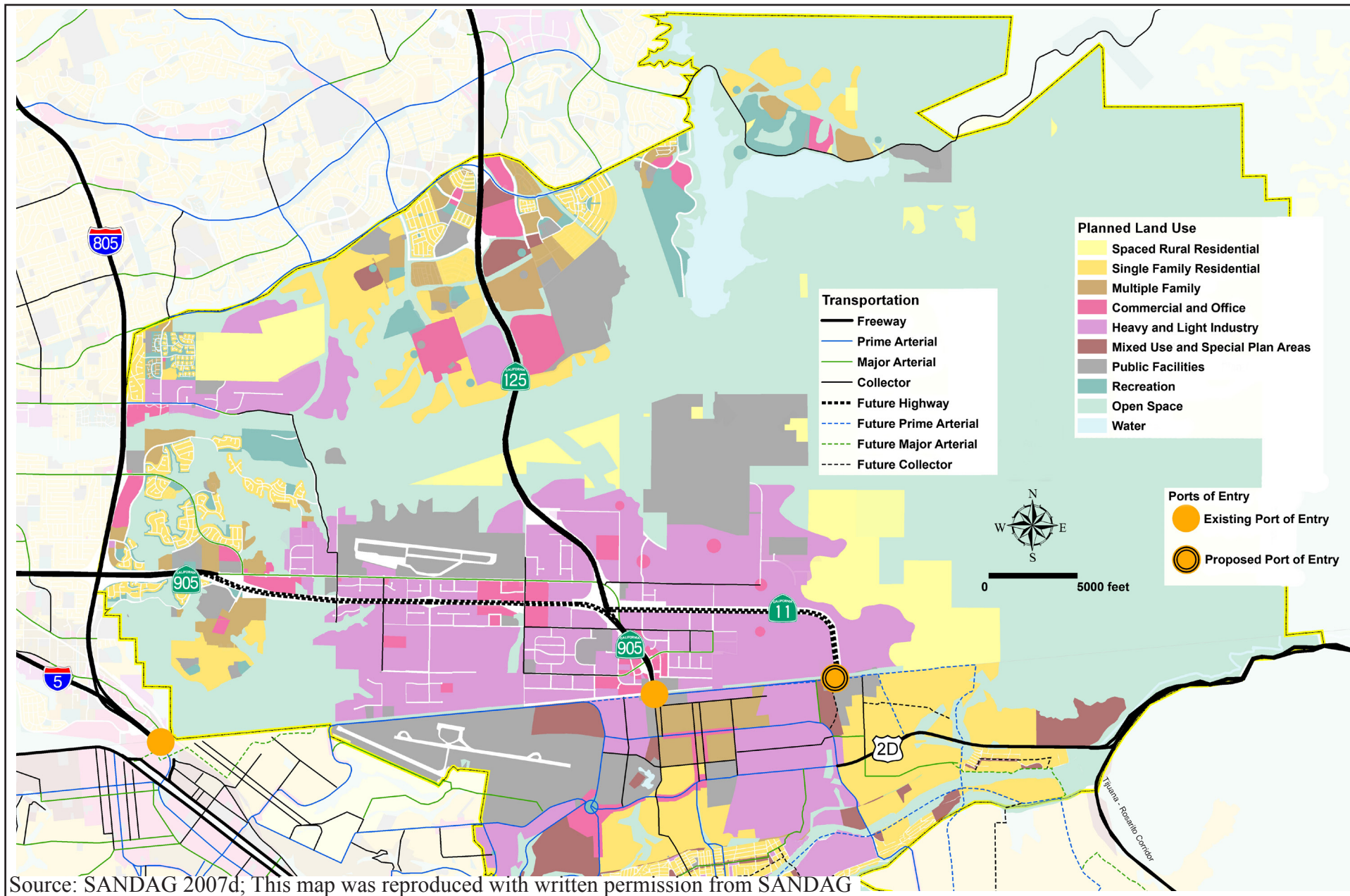
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Existing Land Uses in the Land Use Study Area

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

Figure 3.1-1



Planned Land Uses in the San Diego/Tijuana Border Region

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

Figure 3.1-2

3.2 CONSISTENCY WITH FEDERAL, STATE, REGIONAL, AND LOCAL PLANS AND PROGRAMS

This section of the Final EIR/EIS assesses the proposed project's consistency with relevant adopted land use plans and programs, based on the Tier II project CIA (HELIX/CIC Research 2010), dated July 2010, and Addendum to the Tier II CIA (CIC Research 2011).

3.2.1 Affected Environment

Plans, policies and ordinances that pertain to land use for the project site are contained in elements and policies of Section 4(f) of the DOT Act of 1966, the RTP, RTIP, Federal Statewide Transportation Improvement Program (FSTIP), U.S. Army Corps of Engineers (USACE) Special Area Management Plans (SAMPs), EO 12898, EO 13514, the U.S. Department of Housing and Urban Development (HUD)/DOT/EPA Partnership for Sustainable Communities SANDAG Regional Comprehensive Plan (RCP), Natural Community Conservation Planning (NCCP) Program, County General Plan, Otay Subregional Plan (OSP), the EOMSP, the County Zoning Ordinance, the County Light Pollution Code/Dark Skies Ordinance (LPC), the County Biological Mitigation Ordinance (BMO), the County Resource Protection Ordinance (RPO), the County Noise Ordinance, the City of San Diego's General Plan, the City's OMCP, and the City Noise Ordinance. These policies address a variety of issues, including development of a comprehensive regional transportation plan, efficient growth patterns, development at appropriate densities in accordance with existing community character, conservation of sensitive habitats, provision of open space and recreational opportunities, farmland policies, protection of visual amenities, regulation of signage and lighting, and protection against incompatible land uses. These land use plans and ordinances are described below. Although this project is not subject to local plans, guidelines, and ordinances, Caltrans and FHWA strive to be consistent with them, and inconsistencies are disclosed.

There are no wild and scenic rivers in the regional study area and the project alternatives are not located in the coastal zone; therefore, policies related to these issues are not discussed.

Federal Plans and Policies

U.S. Army Corps of Engineers Special Area Management Plans

SAMPs are developed by the USACE to take a comprehensive view of entire watersheds, in contrast to the traditional project-by-project approach to the analysis of impacts to waters of the U.S. The comprehensive SAMP approach facilitates evaluation of cumulative loss of resources over time, with the goal of identifying priority areas for preservation, identifying potential restoration areas, determining the least environmentally damaging locations for proposed projects, and establishing alternative permit processes applicable to the SAMP areas. The SAMP for the Otay River watershed, which would include the proposed project alternatives, is currently being developed and is not yet complete for review (Jones, personal communication 2010). Therefore, the SAMP is not analyzed here.

Federal Actions to Address Environmental Justice in Minority and Low-Income Populations (EO 12898)

Issues of Environmental Justice, as defined in EO 12898, are analyzed in Section 3.6 of this Final EIR/EIS.

Federal Leadership in Environmental, Energy, and Economic Performance (EO 13514)

EO 13514, signed in 2010, requires federal projects to incorporate an "integrated strategy towards sustainability." This executive order states:

In order to create a clean energy economy that will increase our Nation's prosperity, promote energy security, protect the interests of taxpayers, and safeguard the health of our environment, the Federal Government must lead by example. It is therefore the policy of the United States that Federal agencies shall increase energy efficiency; measure, report, and reduce their greenhouse gas emissions from direct and indirect activities; conserve and protect water resources through efficiency, reuse, and stormwater management; eliminate waste, recycle, and prevent pollution; leverage agency acquisitions to foster markets for sustainable technologies and environmentally preferable materials, products, and services; design, construct, maintain, and operate high performance sustainable buildings in sustainable locations; strengthen the vitality and livability of the communities in which Federal facilities are located; and inform Federal employees about and involve them in the achievement of these goals.

As a project incorporating federal funding, the proposed project is subject to the requirements of this executive order. In particular, the design of the federal POE would have to comply with these requirements.

HUD/DOT/EPA Partnership for Sustainable Communities

In June 2009, HUD, DOT and EPA entered into a partnership to improve coordination of federal housing, transportation, and environmental protection investments. The partnership is based on the following principles:

- Provide more transportation choices
- Promote equitable, affordable housing
- Enhance economic competitiveness
- Support existing communities
- Coordinate and leverage federal policies and investment
- Value communities and neighborhoods

The proposed project planning process is required to reflect the goals of the Partnership for Sustainable Communities.

Regional Plans and Policies

Border Master Plan

The California-Baja California Border Master Plan (Border Master Plan) is a binational comprehensive approach to coordinate planning and delivery of projects at land POEs and transportation infrastructure serving those POEs in the California-Baja California region. It was commissioned by the U.S./Mexico Joint Working Committee to Caltrans and the Secretariat of Infrastructure and Urban Development of Baja California (Secretaría de Desarrollo Urbano del Estado de Baja California or SIDUE) for the California-Baja California border region. The Border Master Plan ranks the Otay Mesa East/Otay II POEs (and associated infrastructure) as the highest priority border project in the California-Baja California region.

Regional Comprehensive Plan for the San Diego Region

The RCP (SANDAG 2004) is the strategic planning framework for the San Diego region. It creates a regional vision and provides a broad context in which local and regional decisions can be made that foster a healthy environment, vibrant economy and high quality of life for all residents. The RCP balances regional population, housing and employment growth with habitat preservation, agriculture, open space, and infrastructure needs. One of the major focuses of the RCP is improving connections between land use and transportation using smart growth principles. The RCP addresses the major elements of planning for the San Diego region, including urban form, transportation, housing, healthy environment, economic prosperity, public facilities, and border issues. The RCP recognizes that many of the region's major transportation facilities are operating at or beyond their current capacities. The Transportation and Border Elements of the RCP are discussed below.

Transportation Element

The Transportation Element of the RCP discusses the vision for the San Diego region in 2030 with regard to transportation and includes a description of existing conditions, key issues and recommended goals, policy objectives and actions. The 2050 RTP (SANDAG 2011) plays a key role in implementing the RCP, along with other plans and programs such as the Short-Range Transit Plan, the Congestion Management Program, the RTIP, international and interregional plans and partnerships, and others. In order to implement the RCP, the RTP and related programming documents must be updated in a way that maximizes opportunities for local jurisdictions to implement smart growth. Relevant key issues include implementing the transit and highway networks presented in the RTP, funding of necessary improvements and coordinating among agencies. Applicable policy objectives include implementing the RTP's transit and highway networks in an efficient and cost-effective manner, reducing traffic congestion on freeways and arterials, and providing improved access to goods movement centers and intermodal facilities to promote economic prosperity. Since the SR-11 project is included in the 2050 Revenue Constrained Highway Network of the RTP adopted in 2011, it would constitute an integral part of the realization of the RCP's goals.

Border Element

The Borders chapter of the RCP discusses the distinct opportunities and challenges of the cross-border region. General principles include integrated planning and economic development with governments of neighboring counties, tribal governments and Mexico. The chapter proposes policy objectives centered on the six planning issue areas of jobs/housing accessibility, transportation, energy and water supply, environment, economic development, and homeland security. The element offers a binational perspective on each of these issue areas, emphasizing the opportunities and challenges associated with the movement of people and goods across the international border while balancing national security concerns.

Regional Transportation Plan

The applicable transportation plan for the proposed project is the 2050 San Diego Regional Transportation Plan (2050 RTP). In October 2011, the SANDAG Board of Directors approved the 2050 RTP (SANDAG 2011), which is the adopted long-range transportation planning document for the San Diego region. It is used as the basis for funding decisions made through the RTIP (SANDAG 2010), which is discussed below. The plan covers public policies, strategies and investments to maintain, manage and improve the regional transportation system through 2050. The RTP is a major component of the transportation element of the RCP. The RTP and its associated Sustainable Communities Strategy (SCS) focus on land use, sustainability, social equity, financial strategies, public health, system development, system management, demand management, public involvement, and reduction of

greenhouse gas emissions to 1990 levels by 2020. The plan outlines projects for transit, rail and bus services, express or managed lanes, highways, local streets, bicycling, and walking. The result is expected to be an integrated, multimodal transportation system by mid-century.

Applicable policy goals of the 2050 RTP include providing convenient travel options to the general public and those who move goods (including expanding options for regional freight movement and providing choices to better connect the San Diego region with Mexico); operating the transportation system to maximize productivity; reducing travel times and costs; making the transportation system more reliable, safe, and well-maintained; encouraging growth closer to existing and planned developments; and enhancing the goods movement system to support economic prosperity.

The 2050 RTP includes a Revenue Constrained Plan of recommended transportation improvements based on current and reasonably available sources and levels of federal, state, and local transportation revenue, projected out to 2050. The RTP also includes an Unconstrained Needs Scenario. The RTP's study area is the County of San Diego. Figure 3.2-1, *Regional Transportation Plan 2050 Revenue Constrained Network*, illustrates the RTP Revenue Constrained Network for highways. The SR-11 project is included in both revenue scenarios of SANDAG's 2050 RTP as a four-lane toll road plus POE. The SR-905 project, which would be modified under the proposed SR-11/POE project, is also included in both revenue scenarios of the 2050 RTP (as a six-lane freeway in the Revenue Constrained Plan, and as an eight-lane freeway in the Unconstrained Needs Scenario).

In 2005, SANDAG formed a Regional Freight Working Group (FWG) composed of public and private freight agencies and organizations to develop a comprehensive Regional Freight Strategy. Initially, this strategy assumed an average annual growth rate of five percent for all freight. The Regional Freight Strategy identified a list of prioritized projects known as the San Diego Regional Goods Movement Action Plan (GMAP), based upon objective criteria. The Otay Mesa East POE and SR-11 were considered a top priority of the GMAP. The 2050 RTP included a 2050 Goods Movement Strategy (GMS), which developed a forecast and truck model and then produced a menu of projects that reflects the needs of the region and balances freight benefits with sustainability needs. The GMS also relies on the 2050 Comprehensive Freight Gateway Study conducted for the 2050 RTP. The goods movement portion of the 2050 network consists primarily of road and truckway projects that comprise the backbone of the freight distribution network. SR-11 and the Otay Mesa East POE form an important piece of the freight distribution network.

Regional and Federal Statewide Transportation Improvement Programs

The RTIP is consistent with the RTP and incrementally implements the vision presented in the RTP. The RTIP is a five-year capital improvement program for transportation projects that is updated by SANDAG every two years and reflects the region's priorities for short-range transportation system improvements. The currently adopted 2010 RTIP, as amended (SANDAG 2010) covers fiscal years (FYs) 2010/2011 through 2014/2015. Funding for the transportation projects in the RTIP comes from federal, state and local revenue sources, including TransNet, the local transportation sales tax program. The SR-11 project is included in the 2010 RTIP, allocating funds for studies for the future construction of a four-lane toll highway. The SR-905 project, to be modified under the proposed SR-11/POE project, is also included in the 2010 RTIP, allocating funds for Phase I of construction of a six-lane freeway between I-805 and the existing Otay Mesa POE. The January 2011 (Amendment 2) amendment to the 2010 RTIP reflects both SR-11 and the proposed project's modifications to SR-905 between the SR-905/SR-125/SR-11 Interchange and Britannia Boulevard, as necessary to accommodate the connection of SR-905 with SR -11, including the proposed auxiliary/merging lanes.

The 2011 FSTIP is a four year (federal fiscal years 2010/11 to 2013/14) statewide intermodal program of transportation projects that is consistent with the statewide transportation plan and planning processes, the metropolitan plans, and the FTIPs. The FSTIP incorporates all projects within and outside the boundaries of metropolitan planning organizations (MPOs) such as SANDAG, and reflects the state's priorities for short-range transportation system improvements.

Natural Community Conservation Planning Program/Multiple Species Conservation Programs

The NCCP initiated by the State of California in 1991 resulted in the promulgation of the special 4(d) rule of the Federal Endangered Species Act (FESA). This rule focuses on conserving coastal sage scrub habitat in order to avoid the need for future federal and state listing of each individual coastal sage scrub-dependent species. The City of San Diego, the County of San Diego, USFWS, California Department of Fish and Game (CDFG) and other local jurisdictions joined together in the late 1990s to develop the MSCP to meet the requirements of the NCCP. The MSCP is a comprehensive, long-term habitat conservation plan that addresses the needs of multiple species by identifying key areas for preservation as open space in order to link core biological areas into a regional wildlife preserve.

The project is located within the South County Segment of the County's MSCP Subarea Plan (Subarea Plan). The Subarea Plan assigns various development review process requirements for development projects within the planning area, based on the sensitivity of the geographic area within which the project is located. Although the proposed project is not subject to these processes, because Caltrans is not an enrolled agency under the MSCP and the project does not require County or City approval, the designations reflect the relative sensitivity of the biological resources in each mapped area. The land use study area contains four such designations: Take Authorized, Minor Amendment Area, Minor Amendment Area Subject to Special Considerations and Major Amendment Area. The Take Authorized area includes Enrico Fermi Drive. The majority of the rest of the land use study area is a Minor Amendment Area where habitat can be partially or completely eliminated (with appropriate mitigation) without significantly affecting the overall goal of the County's Subarea Plan (County 1997). Minor Amendment Areas Subject to Special Considerations occur in the southern and eastern portions of the land use study area. These are subject to certain requirements of the County's EOMSP, including the preparation and County approval of a Resource Conservation Plan prior to any development that includes clearing or grading. A Major Amendment Area occurs in the northeast corner of the land use study area. Major Amendment Areas require Wildlife Agency oversight to be processed in conformity with all applicable laws and regulations (County 1997).

The County is undergoing an amendment process for the Quino checkerspot butterfly for the entire County MSCP Subarea, including areas encompassed by the proposed SR-11/POE site.

The City's MSCP Subarea Plan has similarly been prepared to meet the requirements of the California NCCP Act of 1992. The City's MSCP Subarea Plan is consistent with the NCCP and describes how the evaluation of proposed development projects relative to the City's portion of the MSCP Preserve (the MHPA) will be implemented.

The City's MSCP (City 1997) identifies an MHPA that is intended to link all core biological areas into a regional wildlife preserve. The land use study area is not within or adjacent to the MHPA; the nearest MHPA preserve is south of Airway Road at La Media Road, approximately 1,300 feet south of the proposed modifications to SR-905 to accommodate the connectors with SR-11.

Complete Streets Policies of the U.S., California, Caltrans and the City

Complete streets are designed to provide convenient routes and a variety of transportation options while enabling safe access for motorists, transit users, pedestrians and bicyclists of all ages and abilities. The federal Complete Streets Act of 2009 defines complete streets policies and directs state departments of transportation and metropolitan planning organizations to adopt such policies and apply them to federally funded transportation projects. State, regional and local governments and organizations have also adopted related policies, including California's Complete Streets Act of 2008 (Assembly Bill 1358), Caltrans' Deputy Directive DD-64-R1 (Complete Streets – Integrating the Transportation System) and the City of San Diego's Street Design Manual.

San Diego County Plans and Policies

County General Plan

The County General Plan (adopted August 3, 2011) designates planned land uses that are considered appropriate for each portion of the County. In the Land Use Element of the General Plan, the existing regional policy category for the County portion of the proposed project site is Specific Plan Area. Various policies of the Land Use, Mobility, Conservation and Open Space, Safety and Noise elements of the General Plan would be applicable to the proposed project. These elements are discussed below.

Land Use Element: The Land Use Element of the County General Plan is a framework that provides maps, goals, and policies to guide planners, the general public, property owners, developers, and decision makers as to how lands are to be conserved and developed in the unincorporated County. The Land Use Element notes in the introduction that infrastructure such as roadways in the County of San Diego may be provided by independent agencies and special districts at the local, regional, state, and federal levels, and that actions taken by these independent districts for the planning, provision, and funding of public facilities are not subject to the County's land use authority. Policy LU-4.2 of the Land Use Element states that the County should "review, comment, and coordinate when appropriate on plans, projects, and proposals of overlapping or neighboring agencies to ensure compatibility with the County's General Plan, and that adjacent communities are not adversely impacted."

Mobility Element: The County General Plan's Mobility Element provides a framework for a balanced, multi-modal transportation system for the movement of people and goods within the unincorporated areas of the County of San Diego. A primary goal of the Mobility Element is a road network that accommodates build-out of the land use map while operating with acceptable levels of congestion. Of relevance to the proposed project, Policy M-5.2, Impact Mitigation for New Roadways and Improvements, requires that the County "coordinate with Caltrans to mitigate negative impacts from existing, expanded, or new State freeways or highways and to reduce impacts of road improvements and/or design modifications to State facilities on adjacent communities." In addition, the Mobility Element includes a number of goals and policies related to development of a safe and efficient road network that balances regional travel needs with the travel requirements and preferences of local communities; freight services that efficiently move goods and that are effectively linked to other transportation modes; and effective use of the existing transportation network through TSM and TDM. SR-11 is included conceptually in the Mobility Element Network of the adopted County General Plan. It notes that a "half rather than a full interchange with SR-11 is programmed in the 2030 RTP (Reasonably Expected Revenue scenario)."

Conservation and Open Space Element: The Conservation and Open Space Element addresses the conservation, development, and use of natural resources including water, forests, soils, rivers, mineral deposits, vegetation and wildlife habitat, astronomical dark sky, cultural sites, and open space. Of

relevance to the proposed project, it recognizes that significant portions of the County are publicly owned, and states that the County strives to work harmoniously with all such entities to achieve common goals related to conservation and open space.

Safety Element: The purpose of the Safety Element is to include safety considerations in the planning and decision-making process by establishing policies related to future development that will minimize the risk of personal injury, loss of life, property damage, and environmental damage associated with natural and man-made hazards. The Safety Element supports this principle through numerous policies that locate development away from hazardous areas and ensure safety and security for all communities within the County. Goals and policies of the Safety Element address the protection of residents and areas from wildland and urban fire, crime, hazardous materials incidents, flooding, earthquakes, and hazardous incidents from aircrafts.

Noise Element: A primary function of the Noise Element is to ensure that noise considerations are incorporated into the land use decision-making process. Policy N-4.3, Jurisdictional Coordination, requires the County to coordinate with Caltrans, the City of San Diego, and other adjacent jurisdictions, as appropriate, for early review of proposed new and expanded State freeways, highways, and road improvement projects within or affecting the unincorporated County to (1) locate facilities where the impacts to noise sensitive land uses would be minimized and to (2) develop and include noise abatement measures in the projects to minimize and/or avoid the impacts to noise sensitive land uses.

Otay Subregional Plan

The OSP (adopted May 18, 1983, GPA 83-01; amended July 27, 1994, GPA 94-02; adopted August 3, 2011) designates planned land uses in the Otay subregional area. The OSP currently shows the land use study area as having a single Land Use Element designation: (21) Specific Plan Area. Various Land Use, Public Services and Facilities, and Conservation Policies of the OSP would be applicable to the proposed project. The OSP recognizes in its Land Use, Circulation and Coordination Goals the need for a second POE in Otay, the impact a new POE would have on the local and regional road and highway network, and the need for planning coordination with Mexico. The County is currently preparing an update of the OSP in conjunction with the General Plan Update Draft Land Use Plan.

East Otay Mesa Specific Plan

The OSP was amended December 19, 1990, to designate East Otay Mesa as (21) Specific Plan Area and incorporate the EOMSP Guidelines. The original EOMSP and Site Planning and Design Guidelines were adopted in July 1994, and have been amended many times since. The western portion of the proposed land use study area lies within the EOMSP area. The most recent specific plan amendment, approved on September 15, 2010, recombined Subarea 1 and Subarea 2 of the EOMSP area (which had been created through an earlier amendment); modified the Specific Plan boundary in response to a voter initiative; and made minor revisions to the Circulation Plan, Land Use Plan and regulatory provisions. As depicted in Figure 3.2-2a, *East Otay Mesa Specific Plan Circulation Plan Map*, the revised EOMSP circulation plan includes SR-11 and the Otay Mesa East POE in locations approximately corresponding to the proposed project build alternatives (County 2010a). The identified conceptual POE site, however, is smaller than the POE site proposed as part of this project (approximately 22 acres compared to 101.1 acres). The Circulation Plan map also notes that “the alignment for SR-11 and interchange locations are being studied and may change.”

As noted in Section 3.1, *Existing and Future Land Use*, the majority of the County land in the land use study area is designated for industrial and technology business uses under the EOMSP, as amended (refer to Figure 3.2-2b, *East Otay Mesa Specific Plan Land Use Designations*). A small area in the northeast

corner of the land use study area is designated rural residential (one dwelling unit per 20 acres), and another small area at the northeast corner of the intersection of Alta Road and Otay Mesa Road is designated commercial. A range of alternative land use maps is being developed as part of the County's general plan update process and EIR. The anticipated preferred alternative identifies the land use study area as Specific Plan Area, accommodating uses specified in the specific plan (County 2011b).

County Biological Mitigation Ordinance

The BMO is the mechanism by which the County implements the MSCP at the project level to attain the goals set forth in the County MSCP Subarea Plan. The BMO contains design criteria and mitigation standards that, when applied to projects requiring discretionary permits, protect habitats and species and ensure that a project does not preclude the viability of the MSCP Preserve System. In this way, the BMO promotes the preservation of lands that contribute to contiguous habitat core areas or linkages. Under the BMO, the habitat located within proposed SR-11 and the POE site qualifies as a BRCA, with associated avoidance and mitigation requirements specified in the BMO. Although the proposed SR-11/Otay Mesa East POE project does not require County approval, Caltrans does strive to be consistent with County policies and ordinances.

County Resource Protection Ordinance

The RPO (effective April 20, 2007) provides development controls for unique resources within the County deemed to be fragile, irreplaceable and vital to the general welfare of the County's residents. The resources protected by the County include: steep slopes, sensitive biological habitats, wetlands, floodways, floodplain fringes, and certain prehistoric and historic sites. The RPO requires that prior to approval of tentative maps or Major Use Permits (MUPs), a Resource Protection Study must be completed and findings made relative to compliance with the provisions of the RPO. Although the proposed SR-11/Otay Mesa East POE project does not require County approval, Caltrans does strive to be consistent with County policies and ordinances.

City of San Diego Plans and Policies

City General Plan

The General Plan (City 2008) represents the comprehensive long-term plan for the physical development of the City and provides a foundation for land use decisions within the City. In order to achieve this plan, the General Plan includes a series of elements that address specific aspects of the City's development. The General Plan elements that relate to the project are the Mobility Element and the Economic Prosperity Element. The Mobility Element contains goals and policies intended to attain a balanced, multi-modal transportation network that will accommodate forecast capacity needs and foster economic growth. The Economic Prosperity Element of the General Plan is intended to increase wealth and the standard of living of all San Diegans with policies that support a diverse, innovative, competitive, entrepreneurial, and sustainable local economy.

City Otay Mesa Community Plan

In addition to the provisions of the City's General Plan Elements, development in the land use study area is governed by the goals, objectives and policies of the OMCP. Adopted in 1981, the OMCP designates the majority of land in Otay Mesa for industrial uses (see Figure 3.2-3, *Adopted Otay Mesa Community Plan Land Use Designations*). In the eastern area of the OMCP, adjacent to the proposed project, land is exclusively designated for industrial uses, with the exception of Brown Field, which is designated for aviation uses; the existing Otay Mesa POE, which is designated for institutional uses; the areas around the

existing POE and adjacent to the southeast corner of Brown Field, which are designated for commercial uses; and two strips of land, one north and east of Brown Field and another south of Airway Road along La Media Road, that are designated as open space. Under the current OMCP, residential uses are restricted to the western portion of the planning area.

The OMCP in general and the Border Crossing section of the Land Use Element, in particular, recognize the importance of the international border and make recommendations for improved border crossing, including provision of public facilities to accommodate development and commercial and industrial inter-cooperation with Mexico.

The OMCP is in the process of being updated. In the currently adopted OMCP, the designated land uses abutting the eastern portion of the SR-905 R/W are Industrial Parks and Specialized Commercial (City of San Diego 2009). Under the currently proposed plan presented in the April 6, 2011 Public Draft OMCP Update, the areas adjacent to the proposed project modifications to SR-905 would be designated Light Industrial, Heavy Industrial, Heavy Commercial, International Business and Trade, Community Village (30 to 45 dwelling units [DU] per acre), Business Park – Office Permitted, Business Park - Residential Permitted (15 to 44 DU per acre), Institutional, and Open Space. The eventual configuration of the OMCP that will be adopted by the City is unknown at this time, so consistency analysis can only focus on the currently adopted OMCP.

3.2.2 Environmental Consequences

The consistency of the project alternatives with state, regional and local plans is discussed below, and summarized in Table 3.2-1, at the end of this section.

Preferred Alternative and Draft EIR/EIS Build Alternatives

Consistency with Federal Actions to Address Environmental Justice in Minority and Low-Income Populations (EO 12898)

Project consistency with EO 12898 is analyzed in Section 3.6 of this Final EIR/EIS. This analysis concludes that implementation of the Preferred Alternative or any of the other build alternatives would be consistent with EO 12898.

Federal Leadership in Environmental, Energy, and Economic Performance (EO 13514)

Implementation of the Preferred Alternative or any of the other build alternatives would be consistent with the principles of this Executive Order. The POE, which is currently being designed as part of the PDS process, is intended to be LEED certified, and storm water management measures would apply to SR-11, the POE and the CVEF. Specific mitigation measures to address the various requirements of the EO are included in Section 3.18 of this Final EIR/EIS.

Consistency with the HUD/DOT/EPA Partnership for Sustainable Communities

Implementation of the Preferred Alternative or any of the other build alternatives , would be consistent with the principles of this partnership, as follows:

- They would provide new transportation choices (a tolled border crossing option for commercial and passenger vehicles to save time, accommodations for future transit service, and free passage for pedestrians and bicycles crossing the border);

- They would enhance national, regional and local economic competitiveness by reducing the border bottleneck;
- They would coordinate and leverage federal policies and investments (since the interagency work groups have been involved throughout the project planning process, and the toll structure involving private investment would leverage federal investment and create a self-sustaining project); and
- No direct adverse effects on housing, communities and neighborhoods would occur as a result of the project build alternatives, but indirect benefits are anticipated. There are no residential communities immediately adjacent to the project that could be adversely affected by the project. The nearby communities of Otay Mesa, Nestor, San Ysidro and Chula Vista support some of the most affordable housing in the County and could indirectly benefit from the additional commerce, east Otay Mesa and cross-border access, and more than 600 jobs at the POE/CVEF.

Consistency with the Border Master Plan

Because the Border Master Plan ranks the Otay Mesa East/Otay II POEs (and associated infrastructure) is the highest priority border project in the California-Baja California region, implementation of the Preferred Alternative or any of the other build alternatives would be consistent with the Border Master Plan and its focus on current and projected POE travel demand, cross-border trade, congestion at POEs and transportation facilities, cost effectiveness, project performance, project readiness, and regional benefit. Inclusion of this project placed in the CBP five-year plan is anticipated.

Consistency with the Transportation and Border Elements of the Regional Comprehensive Plan for the San Diego Region

Implementation of the Preferred Alternative or any of the other build alternatives would contribute to implementation of the goals presented in the RCP and key policy objectives of its Transportation Element. Vehicles and pedestrians would receive an additional border crossing option, and would be subjected to shorter wait times at the new POE than are currently experienced at the existing POEs. Delays for other vehicles and pedestrians who choose to cross the U.S. - Mexico international border at the San Ysidro or Otay Mesa POEs instead of the new POE also would be reduced with implementation of any of the build alternatives, due to diversion of congestion away from these existing POEs. In this way, the build alternatives would increase the range of convenient, efficient, and safe travel choices available, and improve overall mobility in the region. The build alternatives, which include the accommodation of transit needs, are designed to improve the connectivity of different transportation modes, facilitate equitable and accessible transportation services, and distribute the potential benefits and burdens of the project in an equitable manner. Accordingly, the build alternatives would be consistent with the Transportation Element of the RCP.

By reducing border wait times, the build alternatives would also promote increased collaborative economic development and transportation strategies; encourage better job accessibility; address international commute patterns; ensure an efficient flow of people and goods across the border; reduce binational commuting times; ensure protection of residents and infrastructure; and balance the implementation of homeland security measures with efficient cross-border and interregional travel and economic prosperity. Accordingly, the build alternatives would be consistent with the Border Element of the RCP.

Consistency with the Regional Transportation Plan

As previously stated, the 2050 RTP (SANDAG 2011) includes the proposed project in its Revenue Constrained scenario. Consistent with key policy objectives of the RTP, the Preferred Alternative or any

of the other build alternatives would increase inspection processing capacities, and reduce queues and wait times at the existing POEs; thereby improving the mobility of goods and people, and positively impacting the reliability and safety of the overall regional transportation system. At the same time, the build alternatives would help improve the efficiency of the existing and future transportation system by reducing the border bottleneck at existing POEs, while minimizing effects on the environment. In summary, the implementation of any of the build alternatives would improve the efficiency, reliability, and sustainability of border crossing activities in the region.

As discussed in the project Tier II *Natural Environment Study* (NES; Caltrans 2010g), the build alternatives have been designed to avoid, minimize or mitigate effects on biological resources and the surrounding community. The SR-11 project is included in all revenue scenarios of SANDAG's 2050 RTP as a four-lane toll facility. The SR-905 project is included in all revenue scenarios of the 2050 RTP as either a six- or eight-lane facility. The proposed project, including the proposed modifications to SR-905, would be consistent with the RTP. The Otay Mesa East POE and SR-11 are considered a top priority of the RTP Goods Movement Action Plan (SANDAG 2007a) and the 2050 GMS portion of the 2050 RTP (SANDAG 2011). Therefore, the Preferred Alternative or any of the other build alternatives would be consistent with the RTP.

Consistency with the Regional and Federal Statewide Transportation Improvement Programs

As discussed above in Section 3.2.1, *Affected Environment*, SR-11 and the POE are included in the adopted SANDAG 2010 RTIP, as amended. Inclusion of the proposed project's components in the RTIP ensures the implementation of the transportation system improvement priorities as outlined in the RTP. Amendment 2 to the 2010 RTIP, addressing SR-11 changes to SR-905 and the toll nature of SR-11, has been incorporated into the FSTIP. The 2010 RTIP, FSTIP, regional conformity analysis, and the project have consistent descriptions regarding the toll highway designation and the limits of work, and would therefore meet conformity requirements. The Preferred Alternative or any of the other build alternatives would be consistent with the RTIP and FSTIP.

Consistency with the MSCP, County BMO and County RPO

As addressed in the project Tier II NES, implementation of the Preferred Alternative or any of the other build alternatives would impact biological resources protected under the NCCP/MSCP. As noted above in Section 3.2.1 under discussion of the NCCP/MSCP, Caltrans is not an enrolled agency under the MSCP, and implementation of the build alternatives would not require local agency approval, but Caltrans does strive to be consistent with the MSCP and other local plans. Under any of the build alternatives, Caltrans would work with the resource agencies to include acceptable measures to avoid, minimize or mitigate impacts to biological resources protected under the MSCP, County BMO and County RPO. The proposed project would not impact habitat preserved within the South County segment of the County's MSCP Subarea Plan or in the Southern Area of the City's MSCP Subarea Plan, and therefore, would not compromise the goal of these plans to provide long-term habitat conservation for the non-listed special status animal species (with the exception of the burrowing owl). The mitigation for impacts to the burrowing owl would include preservation and artificial burrows in accordance with the County's new burrowing owl strategy, and, therefore, would be consistent with the MSCP, BMO and RPO (refer to section 3.22).

Consistency with the Complete Streets Policies of the U.S., California, Caltrans, and the City

SR-11 would accommodate commercial, personal and transit vehicles. Pedestrians and cyclists would be accommodated at the POE, as well as at the over- and undercrossings with local surface streets. Parking areas would be provided at the POE to allow cyclists or pedestrians to be picked up or dropped off safely.

Additionally, proposed improvements include reservation of space for potential development of a future transit center to encourage use of diversified transportation modes. The Preferred Alternative or any of the other build alternatives would therefore be in compliance with the objectives of all applicable complete streets policies.

Consistency with the County General Plan, the Otay Subregional Plan and the East Otay Mesa Specific Plan

Facilities included in the build alternatives are contemplated in the County General Plan, OSP and EOMSP. The most recent amendment to the EOMSP shows an SR-11 alignment that closely approximates the proposed build alternatives; as a result, the Preferred Alternative or any of the other build alternatives would be largely consistent with the County General Plan, OSP and EOMSP. It is noted, however, that changes in the EOMSP Circulation Element would be needed to accommodate the following aspects of the proposed project design under the various project alternatives:

- Because the Circulation Element currently shows SR-11 as including interchanges at Enrico Fermi Drive and Siempre Viva Road, the One and No Interchange Alternatives would require adjustments to the Circulation Element assumptions for SR-11, as well as the current circulation and land use planning assumptions used for the active tentative maps in the EOMSP (refer to Figure 3.2-2a). In addition, the Circulation Element identified a full interchange at Siempre Viva Road, which would only be implemented by the Siempre Viva Road Full Interchange Variation of the Two Interchange Alternative. The Preferred Alternative would include a more complete interchange at Siempre Viva Road Interchange than would the “baseline” Two Interchange Alternative, but would still require adjustments to the EOMSP Land Use and Circulation Elements.
- As presented in Figure 2-2, *Comparative Overview of the Draft EIR/EIS Build Alternatives*, adjustments to the Circulation Element alignments of future Siempre Viva Road, Airway Road, Lonestar Road and Roque Road would be required to accommodate the proposed project.
- Because the Circulation Element and Land Use Element currently show the conceptual POE site to be smaller than the POE site proposed as part of this project (approximately 22 acres compared to 101.1 acres), implementation of the Preferred Alternative or any of the other build alternatives would require adjustments to the EOMSP Land Use and Circulation Elements.

The stated goal of Policy C-16 of the EOMSP is to support a future international border crossing in East Otay Mesa. It states that “the Specific Plan should be compatible and consistent with the proposed location of an international border crossing in the southeastern portion of the Specific Plan as well as expansion plans for the existing border crossing in the City of San Diego. The proposed corridor alignment for State Route 11 is subject to change upon the completion of Caltrans’ Environmental Studies. The north-south boundaries of adjacent land uses are intended to conform with the final alignment of future SR-11.” Furthermore, Policy C-2 of the EOMSP states that “the County will coordinate with Caltrans to promote the development of SR-905 and SR-11 from the existing and planned international border crossings to I-805.” (County 2010a).

Given the language in the EOMSP recognizing the likely need for Circulation Plan adjustments to accommodate SR-11 and the new POE, the Preferred Alternative or any of the other build alternatives would be consistent with the County General Plan, Otay Subregional Plan and EOMSP.

Consistency with the Mobility and Economic Prosperity Elements of the City of San Diego General Plan and the Otay Mesa Community Plan

SR-11 is included conceptually in the current City OMCP and, by extension, the City General Plan. Neither the Preferred Alternative nor any of the other build alternatives would conflict with the intended industrial development of the area as designated in the OMCP. They would, furthermore, be consistent with the goals and objectives of keeping pace with the rate and demands of development while promoting “commercial and industrial inter-cooperation” with Mexico, as specified in the City OMCP.

The Preferred Alternative or any of the other build alternatives would be consistent with applicable policies contained in the Mobility and Economic Prosperity Elements of the General Plan (listed above under Section 3.2.1). As promoted in the Mobility Element, the proposed implementation of a new POE would help provide adequate capacity and reduce congestion for cross-border transportation; be designed to facilitate safe and accessible multi-modal transportation through provision of a pedestrian crossing, bicycle facilities and a transit center site; and promote the efficient use of the City’s existing transportation network. In particular, all build alternatives are expected to relieve pressure on existing transit, vehicle and pedestrian movement at the existing POEs.

The Economic Prosperity Element contains a number of policies related to improvements in border crossing efficiency, enhanced linkages, improved border appearance, border security, use of border technology, and international cooperation. The Preferred Alternative or any of the other build alternatives would be consistent with these policies; since they would provide an alternative to the existing POEs (thus reducing wait times), would be designed to current urban design standards, would implement state-of-the-art border security programs under the control of CBP and would coordinate with the Mexican authorities for optimum binational cooperation in design and operations.

The Preferred Alternative or any of the other build alternatives would therefore be consistent with the Mobility and Economic Prosperity Elements of the City General Plan.

Summary for the Preferred Alternative and Draft EIR/EIS Build Alternatives

In summary, the build alternatives would be consistent with all required plans and policies, and no substantial land use plan consistency impacts would occur.

Variations on the Draft EIR/EIS Build Alternatives

No Toll Variation

The No Toll Variation would be inconsistent with the RTP, the 2010 RTIP, and the 2011 FSTIP, because SR-11 is currently listed in these plans as a toll highway. Implementation of the No Toll Variation would have to be addressed in the RTP, RTIP and FSTIP to assure consistency, but would not alter the conclusions reached for the Draft EIR/EIS build alternatives regarding consistency with all other plans and policies analyzed.

46-foot Median Variation, SR-905/SR-125/SR-11 Interchange Variations and Siempre Viva Road Full Interchange Variation.

Implementation of the 46-foot Median Variation or the SR-905/SR-125/SR-11 Interchange design variations or the Siempre Viva Road Full Interchange Variation would not affect the conclusions assessed for the Draft EIR/EIS build alternatives regarding plan consistency.

No Build Alternative

Consistency with Federal Actions to Address Environmental Justice in Minority and Low-Income Populations (EO 12898)

Project consistency with EO 12898 is analyzed in Section 3.6 of this Final EIR/EIS. This analysis concludes that marginally adverse environmental justice impacts would be expected to result from the No Build Alternative, and the beneficial impacts that would be expected to result from the Preferred Alternative or any of the other build alternatives would not be realized under the No Build Alternative. Therefore, the No Build Alternative would not be consistent with EO 12898.

Federal Leadership in Environmental, Energy, and Economic Performance (EO 13514)

Implementation of the No Build Alternative would be inconsistent with the principles of this EO, since it would not contribute to the creation of a clean energy economy supporting our Nation's prosperity, promote energy security, protect the interests of taxpayers, and safeguard the health of our environment.

Consistency with the HUD/DOT/EPA Partnership for Sustainable Communities

Implementation of the No Build Alternative would be inconsistent with the principles of this partnership, since it would not provide new transportation choices; enhance national, regional and local economic competitiveness by reducing the border bottleneck; coordinate and leverage federal policies and investments; or result in indirect benefits for nearby affordable housing areas.

Consistency with the Border Master Plan

The No Build Alternative would not be consistent with the Border Master Plan's ranking of the Otay Mesa East/Otay II POEs (and associated infrastructure) as the highest priority border project in the California-Baja California region, and would prevent full implementation of this plan.

Consistency with the Transportation and Border Elements of the Regional Comprehensive Plan for the San Diego Region

The No Build Alternative would not contribute to implementation of the goals presented in the RCP and key policy objectives of its Transportation Element. Neither a reduction in cross-border delay times nor increased connectivity would occur. In this way, the No Build Alternative would not improve overall mobility in the region and; accordingly, it would be inconsistent with the Transportation and Border Elements of the RCP.

Consistency with the Regional Transportation Plan

The No Build Alternative would not implement the goals of the RTP of improving the efficiency, reliability, and sustainability of border crossing activities in the region and would not implement the Revenue Constrained Scenario of the RTP, which specifies the construction of SR-11. The No Build Alternative would therefore not be consistent with the RTP.

Consistency with the Regional and Federal Statewide Transportation Improvement Programs

The No Build Alternative would not implement the goals of the RTP discussed above. Furthermore, this scenario would not implement the 2010 RTIP and the 2011 FSTIP, which anticipate near-term action to

carry out the proposed project within the time frames of the current RTIP and FSTIP. Therefore, the No Build Alternative would not be consistent with the RTIP or the FSTIP.

Consistency with the MSCP, County BMO and County RPO

As no activity or land use changes would occur on the site, implementation of the No Build Alternative would not impact sensitive biological resources that are protected under the MSCP, County BMO and County RPO. Thus, the No Build Alternative would not conflict with the MSCP, County BMO or County RPO.

Consistency with the Complete Streets Policies of the U.S., Caltrans and the City

As no action would occur on the site, implementation of the No Build Alternative would not result in the construction of transportation facilities subject to Complete Streets policies. Thus, the No Build Alternative would not conflict with federal, state or local Complete Streets policies.

Consistency with the County General Plan, the Otay Subregional Plan and the East Otay Mesa Specific Plan

The No Build Alternative would not implement the facilities assumed in the County General Plan, OSP and EOMSP. As a result, the No Build Alternative would not be consistent with the County General Plan, OSP or EOSMP.

Consistency with the Mobility and Economic Prosperity Elements of the City of San Diego General Plan and the Otay Mesa Community Plan

The No Build Alternative would not advance the goals of the Mobility and Economic Prosperity Elements of the City General Plan. The No Build Alternative would not aid in reducing border congestion, promote the City's transportation network, promote cross-border connectivity, or facilitate cooperation with Mexican authorities for optimum bi-national cooperation of cross-border operations. The No Build Alternative would therefore be inconsistent with the Mobility and Economic Prosperity Elements of the City General Plan.

Summary for the No Build Alternative

In summary, the No Build Alternative would be inconsistent with EO 12898, EO 13514, HUD/DOT/EPA Partnership for Sustainable Communities, Border Master Plan, RCP, RTP, RTIP, FSTIP, County General Plan, OSP, EOMSP, City General Plan, and the OMCP, resulting in a land use plan consistency impact.

Summary of Planning Document Consistency for All Project Build Alternatives

The consistency of the proposed project alternatives with applicable planning documents is summarized in Table 3.2-1, *Consistency of Project Alternatives and Variations with State, Regional and Local Plans and Executive Orders*, below.

**Table 3.2-1
CONSISTENCY OF PROJECT ALTERNATIVES AND VARIATIONS WITH STATE, REGIONAL, AND LOCAL PLANS AND
EXECUTIVE ORDERS**

Planning Document	Description	Alternative/Variation			
		Preferred and Other Build Alternatives	No Toll	Other Variations	No Build
EO 12898: Environmental Justice in Minority and Low-Income Populations	Executive Order directing federal agencies to take the appropriate and necessary steps to identify and address disproportionately high and adverse effects of federal projects on the health or environment of minority and low-income populations	C	C	C	I
EO 13514: LEED Performance	Executive Order requiring federal projects to incorporate an "integrated strategy towards sustainability".	C	C	C	I
HUD/DOT/EPA Partnership for Sustainable Communities	Federal agency partnership to improve coordination of federal housing, transportation, and environmental protection investments	C	C	C	I
Border Master Plan	A binational comprehensive approach to coordinate planning and delivery of projects at land POEs and transportation infrastructure serving those POEs in the California-Baja California region	C	C	C	I
Regional Comprehensive Plan	The strategic planning framework for the San Diego region. Addresses the major elements of planning for the region, including urban form, transportation, housing, healthy environment, economic prosperity, public facilities, and border issues	C	C	C	I
Regional Transportation Plan	The adopted long-range transportation planning document for the San Diego region. Addresses new and improved connections to more efficiently move people and goods throughout the region by providing more convenient, fast and safe travel choices for public transit, ridesharing, walking, biking, private vehicles, and freight	C	I	C	I

C = Consistent; I = Inconsistent

Table 3.2-1 (cont.) CONSISTENCY OF PROJECT ALTERNATIVES AND VARIATIONS WITH STATE, REGIONAL, AND LOCAL PLANS AND EXECUTIVE ORDERS					
Planning Document	Description	Alternative/Variation			
		Preferred and Other Build Alternatives	No Toll	Other Variations	No Build
Regional Transportation Improvement Program	A five-year capital improvement program for transportation projects that is updated by SANDAG every two years and reflects the region's priorities for short-range transportation system improvements	C	I	C	I
Federal Statewide Transportation Improvement Program	A four-year statewide capital improvement program for transportation projects that incorporates all projects within and outside the boundaries of metropolitan planning organizations such as SANDAG, and reflects the state's priorities for short-range transportation system improvements	C	I	C	I
Complete Streets	A series of federal, state and local policies emphasizing the integration of diverse transportation modes to ensure safe access to transportation for users of all ages and abilities	C	C	C	C
Multiple Species Conservation Program	A comprehensive, long-term habitat conservation plan that addresses the needs of multiple species by identifying key areas for preservation as open space in order to link core biological areas into a regional wildlife preserve	C	C	C	C
County Biological Mitigation Ordinance	The mechanism by which the County implements the MSCP at the project level. Contains design criteria and mitigation standards that, when applied to projects requiring discretionary permits, protect habitats and species and ensure that a project does not preclude the viability of the MSCP Preserve System	C	C	C	C
County Resource Protection Ordinance	Provides development controls for unique resources within the County deemed to be fragile, irreplaceable and vital to the general welfare of the County's residents. Resources protected by the County include: steep slopes, sensitive habitat lands, wetlands, wetland buffers, floodways, floodplain fringes, and certain prehistoric and historic sites	C	C	C	C

C = Consistent; I = Inconsistent

Table 3.2-1 (cont.)
CONSISTENCY OF PROJECT ALTERNATIVES AND VARIATIONS WITH STATE, REGIONAL, AND LOCAL PLANS AND EXECUTIVE ORDERS

Planning Document	Description	Alternative/Variation			
		Preferred and Other Build Alternatives	No Toll	Other Variations	No Build
County General Plan	Designates planned land uses that are considered appropriate for each portion of the County. Applicable elements include the Open Space, Regional Land Use, Circulation, Seismic Safety, Conservation, Public Facility, Public Safety, Scenic Highway and Noise elements	C	C	C	I
Otay Subregional Plan	Designates planned land uses in the Otay subregional area	C	C	C	I
East Otay Mesa Specific Plan	Establishes standards for development, environmental conservation, and public facilities to implement objectives of the County Diego General Plan and Otay Mesa Subregional Plan	C	C	C	I
City General Plan	Represents the comprehensive long-term plan for the City's physical development. Applicable elements include the Mobility Element, intended to attain a balanced, multi-modal transportation network that will accommodate forecast capacity needs and foster economic growth, and the Economic Prosperity Element, intended to support a diverse, innovative, competitive, entrepreneurial, and sustainable local economy	C	C	C	I
Otay Mesa Community Plan	Designates land uses and includes goals for future development, including industrial and commercial activity and international cooperation	C	C	C	I

C = Consistent; I = Inconsistent

3.2.3 Avoidance, Minimization, and/or Mitigation Measures

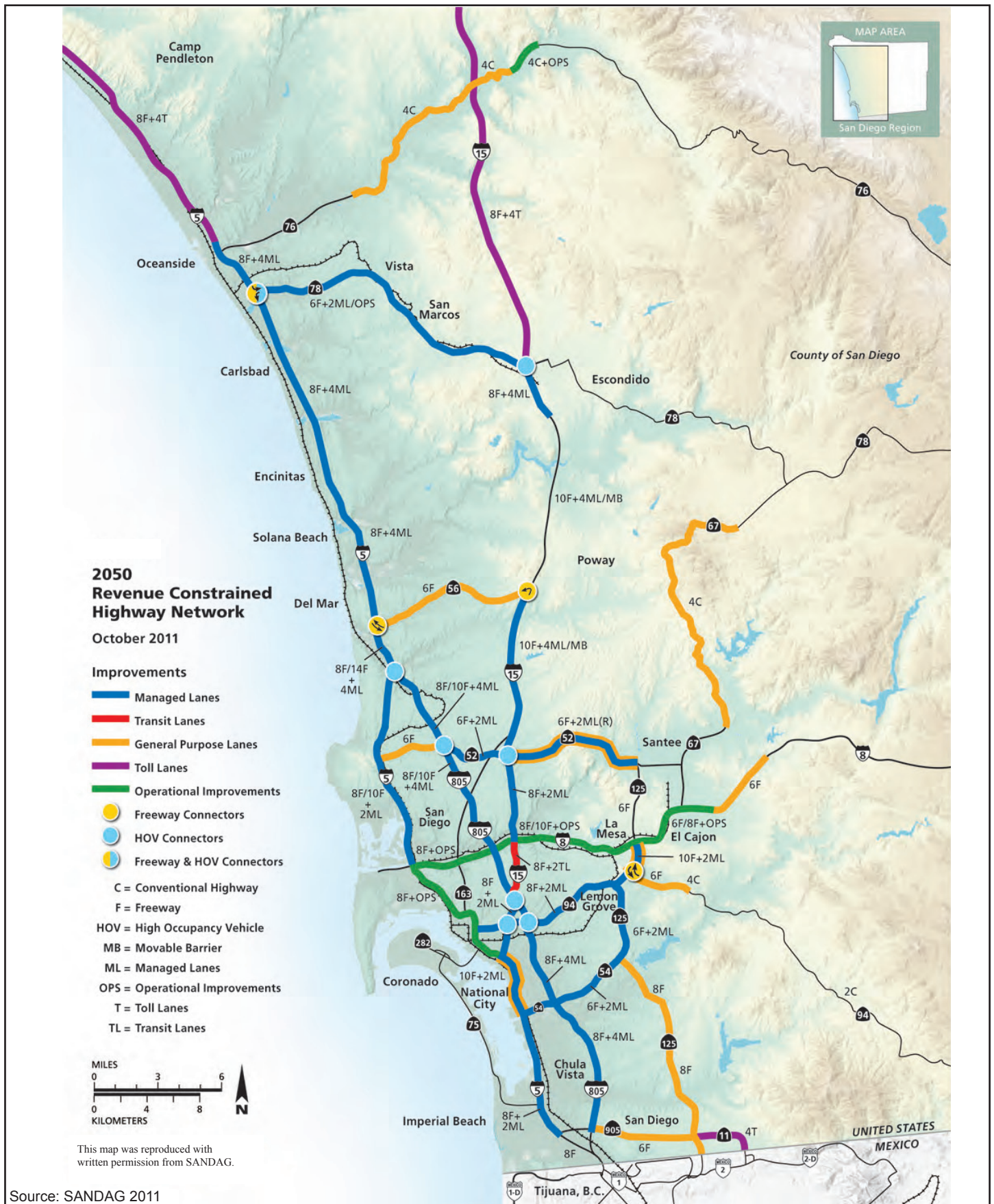
Preferred Alternative and Draft EIR/EIS Build Alternatives

No substantial land use plan consistency impacts are anticipated under the Preferred Alternative or any of the other build alternatives. The No Toll Variation would present an inconsistency with the RTP, RTIP and FSTIP, and would have to be addressed in a future RTIP/FSTIP amendment to assure consistency, but would not alter the conclusions assessed for the project build alternatives regarding consistency with all other plans and policies analyzed. No avoidance, minimization or mitigation measures are proposed for the build alternatives. Potential measures to address impacts to protected resources under the NCCP/MSCP are discussed in Sections 3.19 through 3.24.

No Build Alternative

Although the No Build Alternative would be inconsistent with several applicable plans and policies, no action would occur. No associated avoidance, minimization or mitigation measures would be required.

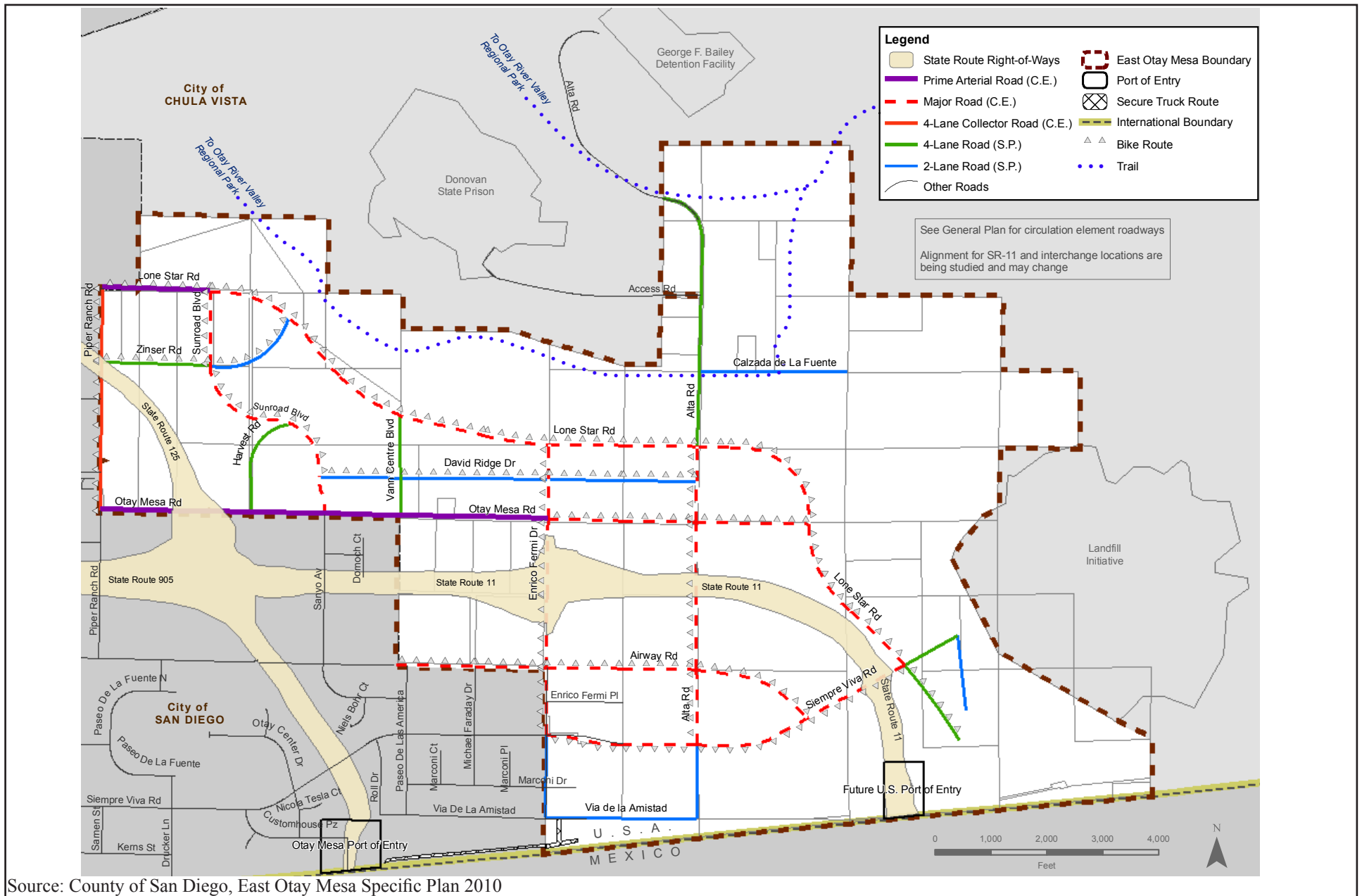
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Regional Transportation Plan 2050 Revenue Constrained Network

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

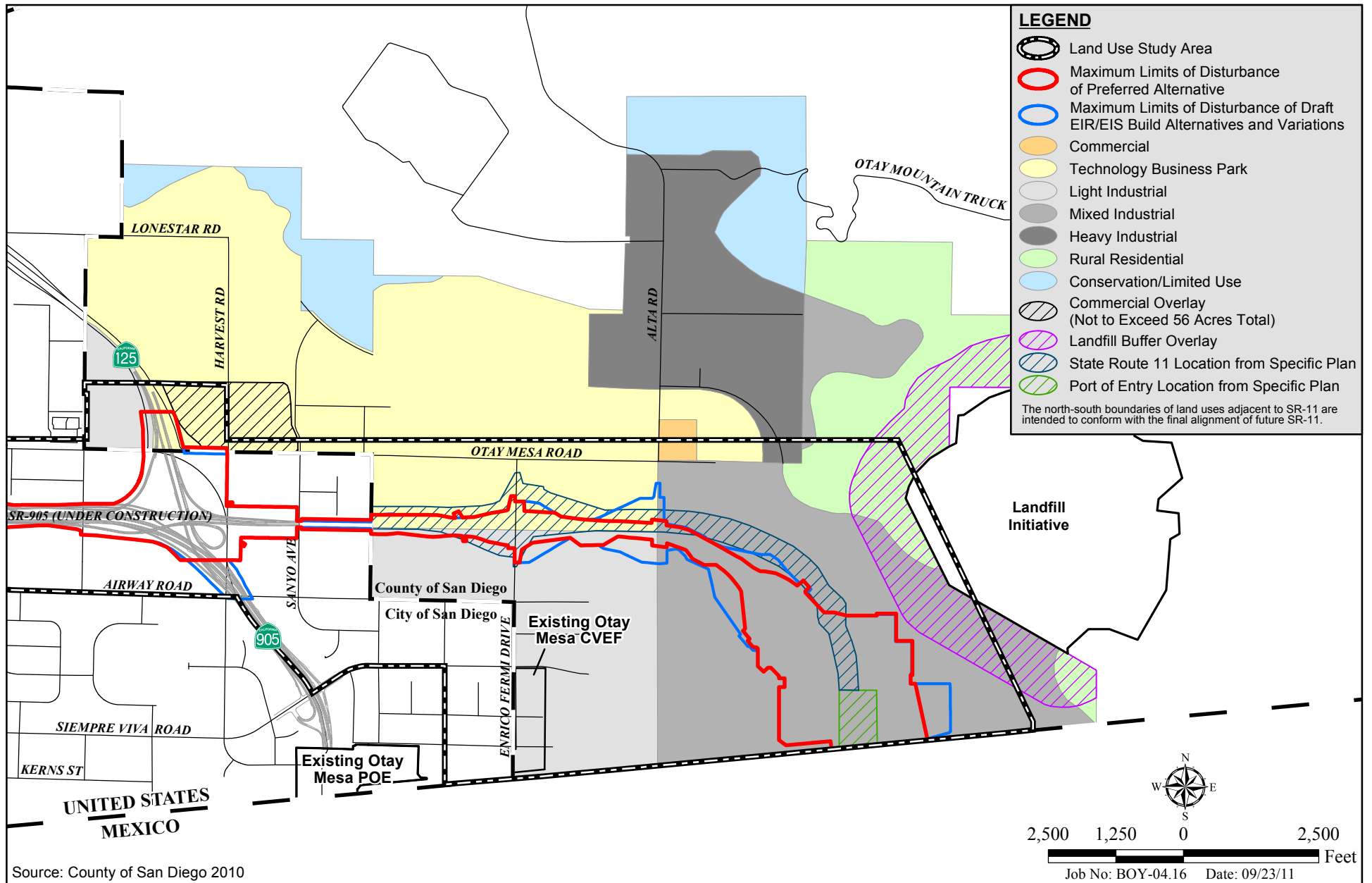
Figure 3.2-1



East Otay Mesa Specific Plan Circulation Plan Map

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

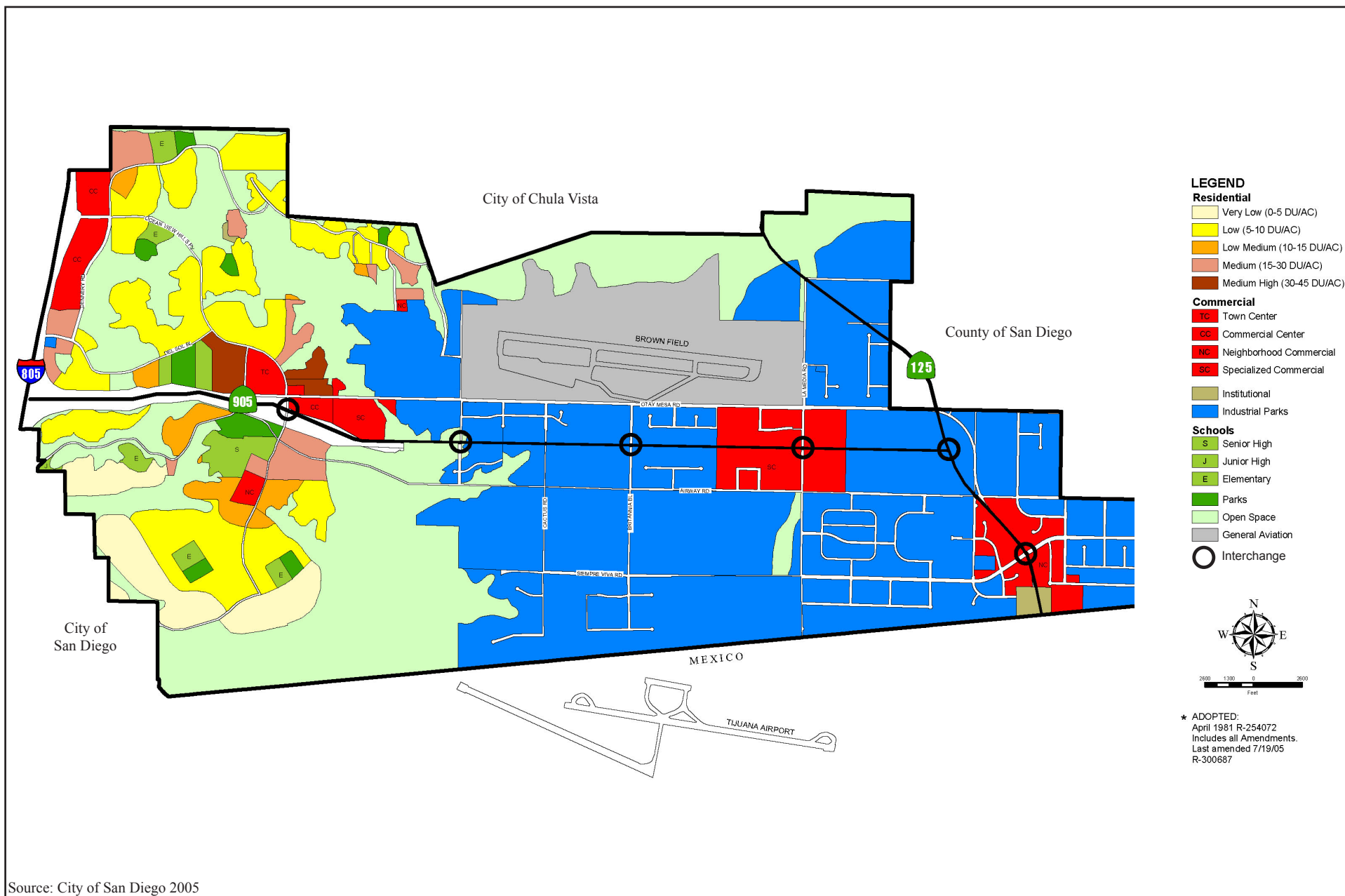
Figure 3.2-2a



East Otay Mesa Specific Plan Land Use Designations

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

Figure 3.2-2b



Adopted Otay Mesa Community Plan Land Use Designations

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

Figure 3.2-3

3.3 GROWTH

Transportation networks are one of many factors that influence where, when, and what type of development takes place in an area. Other factors include population and economic growth, desirability of certain locations, the costs and availability of developable land, physical and regulatory constraints, and the costs of sewer and water services.

Although transportation can influence growth, growth can also influence transportation. While transportation projects play a role in land use changes by providing infrastructure that can improve mobility or open access to new locations, the converse may also be true: new land development may generate travel to that location which, in turn, generates the need for new transportation facilities. Most capacity-increasing highway projects are proposed in response to traffic congestion that results from current or anticipated growth, rather than attracting new growth to an area that otherwise would remain stable or decline in population. However, transportation projects can affect the type, location, amount or rate of growth in an area, most often indirectly, due to changes in travel time and increased land accessibility in areas that may be ripe for development.

This section assesses the likelihood that the proposed project would result in indirect impacts related to growth. The analysis concentrates on the identification of the reasonably foreseeable growth with or without the project; to what extent the project would influence the overall amount, type, location, or timing of that growth; and whether project-related growth could be expected to put pressure on or cause impacts to environmental resources of concern (Caltrans 2006a). The analysis focuses on potential growth in the land use study area (refer to Figure 3.1-1, *Existing Land Uses in the Land Use Study Area*), with additional consideration of the socioeconomic study area, which is defined as Census Tract 100.15 and covers the majority of the EOMSP and OMCP areas (refer to Figure 3.3-1, *Socioeconomic Study Area: Census Tract 100.15*), as well as for the larger southern California region, due to the potentially wider socioeconomic effects associated with implementation of a POE.

3.3.1 Regulatory Setting

The Council on Environmental Quality regulations, which implement the National Environmental Policy Act of 1969, require evaluation of the potential environmental consequences of all proposed federal activities and programs. This provision includes a requirement to examine indirect consequences, which may occur in areas beyond the immediate influence of a proposed action and at some time in the future. The CEQ regulations (40 CFR [Code of Federal Regulations] 1508.8) refer to these consequences as indirect impacts. Indirect impacts may include changes in land use, economic vitality, and population density, which are all elements of growth.

CEQA also requires the analysis of a project's potential to induce growth. CEQA guidelines [Section 15126.2(d)] require that environmental documents "...discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment..."

3.3.2 Affected Environment

As described in Section 3.1, *Existing and Future Land Use*, the land use study area currently is largely undeveloped, but potentially on the brink of major development. The County and City designate virtually the entire land use study area for industrial and technology business uses (with the exception of small areas for commercial and rural residential use). The County and City have numerous active development applications within and adjacent to the land use study area, as listed in Table 3.1-1, *Growth Forecasts for Population, Housing, and Employment*.

As illustrated in Table 3.3-1, population, housing units, and employment within the socioeconomic study area (CT 100.15) and for the San Diego region are forecast by SANDAG to the year 2030, based on the year 2000. The socioeconomic study area is expected to experience rapid growth during the forecast period relative to San Diego County and the U.S. This census tract has a large stock of vacant land, and can absorb more housing units and residents. The total number of residents in the project area has been forecast by SANDAG to grow almost 20 fold from 1,062 people in 2000 to 21,691 people in 2030. This is substantially higher than the expected growth for the County (42 percent) and the U.S. (33 percent).

The total number of housing units in CT 100.15 has been forecast by SANDAG to grow 1,992 percent from 248 units in 2000 to 5,189 units in 2030. Housing units within the local area are expected to grow at a rate that is very similar to the rate of growth in population. As the other cities in the more central region of San Diego County fill up under their current land use plans, a larger share of the growth will be directed into the North County and South Bay areas. The total employment in the socioeconomic study area was forecast by SANDAG to significantly increase from 341 employees in 2000 to 28,109 employees in 2030. The high growth rate for the local area is due to the amount of vacant land that is planned for employment use and is expected to develop during the forecast period.

**Table 3.3-1
GROWTH FORECASTS FOR POPULATION, HOUSING, AND EMPLOYMENT**

Geographic Area/ Economic Forecast Category	2000	2010^a	2030
CT 100.15			
Total Population	1,062	2,803	21,691
Total Housing Units	248	674	13,686
Total Employment	341	13,686 ^b	28,109
San Diego County			
Total Population	2,813,833	3,095,313	3,984,753
Total Housing Units	1,040,149	1,164,786	1,383,803
Total Employment	1,232,739	1,573,742 ^b	1,913,682
United States^b			
Total Population	281,421,906	308,745,538	373,504,000
Total Housing Units	115,904,641	130,599,000	155,312,000
Total Employment	129,721,512	143,002,000	169,935,000

^a 2010 data are from the 2010 U. S. Census, except where indicated.

^b Source of 2010 data is SANDAG (2012) and is estimated based on 2000 Census data. 2010 Census data are not yet available at the census tract level for this category.

Sources: SANDAG (2012)

U.S. Department of Commerce, Bureau of the Census (2012)

3.3.3 Environmental Consequences

This section assesses the likelihood that the proposed project would result in indirect impacts related to growth in the land use study area or in the larger socioeconomic study area. This assessment examines the type of transportation project, type of project location (e.g., urban, suburban or rural), changes in accessibility, and growth pressure, as factors influencing the likelihood of growth inducement and consequent growth-related impacts.

First-cut Analysis of Growth Effects of the Proposed Project

Caltrans and FHWA guidance indicate the need for a first-cut analysis of the project to determine the likelihood of growth-related impacts. This analysis should use readily available information to examine a variety of interrelated factors to answer the following questions (Caltrans 2007c):

1. To what extent would travel times, travel cost, or accessibility to employment, commercial activities, or other destinations be changed, and would such a change affect the attractiveness of some areas for development, or trip patterns, or travel behavior?
2. To what extent would change in accessibility affect the location, rate, type, or amount of growth or land use change in the area?
3. To what extent would this growth or land use change affect resources of concern?

Key factors to examine in answering these questions are project type, project location, accessibility, and growth pressure.

The guidance indicates that for the first-cut screening, the potential for growth-influencing impacts of the proposed project should be examined within a wide geographic area. Alternative design/operational characteristics of SR-11 and the new POE could affect demand and operations at the existing POEs. In addition, implementation of SR-11 and the Otay Mesa East POE would increase the capacity for transport of people, goods, and services across the border in both directions. The area selected for the analysis of growth-influencing impacts is the socioeconomic study area (i.e., CT 100.15; refer to Figure 3.3-1), which includes the existing Otay Mesa and San Ysidro POEs as well as the area in the vicinity of the project.

Project Type

Certain transportation project types, such as widening existing lanes or repairing storm damage, are unlikely to cause growth-related impacts. Other types of projects, such as construction of new highways, may have more potential for such impacts. Typically, projects that create a new facility or new access require an analysis of growth-related impacts. The proposed project would provide a new border crossing facility and a new regional transportation facility with various access points to local roads that depend on the alternative selected for implementation. In terms of project type, the proposed project would appear to require a full analysis of growth-related impacts.

The destination for SR-11, however, is predominantly the new POE. Local access points would be limited and would vary with the different alternatives. The Preferred Alternative would increase access to the greatest degree (at Enrico Fermi Drive and a proposed extension of Siempre Viva Road, including northbound commercial direct local road access, as well as the new POE); the Two Interchange Alternative would provide similar access, but without the northbound commercial direct local road access; the One Interchange Alternative would only increase access at Alta Road and the new POE; and the No Interchange Alternative would not provide any local access points in addition to the new POE. These roadways and the development planned or occurring around them are already accessible via other local roads or would be accessible via future County Circulation Element roads to be built by others if and when demand exists and it is economical to do so. Furthermore, the toll would likely discourage use of SR-11 for local trips. Therefore, the ability of the proposed project to increase access and thereby influence growth in the East Otay Mesa area beyond what is already planned or in progress is limited.

As discussed in Section 1.2.2, Need for the Project, demand for crossing the border for personal trips and for goods movement has outstripped the capacities of the existing POEs within the past decade. This

situation causes a barrier to trade and job growth in the region, beyond the East Otay Mesa planning area. Therefore it is expected that the addition of POE capacity at the border would result in increased trade and increased jobs in the southern California region (beyond the immediate socioeconomic study area for the project) by removing a current obstacle to this growth. The precise locations or characteristics of such growth are well beyond the scope of this Final EIR/EIS; any predictions would be highly speculative and inappropriate for the NEPA process.

Project Location

Another important screening factor is project location, that is, whether a project is located in an urban, suburban, urban/suburban fringe, or rural area. Much of the proposed project would be located on undeveloped parcels adjacent to an expanding urban/suburban area, where there is generally high land availability and lower land prices. Transportation projects in these types of areas typically have a relatively high potential to cause growth-related impacts, particularly if the land is suitable, development regulations are favorable, and the area is in the path of an expanding urban/suburban core. Because the proposed facilities are located in a prime growth area, an analysis of growth-related impacts would appear to be required.

As shown in Table 3.3-1 and discussed in more detail in Section 4.10 of the CIA (HELIX/CIC Research 2010), however, rapid growth in the Otay Mesa area is anticipated and planned for by local and regional planning agencies, regardless of the proposed project. The socioeconomic study area (CT 100.15) is expected to experience a 19-fold increase in population from 1,062 in 2000 to 21,691 in 2030, compared with an approximately 42 percent increase over the same period for the San Diego region as a whole. Most of this residential growth is anticipated to occur in the western part of the census tract, distant from the proposed project, but would be supported by the industrial and business growth predicted in eastern sections, including the area in the vicinity of the project.

Planned growth in the socioeconomic study area has taken the proposed facilities and their approximate location into consideration for many years, as evidenced by provisions for SR-11 and/or the Otay Mesa East POE in many of the planning documents discussed previously (such as the County and City General Plans, the EOMSP and OMCP, and SANDAG RCP, RTP and RTIP). The County of San Diego has recently updated the EOMSP, which designates virtually the entire area in the vicinity of the project for industrial and technology business uses (with the exception of small areas for commercial and rural residential use). The County and City have numerous active development applications within and adjacent to the land use study area, as listed in Table 3.1-1, and shown on Figure 3.27-2, *Anticipated Cumulative Development within the Project Vicinity*. The EOMSP identifies a conceptual SR-11 corridor and POE site approximating the proposed project. The projects that are developing in the East Otay Mesa area, however, are being justified by their proponents in terms of land availability and appropriate zoning for industrial purposes, not in terms of the future potential for SR-11 and the new POE. Therefore, although the construction and operation of the proposed facilities would take place in an environment poised for rapid growth, this is growth that is anticipated and planned for by local and regional planning agencies. It is also growth that is already in progress independently of the proposed project. The proposed project is in conformance with the RTIP and FSTIP.

Accessibility

Accessibility reflects both the attractiveness of potential destinations and ease of reaching them, which, in turn, are related to land use and circulation issues. Currently, the immediate vicinity of SR-11 and the POE has few developed roads and limited accessibility. The implementation of SR-11 and the Otay Mesa East POE could affect ultimate circulation and land use patterns and the resulting accessibility of the socioeconomic study area in terms of travel times, travel behavior and other aspects of accessibility.

Traffic forecasts indicate that in the future, more and more vehicles would cross the border at the existing POEs without the proposed new POE. In this regard, the proposed project could change the number of trips experienced at specific locations, travel speeds and travel times, congestion and level of service, and accessibility to, from, and within the socioeconomic study area. Therefore, an analysis of growth-related impacts would appear to be required.

The project traffic study assumes that future overall projected traffic and border crossing demand in the socioeconomic study area would be the same with or without the proposed project. Although there would be a redistribution of traffic from local roads to SR-11, and thus the potential for reduced congestion on local roads with the project, most local roads are projected to operate at acceptable levels of service with or without the project, and options for avoiding, minimizing or mitigating traffic impacts are available for those roadways or intersections that would experience unacceptable levels of service. Therefore, speeds, travel times, congestion and level of service would not be expected to change sufficiently with the project to substantially change the growth that is planned and already in progress. In addition, as discussed above, local development projects planned or in progress are already accessible from roads other than SR-11 or would be accessible from future Circulation Element roads to be built by others independently of the proposed project.

Growth Pressure

The Otay Mesa area contains the largest quantity of remaining undeveloped industrial land within San Diego County. Land values in the Otay Mesa area remain relatively inexpensive, compared with remaining industrial infill parcels in other areas of the County. Furthermore, the land on Otay Mesa has the unique advantage of facilitating access to the existing Otay Mesa POE. In terms of growth pressure, the area in the vicinity of the project is experiencing proposed or ongoing construction activity and encompasses tracts of undeveloped land, indicating a high opportunity for growth. The recent downturn in the San Diego real estate market, which is tied to the overall economic recession at the national level, is temporarily reducing this pressure, but over the longer term, a return to growth pressure is expected. Overall, growth pressure in the area indicates that an analysis of growth-related impacts may be required.

Growth in the regional study area is physically constrained, however, by the Otay River Valley to the north, the San Ysidro Mountains to the east, the international border to the south, and existing development to the west of I-805. Although much of the area in the vicinity of the project is undeveloped land at the present time, there are numerous active development proposals that will likely proceed with or without SR-11 and a new POE. In fact, nearly every developable parcel in the land use study area is already the subject of a development proposal, which makes it unlikely that substantial additional growth stimulation would occur as a result of the project. The proposed project could influence the rate and timing of development within the EOMSP area, however, by stimulating currently proposed development to occur sooner or more quickly. Such development is consistent with the planned growth of the area, and would be required to simultaneously provide the necessary road and utilities infrastructure to support the development. Implementation of any of the project build alternatives, including the Preferred Alternative, would support continued development of East Otay Mesa; it is noted that the Preferred Alternative and the Two Interchange Alternative would require the fewest revisions to currently planned cumulative development projects. As noted below in the analysis of the No Build Alternative, the decision not to implement the project could slow the development of the East Otay Mesa area. In addition to providing a beneficial transportation link, the project build alternatives would extend some utilities to the project area (i.e., sewer and electricity; water is already available), which could further serve to accelerate planned growth, but the timing of development would also depend on economic factors, such as the rate of recovery from the current national recession.

The type of development could be affected through the encouragement of more industrial uses related to cross border trade; however, this effect would likely be minor because of the similar influence of the existing Otay Mesa POE. While the pattern of development could be influenced in the immediate vicinity of the proposed facilities, in order to accommodate the preferred SR-11 and new POE, planned growth has taken the proposed facilities and their approximate location into consideration for many years, as discussed above. Furthermore, without a new POE and SR-11, the proposed industrial developments could still support maquiladora and other international trade-related businesses that would use the Otay Mesa and/or Tecate POEs.

The proposed addition of another POE between the U.S. and Mexico has the potential to influence growth throughout the southern California region. The constraint to cross border trade and job growth within San Diego County that is caused by the current shortage of capacity at the existing POEs in San Diego County is well documented by SANDAG (see Section 1.2.2). The proposed project, along with other cumulative POE enhancing projects along the U.S./Mexico border, would alleviate the current barrier to such growth, potentially providing one stimulus for growth throughout southern California and particularly in San Diego County. Such growth would be expected to occur slowly, as the recent economic recession recedes and manufacturing levels increase. The recession has also presented an obstacle to economic growth in recent years. Due to the recession, office vacancy rates in San Diego, Orange and Los Angeles counties have increased substantially and were measured at about 50 percent in 2009. Over the short-term following the recession, the available capacity in office and manufacturing space would be expected to be filled prior to substantial demand for new growth occurring. The specific areas in which growth would occur would be speculative to predict.

Preliminary Conclusions Regarding Growth Influence

As discussed above in the first-cut screening for each issue, unique conditions of the socioeconomic study area determine that the potential for the proposed project to influence growth is confined to effects on the rate and timing of planned growth within the defined socioeconomic study area, because most of the area is either already developed, addressed in current development proposals before the County and City, or is restricted from development within the local plan due to topography, sensitivity of biological resources, and other constraints. Localized impacts are likely to be less than one might expect for a project consisting of a new highway and POE on undeveloped parcels adjacent to an expanding urban/suburban area with limited existing accessibility and substantial growth pressure, as these potential growth-related impacts are already accounted for in local development plans, and the environmental effects of such growth would be required to be mitigated by the proponents of new and cumulative projects in the area in conformance with the applicable environmental laws and regulations. Within the wider southern California region, however, the alleviation of a current “bottleneck” that has been widely acknowledged to restrict growth within the region, could influence growth in the manufacturing sector and indirectly influence the demand for housing as well. This growth would be expected to occur gradually as the manufacturing sector recovers from the recent recession. The expected growth-related impacts under each project alternative are presented below.

Preferred Alternative and Draft EIR/EIS Build Alternatives

The build alternatives can be seen as both responding to and facilitating planned growth. Overall, consideration of factors such as type of transportation project, urban/suburban/rural project location, changes in accessibility and growth pressure lead to the conclusion that there is little potential for growth influence and consequent growth-related impacts within the defined socioeconomic study area, as a result of any of the three build alternatives. Travel times, travel cost, accessibility to employment, commercial activities, destinations, trip patterns, travel behavior, and the attractiveness of specific areas for development would not be likely to change sufficiently as a result of the proposed project to change the

growth that is planned and already in progress. Development could occur sooner or at a more rapid pace, but most of the area in the vicinity of the project is already the subject of active development applications in progress with the County and City, and such growth is already accounted for in local development plans. In addition, the pattern of development would be expected to easily adjust to accommodate the project limits, because these facilities have been indicated conceptually on planning documents for many years, and currently reflect the approximate location of the proposed project. Furthermore, growth that is planned or already in progress in the vicinity of the project would not be expected to result in unanticipated impacts to resources. Any associated development would be in accordance with the EOMSP and OMCP, and would have to conform to CEQA and local, state and federal regulatory requirements for the protection of resources. No substantial adverse impacts related to growth influence would be expected to result from implementation of any of the build alternatives, including the Preferred Alternative, but implementation of any of these alternatives would be expected to facilitate the region's ability to take advantage of increased economic opportunities.

Growth influence within the larger southern California region would be the same for any of the build alternatives, including the Preferred Alternative. One of the stated purposes of the project is to accommodate projected increases in international trade and personal cross-border travel. The stated need for the project, as described in Section 1.2.2, is substantially supported by a documented increase in cross border trade and personal travel across the border that have occurred over the past decade, which have substantially increased wait times at the border. Due to the increased wait times and inadequate capacity at the existing POEs, SANDAG estimated that over 50,000 jobs and \$6 billion in gross output of products and services were being sacrificed in the region in 2005. Although these numbers have likely declined during the recession, wait times have remained excessive and are likely to increase once again, as the recent recession continues to abate. The alleviation of the current border "bottleneck" is therefore expected to influence growth in manufacturing and services throughout the southern California region, with this influence increasing as the economy improves. An additional cumulative growth influence is also anticipated based on implementation of the proposed project in conjunction with the previously approved expansion of the San Ysidro POE and the proposed expansion of the Otay Mesa POE. The specific areas in which growth would occur would be too speculative to predict. Office vacancy rates in San Diego, Orange and Los Angeles counties were all at about 50 percent in 2009.¹ Thus, it is expected that growth regionwide would utilize the available space initially, with the full effects of project growth influence more likely to be felt over the long term. To the extent that the project would influence more rapid economic growth within the region, it would be seen as benefiting the local economy by generating much needed jobs and helping to fill vacant office and industrial space. In the near term, environmental effects would be unlikely to exceed the planned impacts of the existing development capacity within the region that would be utilized to support the near term growth. Over the long term, the growth associated with the proposed POE and increased capacity for border crossings could increase pressure for development in southern California. Such development would be subject to environmental review under state and local laws and regulations and would be managed according to the general plans and zoning restrictions for each jurisdiction. Overall, any of the build alternatives or their variations would be expected to have a moderate influence on growth, and on balance, the project level and cumulative growth effects of the proposed POE are considered to be positive.

Variations on the Draft EIR/EIS Build Alternatives

No Toll Variation

The imposition of a toll would likely discourage use of SR-11 for local trips, and may reduce the attractiveness of SR-11 and the Otay Mesa East POE for commercial crossers, since the wait times would

¹ Allen Matkins/UCLA Anderson Forecast California Commercial Real Estate Survey, January 2010.

likely be similar to those at the Otay Mesa POE. Thus, the No Toll Variation would be expected to result in marginally increased access to the area surrounding the proposed project for non-commercial travelers, but decrease the use of the project by commercial vehicles. The net effect could be a slight reduction in economic growth within the region compared to the build alternatives with a toll. Existing and planned development, as well as Circulation Element roads to be built by others independently of the proposed project, already make the area accessible for development. The marginal ability of the No Toll Variation to increase access and thereby influence growth beyond what is already planned or in progress within the immediate socioeconomic study area is limited. In addition, this variation would not be expected to substantially influence growth on a regionwide basis, beyond the effects identified for the baseline project build alternatives. Similar, but slightly less positive impacts related to growth influence would be expected to result from implementation of the No Toll Variation.

46-foot Median Variation

The implementation of a wider median width in the Sanyo Avenue area would not be expected to impact any of the factors that might affect growth influence by the proposed project, such as travel times, travel cost, accessibility to employment, commercial activities, destinations, trip patterns, travel behavior, or the attractiveness of specific areas for development. Similar positive impacts related to growth Influence would be expected to result from implementation of the 46-foot Median Variation.

SR-905/SR-125/SR-11 Interchange Variations and Siempre Viva Road Full Interchange Variation

These interchange design variations could result in marginally greater accessibility and decreased travel times to the area surrounding the proposed project, which could make the area marginally more attractive for growth. This difference would not be substantial, however, for the same reasons as described for the build alternatives, and similar positive impacts related to growth influence would be expected to result from implementation of the SR-905/SR-125/SR-11 Interchange Variations and Siempre Viva Road Full Interchange Variation. It should be noted that the Preferred Alternative incorporates the SR-125 Connector Variation and a modified version of the Siempre Viva Road Full Interchange Variation, and would, therefore, result in marginally greater accessibility compared to the baseline Two Interchange Alternative.

No Build Alternative

Under the No Build Alternative, all border crossing traffic in the San Diego metropolitan region would continue to be served by the San Ysidro, Otay Mesa and Tecate POEs. As described in Chapter 1.0, *Proposed Project*, there has been a substantial increase in trade between the U.S. and Mexico, and in the number of truck inspections that are required and the number of border crossings that occur each day. Currently, over 80 percent of merchandise crossing the U.S. - Mexico border is moved by trucks. Because of the increased crossing demand at the border, wait times for personal trips across the border have averaged 45 minutes at the Otay Mesa POE and 75 minutes at the San Ysidro POE during peak periods, while approximately 10 percent of people waited as long as one hour at the Otay Mesa POE and two hours at the San Ysidro POE. The average processing and wait time for commercial freight crossings at the existing Otay Mesa POE has been reported as typically 1.5 to 2 hours (without U.S. secondary inspection), with 10 percent of commercial crossers waiting as much as 4 hours (SANDAG/Caltrans 2006a and 2006b). As population and trade in the border region grow in the future, wait times are likely to rise, at some point surpassing the maximum time periods that many border crossers would be willing to wait. If the border continues to be a bottleneck, this could result in a curtailment of growth in the maquiladora industry near the border, and cap other types of border crossings for employment, tourism, shopping and other purposes that are vital to the economic health of the region. The result of the unmet demand for border crossings in the San Diego/Tijuana region could cause the demand to be exported to

other ports and modes of transport. Indirectly, a continued bottleneck at the land border crossings for vehicles, due to the failure to implement a planned new border crossing, could result in increased demand to transport goods and services via the region's airports, ocean ports and rail terminals and lines, resulting in potential pressure to implement unplanned expansions of these facilities, with associated potential adverse impacts to environmental resources. In addition, the potential project-related economic benefits of near term and long term growth within the region would not be realized with this alternative. Active developments within the EOMSP would still be expected to occur, due to the availability of the existing Otay Mesa POE, but such development may proceed more slowly without implementation of the proposed project.

3.3.4 Avoidance, Minimization, and/or Mitigation Measures

Build Alternatives Including the Preferred Alternative

Because no adverse impacts related to growth influence would result from implementation of the build alternatives, no avoidance, minimization, or mitigation measures would be required.

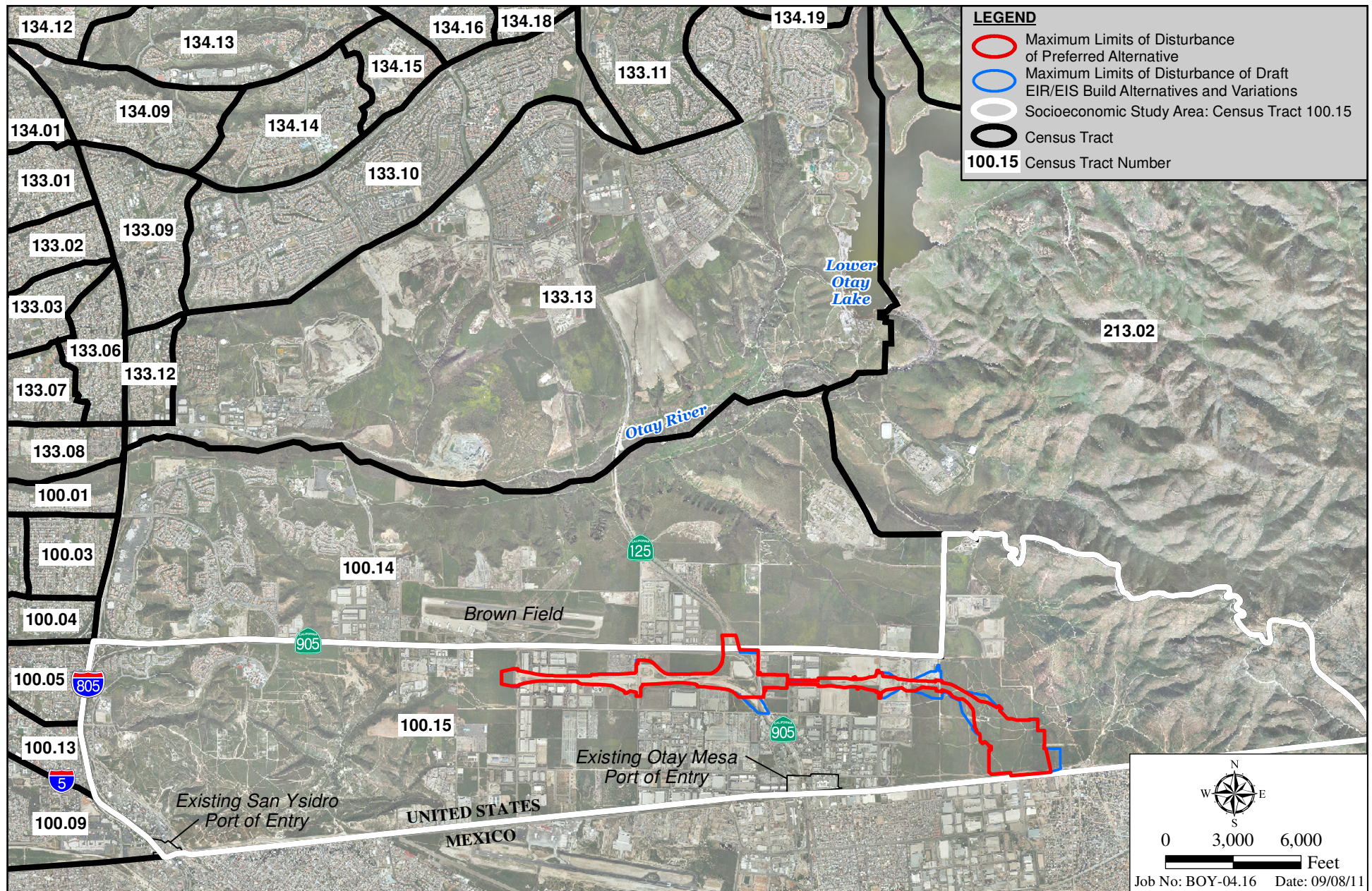
Variations on the Draft EIR/EIS Build Alternatives

Because implementation of the No Toll Variation, the 46-foot Median Variation, the SR-125 Connector Variation, the SR-905/SR-125/SR-11 Interchange variations, or the Siempre Viva Road Full Interchange Variation would not result in impacts related to growth influence, no avoidance, minimization, or mitigation measures would be required.

No Build Alternative

The No Build Alternative could have implications for growth on a regional scale, if the border continues to be a transportation bottleneck. Curtailment of growth in the maquiladora industry near the border could result, as well as stimulation of growth in other regions that provide other means to transport goods and services, such as airports, ocean ports and rail terminals and lines, with associated potential adverse impacts to environmental resources. Therefore, marginally adverse impacts related to growth influence could result from the No Build Alternative. Nevertheless, because no project action would occur, no associated avoidance, minimization, or mitigation measures would be required.

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Socioeconomic Study Area: Census Tract 100.15

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

Figure 3.3-1

3.4 COMMUNITY CHARACTER AND COHESION

This section discusses the likely impacts of the proposed project on the character and cohesion of the local community, and is based on the project CIA (HELIX/CIC Research 2010) and the Addendum to the CIA (CIC Research 2011). While the Otay Mesa East POE would serve the larger bi-national economies of the U.S. and Mexico, the community of Otay Mesa would experience the most direct and immediate effects of the proposed project. The analysis in this section focuses on the socioeconomic study area (CT 100.15; refer to Figure 3.3-1, *Socioeconomic Study Area: Census Tract 100.15*) and relies largely on demographic forecasts and other statistics prepared by SANDAG, the regional planning agency for the San Diego area.

The socioeconomic impact analysis provided in the CIA and summarized in this section is also based on a comprehensive analysis of San Diego County Assessor's database, San Diego County Assessor's maps, U.S. Census data, the EOMSP, the OMCP, and numerous other sources of published information. The project was discussed with community groups, public agency staff, and County and City community planners representing the EOMSP and OMCP area. In general, the various study area representatives agreed that the proposed public project would be a positive addition for the community and the region.

It should be noted that the project would result in no residential property acquisition, and required partial business property acquisitions would not require off-site relocations.

3.4.1 Regulatory Setting

NEPA (as amended), established that the federal government use all practicable means to ensure that all Americans have safe, healthful, productive, and aesthetically and culturally pleasing surroundings (42 USC 4331[b][2]). The FHWA in its implementation of NEPA (23 USC 109[h]) directs that final decisions regarding projects are to be made in the best overall public interest. This requires taking into account adverse environmental impacts, such as destruction or disruption of human-made resources, community cohesion, and the availability of public facilities and services.

Under CEQA, an economic or social change by itself is not to be considered a significant effect on the environment. However, if a social or economic change is related to a physical change, then social or economic change may be considered in determining whether the physical change is significant. Since this project would result in physical change to the environment, it is appropriate to consider changes to community character and cohesion in assessing the significance of the project's effects.

3.4.2 Affected Environment

This section describes social and demographic characteristics for the social and economic study area for the SR-11 and Otay Mesa East POE project (i.e., CT 100.15). The demographic data presented in this report were generally derived from the 2000 U.S. Census and the American Community Survey 2008 estimates. In addition, projections for 2010 and 2030 by SANDAG, the Bureau of the Census, the U.S. Department of Labor, and the U.S. Department of Housing and Urban Development also are reported for selected characteristics (i.e., population, employment, and housing units; see Table 3.4-1, *Socioeconomic Study Area, County, and U.S. Population and Housing Characteristics*).

Community Setting

The study area used for socioeconomic analysis is defined as CT 100.15, a large statistical unit, which includes the southern portion of the EOMSP and the southeastern area of the OMCP, and covers approximately 9,900 acres (refer to Figure 3.3-1). It is located approximately 12 miles southeast of

downtown San Diego and lies directly north of the Mexican border and the eastern portion of Tijuana, Baja California. CT 100.15 covers approximately 9,900 acres. Its boundaries extend from just east of I-805, north to Otay Mesa Road, east to the Otay Mountain Truck Trail ridgeline of the undeveloped San Ysidro Mountains, and south to the border with Mexico. This census tract incorporates the existing San Ysidro and Otay Mesa POEs.

As noted in Section 3.1, the southeastern portion of Otay Mesa is generally characterized by large-scale industrial warehouse facilities and undeveloped industrial-zoned land, with pockets of small retail development that generally serve the employees of the large industrial businesses. Based on current approved and proposed development applications (refer to Figure 3.27-2, *Anticipated Cumulative Development within the Project Vicinity*, and Table 3.1-1, *Characteristics of Proposed Land Development Projects in the Cumulative Study Area*), the mesa is in the process of transforming to a more urbanized area, complete with large-scale industrial development, supporting commercial use, and master-planned residential developments.

Unlike much of the San Diego region, residential development in the Otay Mesa area is predominantly rural. This existing rural residential condition on Otay Mesa is in contrast with the more dense residential development west of I-805 and south of the international border. The residential portion of the OMCP Area is located approximately 1.5 miles west of the project site, and is composed of newer housing developments with associated schools, parks and neighborhood-serving commercial areas. Residential housing within the EOMSP is sparse and generally located north and northeast of the project land use study area. Three single-family residences are located on Otay Mesa Road, approximately 1,000 feet north of the proposed project. Another house is located just beyond the land use study area, approximately 2,200 feet west of the terminus of the project modifications to SR-905 at Britannia Boulevard. Several other single-family residences are located one or more miles from the proposed project in areas to the north and west (beyond the limits of the land use study area).

The sparse nature of residential development in the land use study area is such that no true residential community can be said to exist in close proximity to the project. Permanent industrial development is also limited in the immediate vicinity of the proposed project (it is only present at the western terminus of SR-11 and adjacent to the proposed modifications to SR-905), but a border-oriented, industrial business community is present nearby in the land use study area.

Demographic Characteristics

Table 3.4-1 presents a demographic profile of the socioeconomic study area, with data for the San Diego County region and the entire U.S. for comparative purposes.¹ The CT 100.15 demographic characteristics reveal that it differs in many respects from the greater San Diego region and the country. In general, CT 100.15 includes a relatively small population of residents. Residents of CT 100.15 are younger than residents of the County and the U.S. and they are much more likely to be Hispanic or non-White compared to countywide residents. The socioeconomic study area residents tend to be less educated, have substantially lower median household incomes, and record a high level of poverty compared to residents of the County and the U.S. overall.

¹ The logic supporting the inclusion of data for the U.S. is that prior border economic studies for the San Diego/Baja California, Mexico region have found that only about one-third of the economic impacts of the commercial border crossing activity are experienced in San Diego County, while about half of the total economic impact of this activity is experienced nationwide. The remaining impacts are experienced throughout California.

**Table 3.4-1
SOCIOECONOMIC STUDY AREA, COUNTY,
AND U.S. POPULATION AND HOUSING CHARACTERISTICS**

Characteristic	CT 100.15	San Diego Region	United States
2000 Population (U.S. Census)	1,062	2,813,833	281,421,906
2010 Population (U.S. Census)	2,803	3,095,313	308,745,538
Gender (2000 Census)			
Male	50.3%	50.3%	49.1%
Female	49.7%	49.7%	50.9%
Gender (2010 Census)			
Male	48.9%	50.2%	49.1%
Female	51.1%	49.8%	50.9%
Age Distribution (2000 Census)			
Under 5 years	8.6%	7.1%	6.8%
5 to 19	32.5%	21.8%	21.8%
20 to 34	20.1%	24.0%	20.9%
35 to 54	23.4%	28.8%	29.4%
55 to 64	7.1%	7.3%	8.6%
65+	8.4%	11.2%	12.5%
Age Distribution (2010 Census)			
Under 18 years	20.7%	13.5%	24.0%
18 to 19	41.1%	44.2%	3.0%
20 to 24	4.1%	5.0%	7.0%
25 to 34	8.7%	8.8%	13.3%
35 to 49	14.3%	11.9%	20.7%
50 to 64	7.3%	10.1%	19.0%
65+	3.7%	6.5%	13.0%
Median Age (2000 Census)	26.5	33.2	35.3
Median Age (2010 SANDAG)^a	26.9	35.3	37.2
Median Household Income (2000 Census)	\$29,723	\$47,067	\$41,994
Median Household Income (2010 SANDAG)^a	\$40,381	\$62,771	\$49,445
Families Below Poverty Level (2000 Census)	29.0%	8.4%	9.2%
Population 25+ yrs. College Graduates (2000 Census)	9.0%	29.6%	24.4%

**Table 3.4-1 (cont.)
SOCIOECONOMIC STUDY AREA, COUNTY,
AND U.S. POPULATION AND HOUSING CHARACTERISTICS**

Characteristic	CT 100.15	San Diego Region	United States
Population by Race & Ethnicity (2000 Census)	100.0%	100.0%	100.0%
Non-Hispanic	5.8%	73.3%	87.5%
American Indian and Alaska Native	0.6%	0.5%	0.7%
Asian & Pacific Islander	0.8%	9.1%	3.7%
Black or African American	0.5%	5.5%	12.1%
White	4.0%	55.0%	69.1%
Other or Multiple Race	0.1%	3.1%	1.8%
Hispanic	94.2%	26.7%	12.5%
Population by Ethnicity (2010 Census)	100.0%	100.0%	100.0%
Non-Hispanic	17.1%	68.0%	83.6%
Hispanic	82.9%	32.0%	16.4%
Population by Race (2010 Census)	100.0%	100.0%	100.0%
American Indian and Alaska Native	0.8%	0.9%	0.9%
Asian	8.2%	10.9%	4.8%
Native Hawaiian and Pacific Islander	0.2%	0.5%	0.2
Black or African American	3.1%	5.1%	12.6%
White	52.8%	64.0%	72.4%
Other or Multiple Race	34.8%	18.7%	9.1%
Language Spoken at Home (2000 Census)			
English only	9.0%	67.0%	82.1%
Spanish	91.0%	21.9%	10.7%
Asian Pacific Language	0.0%	7.1%	2.7%
Other Languages	0.0%	4.0%	4.5%
2000 Total Housing Units (2000 Census)	248	1,040,149	115,904,641
Total Occupied Units	235	994,677	105,480,101
Owner-occupied housing	36.0%	55.4%	66.2%
Renter-occupied	64.0%	44.6%	33.8%
2010 Total Housing Units (2010 Census)	674	1,164,786	130,599,000
Total Occupied Units	650	1,086,865	116,860,000
Owner-occupied housing	68.5%	54.4%	66.9%
Renter-occupied	31.5%	45.6%	33.1%

**Table 3.4-1 (cont.)
SOCIOECONOMIC STUDY AREA, COUNTY,
AND U.S. POPULATION AND HOUSING CHARACTERISTICS**

Characteristic	CT 100.15	San Diego Region	United States
Housing Unit Type (2000 Census)	100.0%	100.0%	100.0%
Single Family Residence (detached)	54.4%	51.0%	60.3%
Attached Units	38.7%	44.5%	31.9%
Mobile Homes and Other	6.9%	4.5%	7.8%
Persons per Dwelling Unit (2000 Census)	4.5	2.7	2.4
Persons per Dwelling Unit (2010 Census)	4.3	2.8	2.8
Average Rent (2000 Census)	\$620	\$711	\$602
Median Housing Value (2000 Census)	\$182,871	\$223,363	\$119,600
Housing Vacancy Rate (2000 Census)	5.2%	4.4%	9.0%
Housing Vacancy Rate (2010 Census)	3.6%	6.7%	14.3%
Year built (2000 Census)			
1990 to 2000	2.0%	13.9%	17.9%
1980 to 1989	37.0%	21.9%	15.8%
19060 to 1979	37.9%	41.3%	32.2%
1940 to 1959	20.0%	17.8%	20.0%
1939 or earlier	4.0%	5.1%	15.0%
Total Employment	100.0%	100.0%	100.0%
2000 Census (resident employment)	341	1,232,739	129,721,512
2010 Employment Forecast (SANDAG)	13,686	1,573,742	143,002,000
Employment Percent Change (2000-2010)	N/A	27.7%	10.2%
2030 Employment Forecast (SANDAG)	28,109	1,913,682	172,167,000
Employment Percent Change (2000-2030)	N/A	55.2%	32.7%
Employment Percent Change (2010-2030)	105.4%	21.6%	20.4%
Unemployment Rate (16 years or older; 2000 Census)	3.9%	5.8%	3.7%
Occupation (2000 Census)	100.0%	100.0%	100.0%
Management, professional, and related occupations	12.0%	37.5%	33.6%
Service occupations	20.0%	16.0%	14.9%
Sales and office occupations	28.0%	27.3%	26.7%
Farming, forestry, and fishing	0.0%	0.5%	0.7%
Construction, extraction, and maintenance	5.0%	8.7%	9.4%
Production, transportation, and material	35.0%	9.9%	14.6%

^a Source of 2010 data is the SANDAG Profile Warehouse (SANDAG 2012) and is based on 2000 census data, with the exception of the nationwide data, which is from the 2010 census. 2010 census data for these categories are not yet available at the census tract or county/regional level.

Sources: SANDAG (2012), 2010 U.S. Census, and 2000 U.S. Census, as indicated.

Population

Based on the 2010 Census data, there were 2,803 residents in CT 100.15. This area represents less than 0.1 percent of the countywide population of 3,095,313, while the San Diego region represents about one percent of the total U.S. population of 308.7 million.

Race and Ethnicity

A minority population dominates the socioeconomic study area. Based on the 2010 Census, most of the residents (82.9 percent) in CT 100.15 were Hispanic, while 32.0 percent countywide were Hispanic, and 16.4 percent were Hispanic nationally. There were very low proportions (less than 1.0 percent each) of Pacific Islanders/Native Hawaiians and American Indian/Alaskan Native residents in the census district, which was comparable to the San Diego region and the nation. Compared to the census tract, the County reported a similar proportion of Asian (10.9 percent compared to 8.2 percent in the census tract) and Black or African-American residents (5.1 percent compared to 3.1 percent in the census tract).

Median Age

The median age for socioeconomic study area residents was 26.9 years, compared to 35.3 years for the County and 37.2 years nationwide, per 2010 estimates. The percentage of youths under age 20 in the socioeconomic study area (61.8 percent) was higher than the County (57.7 percent) and the U.S. (27.0 percent), reflecting a greater presence of large families in the local area community (2010 Census).

Education

The 2000 Census indicated that a lower percentage of the population over 25 years of age in the socioeconomic study area had completed a college degree (9.0 percent), compared to almost 30 percent of the countywide population and about 24 percent of the U.S. population. More recent data were not available for this category.

Employment

At the time of the 2000 Census, the percentage of unemployed residents (over age 16) in the socioeconomic study area (3.9 percent) was lower than the County average (5.8 percent) and similar to the nationwide average (3.7 percent). Overall, the data indicated that over one third of the residents in CT 100.15 are employed in production, transportation and material occupations (35.0 percent), and more than one-quarter are employed in the sales and office occupations (28.0 percent). The County reported more employees in management or professional occupations (37.5 percent) and less in production, transportation or materials occupations (9.9 percent). More recent data were not available for this category.

Household Income and Poverty

The 2010 estimated median household income for the socioeconomic study area residents was \$40,381, which was substantially lower than the countywide median income of \$62,771, and below the nationwide median income of \$49,445. The lower median income for residents in CT 100.15 was consistent with the lower education level reported for area residents. The 2000 U.S. Census recorded a median housing value for the socioeconomic study area of \$183,000, which was lower than the County's median (\$223,000), but higher than the national housing median value of \$120,000. More recent data were not available for this category.

In 2000, 29.0 percent of families in the socioeconomic study area had incomes below the poverty guideline levels set by the U.S. Department of Health and Human Services (HHS). The HHS poverty guideline for 2000 was \$17,050 for a family of four, and in 2010 was \$22,050 for a family of four. In contrast, for 2000 about 8.4 percent of families in San Diego County, and 9.2 percent of families nationwide had an estimated income that was below the poverty guidelines set by the HHS. More recent data were not available for this category.

Household Size

Per the 2010 Census, the number of people per dwelling unit was 4.3 in the socioeconomic study area. This was higher than the number of people per dwelling unit in the County and the U.S. (2.8 people per dwelling unit in both cases). The housing vacancy rate was 3.6 percent for CT 100.15, 6.7 percent in the County and 14.3 percent in the U.S.

Community Facilities

Parks and Recreational Facilities

As discussed in the project CIA (HELIX/CIC Research 2010), and the introduction to Chapter 3.0, all parks and recreational facilities are located at a distance of at least three miles from the proposed project.

Schools

Public schools in the vicinity are within the San Ysidro Elementary School District and the Sweetwater Union High School District. All public schools are located at least two miles west and northwest from the project site. A satellite campus of Southwestern College is located immediately south of the proposed modifications to SR-905, east of Britannia Boulevard. Currently, no additional schools are planned in or near the land use study area, although some scenarios being studied for the OMCP update would include an additional Sweetwater Union High School District high school at Airway Road and Britannia Boulevard, approximately 900 feet from the westernmost point of the proposed modifications to SR-905.

Transit Service

Public Bus Service

The Otay Mesa community is served by MTS. Fixed-route public bus service currently extends only to the western edge of the project site. Transit service consists of Routes 905 and 905A (see Figure 3.4-1, *Transit Service*; MTS 2009).

Route 905 provides service between the Iris Avenue trolley station in Nestor, along SR-905 and south to the Otay Mesa POE. Within Otay Mesa, Route 905 extends along SR-905/Otay Mesa Road, Paseo de las Americas, Via de la Amistad and Roll Drive. Route 905A serves a similar area, but diverges east of Britannia Boulevard during peak hours to serve an area to the south. Within Otay Mesa, Route 905A extends along the roads also included in Route 905, as well as Britannia Boulevard, Airway Road, Avenida Costa Azul, Costa Norte, Costa Este, Costa Sur, and Avenida Costa Brava.

At the western terminus of bus routes 905 and 905A, the Iris Avenue trolley station along the MTS Blue Line trolley provides connections to bus routes serving the San Diego communities of Nestor and San Ysidro, as well as the adjacent cities of Imperial Beach and Chula Vista.

Currently, no BRT service exists in the San Diego region. The South Bay BRT is being developed to provide high-speed transit connections between downtown San Diego and the Otay Mesa POE along the future I-805 Managed Lanes and a dedicated transit way through eastern Chula Vista. At full buildout, the South Bay BRT project will be 21 miles long and will include 15 stations with upgraded passenger shelters, technological enhancements, and premium coach buses. Various options are being explored to connect the proposed Otay Mesa East POE to the BRT system. Preliminary engineering, environmental work and final design are in process; Phase One is planned to be in operation by late 2012.

Light Rail Transit

Light rail service to the southern San Diego region is provided by the MTS Blue Line trolley. The Blue Line reaches its southernmost point at the international border in San Ysidro. Bus routes 905 and 905A, discussed above, provide transit connections between the trolley and Otay Mesa.

Private Transit

In addition to public transit, private transit operators, including taxis, vans and shuttle buses, operate in the area of the Otay Mesa and San Ysidro POEs. Van and shuttle bus services are frequently used by patrons of Tijuana International Airport to access the airport or return to the U.S. via the existing POEs.

Pedestrians and Bicycle Routes

Pedestrians are common in nearby San Ysidro, especially near the San Ysidro POE, but Otay Mesa overall has relatively little pedestrian activity. Traffic in the area is generally associated with industrial activities, including large trucks hauling cargo across the border and parking on large lots. Several factors encourage pedestrian activity near the existing Otay Mesa POE, including commercial establishments, bus routes, and passenger-vehicle parking lots in the area north of the POE between Paseo de las Americas and Roll Drive. A bicycle route along SR-905/Otay Mesa Road as well as bike lanes along the north/south portion of SR-905 and along Siempre Viva Road between La Media Road and Enrico Fermi Drive offer a further alternative to driving.

3.4.3 Environmental Consequences

Community Cohesion

Impacts to community cohesion, under federal guidelines, are expected to occur when any of the following result:

- A disruption or division of the physical arrangement of an established community
- A conflict with established recreational, educational, religious, or scientific uses of the area

Impacts are based on the project's effect on local residents' sense of belonging in relation to their neighborhood or the community at large, as well as anticipated changes in the physical character of the community. The project would represent impacts to a community if it were to present either a physical or psychological barrier to activity or recreational areas of the community (Caltrans 1997).

Methods for identifying and measuring the cohesiveness of a community may include looking at the location of major activity centers used by residents (e.g., if they are clustered nearby or located out of the area), length of home ownership, percentage of residents who are elderly, and percentage of single-family ownership. A large elderly population, a high percentage of single-family ownership, long residential

tenure, and the availability and centrality of nearby activity centers are all generally indicative of a high degree of community cohesion.

Preferred Alternative and Draft EIR/EIS Build Alternatives

Implementation of the build alternatives would take place in a partially undeveloped industrial area that is not close to an existing residential community, or any recreational, educational, religious or scientific uses. The project would be consistent with surrounding commercial and industrial land uses, so its introduction into the business community would not disrupt the established community or conflict with existing community-serving uses, including parks, recreational facilities, schools or transit facilities. Access to operations of the Southwestern College satellite campus adjacent to the proposed SR-905 modifications would not be disrupted. The project would not divide any existing business complexes or disrupt existing pedestrian or vehicle circulation patterns in the land use study area. Vehicle and pedestrian access between the north and south of SR-11, and the portions of SR-905 that are affected by the project would be available at Britannia Boulevard, La Media Road, Sanyo Avenue, Enrico Fermi Drive, Alta Road and Siempre Viva Road. The business community and the general public would benefit from the reduced border wait times at existing POEs and the related regional transportation efficiencies associated with the proposed project. Any of the build alternatives would increase accessibility to East Otay Mesa and to Mexico, but the Preferred Alternative would provide the greatest feasible accessibility between SR-11 and local businesses in the East Otay Mesa area. This additional access would represent a community access benefit through enhanced connectivity between the POE and local East Otay Mesa businesses. During construction, access to the adjacent businesses would continue to be available via the existing roadways that currently access these businesses, although occasional detours and interruption of through access at cross-streets may occur. Neither the Preferred Alternative nor any of the other build alternatives would have permanent or temporary adverse impacts to community cohesion.

Variations on the Draft EIR/EIS Build Alternatives

No Toll Variation, 46-foot Median Variation, SR-905/SR-125/SR-11 Interchange Variations

Implementation of the No Toll Variation, the 46-foot Median Variation, or the SR-905/SR-125/SR-11 Interchange Variations would not alter the conclusions assessed for the project build alternatives with regard to community cohesion.

Siempre Viva Road Full Interchange Variation

While any of the build alternatives would increase accessibility to East Otay Mesa and to Mexico, the Two Interchange Alternative with the Siempre Viva Road Full Interchange Variation would provide the greatest accessibility between SR-11 and local businesses in the East Otay Mesa area. This additional access would represent a community access benefit through enhanced connectivity between the POE and local East Otay Mesa businesses. The traffic queuing analysis performed as part of the project traffic study (VRPA 2010c) indicates, however, that the Siempre Viva Road Full Interchange Variation would have the potential for queue storage and weaving problems in several parts of the interchange. Further analysis undertaken during the Draft EIR/EIS public review period concluded that the Siempre Viva Road Full Interchange Variation is not operationally feasible.

No Build Alternative

The No Build Alternative would have no permanent or temporary impacts to community cohesion. The business community and the general public would not benefit from the proposed project, the reduced border wait times at existing POEs and the associated regional transportation efficiencies. The resulting

inefficiencies in cross-border travel would have a cumulative negative social and economic effect that could adversely affect the socioeconomic health and cohesion of the East Otay Mesa business community. No adverse effect to existing residential community cohesion or social serving uses would occur due to the absence of such uses in the land use study area.

Community Character

Preferred Alternative and Draft EIR/EIS Build Alternatives

As previously noted, no residential community exists in the land use study area; with the exception of the Southwestern College site, it is industrial/commercial in character, or undeveloped but designated for future industrial development. A highway and POE/CVEF, as well as relocated electric power lines and associated power poles, would be generally compatible with this community character, although the potential exists for incompatibilities with respect to noise levels, operational issues, and visual character/quality. For the reasons listed below, the use of the required land for SR-11, its connectors to SR-905, associated SR-905 modifications, and border crossing facilities under the build alternatives would be compatible with the existing character of the area, in terms of localized noise and (adjacent business) operational issues.

Noise

- Project-generated operational noise in the undeveloped areas of the project site would not result in adverse impacts because no affected noise receptors are located in this area. In addition, project-generated noise is consistent with the future industrial character of the community at build-out, as designated in the EOMSP.
- Project-generated operational noise at adjacent industrial uses in the Sanyo Avenue area and adjacent to the proposed SR-905 modifications would not exceed 72 dBA, which is the noise abatement criterion (NAC) for industrial uses of this type (Activity Category C), according to federal noise regulations under 23 CFR 772 (HELIX 2010b).
- Improvements along SR-905 between SR-125 and Britannia Boulevard to accommodate SR-11 would be entirely within existing R/W for the SR-905 project that is approved and under construction. Project-generated operational noise at many of the receiver locations adjacent to SR-905 would exceed the applicable activity category NAC, but would not register a substantial increase over noise levels once SR-905 is operational. Only at the Southwestern College campus are there outdoor areas of frequent human use that would benefit from a reduced noise level. The Noise Abatement Decision Report (NADR) prepared for the project indicates that construction of an effective noise attenuation barrier at this location would be feasible from a technical standpoint, but not economically reasonable. Although an unmitigable noise impact would occur at the college, it would not constitute a community character impact, because the community in this area already includes SR-905 and its associated noise. The addition of the proposed auxiliary and travel lanes to SR-905 would not substantially increase noise levels at this location above levels anticipated under the approved SR-905 design, and would not substantially alter the character of the approved six-lane facility. Additional noise attributable to the SR-11 project would be minimal, and would be compatible with the character of the community adjacent to SR-905.
- Project-generated construction noise would be temporary, and therefore would not result in a community character compatibility impact.

Operational

- Approximately one acre of the partial acquisition area proposed on the PG Films (Mamapel Investments) property and a similar one-acre area on the LBA Realty property currently comprise a City drainage easement (including steep slopes). The remaining areas of parcel acquisition in this area are currently used for landscaping (in the case of PG Films) and parking (in the case of LBA Realty). On the Sanyo E&E property, the proposed acquisition area consists mainly of landscaping, although a small area (0.10 acre under the Two Interchange Alternative and 0.05 acre under the One and No Interchange Alternatives) is used as a driveway. Thus, where partial acquisitions would occur, businesses adjacent to the proposed project would likely require some changes in operations, including relocation of parking. Under the Preferred Alternative or any of the other build alternatives, the necessity for utility/drainage/wall footing easements in this area would likely have similar effects. Nevertheless, it is expected that all nearby existing businesses would be able to continue to operate, including those with partial acquisitions by the project.

One community character compatibility issue related to visual impacts has been identified, however, as follows:

- In the area immediately east of Sanyo Avenue, vertical retaining walls as high as approximately 26 feet would be placed at the edge of the R/W as close as approximately 38 feet from existing industrial buildings under the Preferred Alternative and the Two Interchange Alternative. Under the One and No Interchange Alternatives, these retaining walls would be as close as an estimated 50 feet from the existing industrial buildings. At one parcel, the wall would be directly across from the building entrance. Although few viewers would be present, this moderately high level of change to the visual environment, caused by the encroachment of the new, large-scale, visually dominant walls into the area, would result in a community character compatibility impact. Mitigation/minimization measures described in the project VIA (HELIX 2010a) and Section 3.4.4 of this Final EIR/EIS would be implemented to minimize this visual/ community character compatibility impact.

Based on the preceding analysis, one community character compatibility impact would occur under all of the build alternatives. This impact would be slightly less under the One and No Interchange alternatives, because the walls would be located farther from the existing industrial buildings. This community character compatibility impact would be mitigable through measures identified in Section 3.9 of this Final EIR/EIS, based on the VIA (HELIX 2010a) for the project.

Variations on the Draft EIR/EIS Build Alternatives

No Toll Variation

Under this variation, the proposed facilities would be expected to accommodate a higher volume of traffic/border crossers, as detailed in the Traffic Technical Report (VRPA 2011). In spite of the greater volumes of traffic and border crossers, this variation would not be expected to result in community character compatibility impacts for the same reasons as discussed for the tolled alternatives above.

46-foot Median Variation

For all of the build alternatives, partial acquisitions of the properties owned by PG Films and LBA Realty would encompass approximately four percent more land area under the 46-foot Median Variation than under the baseline Draft EIR/EIS build alternatives that would include a 22-foot median for SR-11 in the

Sanyo Avenue area. The partial acquisition of the Sanyo Avenue property would be approximately two percent greater under the 46-foot Median Variation. This would mean that more of these businesses' facilities would need to be removed or relocated (including specialized storage facilities on the PG Films properties), with consequent required operational changes. Interviews with the property owners involved have indicated that these businesses would still be able to operate, but they would be more severely affected under the 46-foot Median Variation. No community character compatibility impact would occur with respect to operational issues.

The retaining walls on each side of proposed SR-11 in the area immediately east of Sanyo Avenue, as described above, would be as close as approximately 26 feet from existing industrial buildings under the Two Interchange Alternative with the 46-foot median, and approximately 38 feet from these buildings under the One or No Interchange alternatives. This impact would be greater than under the baseline build alternatives with the 22-foot median east of Sanyo Avenue. The mitigation/minimization measures identified in Section 3.4.4 of this Final EIR/EIS, based on the project VIA (HELIX 2010a) would also apply to this variation.

The project Noise Study Report (HELIX 2010b) indicates that project-generated noise would not exceed the 72 dBA NAC in the Sanyo Avenue area under the 46-foot Median Variation, so no community character compatibility impact would occur with respect to noise. The project VIA (HELIX 2010a), however, does indicate a high (with the Two Interchange Alternative) to moderately high (with the One or No Interchange alternatives) visual impact under this variation. The VIA notes that a "moderately high" visual impact may require extraordinary mitigation practices, and landscape treatment required would generally take longer than five years to mitigate. The VIA also notes that in the case of a "high" visual impact, architectural design and landscape treatment may not mitigate the impacts, and an alternative project design may be required to avoid highly adverse impacts. This would indicate that the 46-foot Median Variation would result in a community character incompatibility impact due to issues of visual character and quality.

Siempre Viva Road Full Interchange Variation

As previously noted, the Siempre Viva Road Full Interchange Variation of the Two Interchange Alternative would result in an additional 20.2 acres of partial parcel acquisition in the vicinity of the proposed interchange at Siempre Viva Road. While the dedication of industrially designated land for transportation uses would constitute a land use impact, it would be compatible with the existing character of the area for the same reasons as discussed for the Two Interchange Alternative without this variation. No community character compatibility impact would occur with respect to operational issues. Although this interchange would take up a larger land area and would appear larger than the half interchange under the baseline Two Interchange Alternative, this difference would not be expected to result in a community character impact based on the lack of existing development in this area and the planned industrial use of the area, as well as the proximity of the proposed POE to this interchange.

No Build Alternative

As previously noted, it is possible that the No Build Alternative would only delay implementation of the project, allowing development in the area to proceed, and eventually requiring the acquisition of developed or environmentally constrained land to implement SR-11 and the Otay Mesa East POE in the future. This could result in greater noise-, operational- and visual-related compatibility impacts to community character than would occur under the currently proposed project build alternatives.

3.4.4 Avoidance, Minimization, and/or Mitigation Measures

Preferred Alternative and Draft EIR/EIS Build Alternatives

The following avoidance, minimization and mitigation measures would reduce community character compatibility impacts associated with the visual prominence of high retaining walls in the vicinity of Sanyo Avenue. Further explanation of these measures is contained in Section 3.9, *Visual/Aesthetics*, of this Final EIR/EIS and in the project VIA (HELIX 2010a).

- Architectural features, textures and colors should be used to mitigate the appearance of retaining wall surfaces and deter graffiti. Walls should incorporate architectural features such as pilasters and caps to provide shadow lines, provide relief from monolithic appearance, and reduce their apparent scale. The architectural surface treatment should follow a highway-wide theme as identified in the SR-11 Landscape Concept Plan and utilize/adapt architectural features of the adjacent SR-905 project for continuity.
- In areas where retaining walls must be placed in close proximity to and above the travel way, space should be reserved between the wall and the safety barrier to include a six-foot wide planting pocket.
- Where site conditions permit, retaining walls over 15 feet in height should be divided into two separate structures sufficiently offset from one another to create a flat landscape planting area between the two.
- Retaining walls should be located at mid slope wherever possible to provide adequate area for landscape screening between the wall and the highway.
- Retaining walls that follow the contours of the topography and maintain a constant elevation at the top of wall should be used where appropriate. This type of wall should be visually compatible with surrounding terrain and provide room at the base for a landscape screening buffer.
- Mechanically Stabilized Earth (MSE) walls that utilize a stacking tray design such as Evergreen walls should be used in place of Caltrans standard design crib walls wherever possible to provide a landscaped surface that will blend in with the surrounding landscape.
- Any solid, screening fences used on structures should be carefully coordinated with bridge aesthetics and architectural elements.
- Lighting and mileage/directional signs should be designed and coordinated comprehensively and as a complete package, either as free-standing elements or in conjunction with over/undercrossing structures and architectural features to create a unified design theme and clear driver information.

Because implementation of the Preferred Alternative or any of the other build alternatives would not impact community cohesion, would not result in residential or business relocation, would not have a substantial impact on public access to educational or religious institutions or recreation, and would not impact the parking supply in the land use study area, no additional avoidance, minimization, and/or mitigation measures would be required.

A TMP (AECOM/Caltrans 2009) has been developed to implement best management practices during project construction to minimize interruptions to traffic patterns, and to promote safety and security. The businesses of the local community could experience some temporary noise and accessibility restrictions

during construction, but the proposed project would not adversely impact community cohesion or character in this regard. No avoidance, minimization, and/or mitigation measures would be required.

Variations on the Draft EIR/EIS Build Alternatives

The above-listed avoidance, minimization, or mitigation measures would still apply if any of the variations of the build alternatives are implemented, and no additional measures would be required. This conclusion would apply to the No Toll Variation, the 46-Foot Median Variation, the SR-905/SR-125/SR-11 Interchange Variations, or the Siempre Viva Road Full Interchange Variation.

No Build Alternative

Adverse community character or cohesion impacts would occur under the No Build Alternative, because cross-border traffic would not be diverted from the existing congested POEs. However, because no action would occur, no avoidance, minimization, or mitigation measures would be required. No parking impacts, interrupted access to educational or religious institutions, or impacts due to residential or business relocations would occur, so no avoidance, minimization, and/or mitigation measures would be required.

3.5 RELOCATIONS AND REAL PROPERTY ACQUISITION

As noted in Section 3.1, *Existing and Future Land Use*, and the project CIA (HELIX/CIC Research 2010), field investigations of the land use study area were conducted on June 5, August 25 and September 25, 2009, as well as January 12, 2010. County Assessor's data were combined with the field reviews to identify the individual properties within the project area of disturbance. Each parcel was identified by assessor's parcel number (APN), site address (whenever available), the property owner, parcel size, land use, tax rate area, annual property tax, and census tract. These data are analyzed here to assess likely project impacts related to relocations and real property acquisition. Economic data in this section are derived from the economic analysis presented in the project CIA (HELIX/CIC Research 2010) and the Addendum to the CIA (CIC Research 2011). It should be noted that the project would result in no residential property acquisition, and required partial business property acquisitions would not require off-site relocations.

3.5.1. Regulatory Setting

Caltrans' Relocation Assistance Program (RAP) is based on the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (as amended) and Title 49 Code of Federal Regulations (49 CFR) Part 24. The purpose of RAP is to ensure that persons displaced as a result of a transportation project are treated fairly, consistently, and equitably so that such persons will not suffer disproportionate injuries as a result of projects designed for the benefit of the public as a whole. Please see Appendix F for a summary of the RAP.

All relocation services and benefits are administered without regard to race, color, national origin, or sex in compliance with Title VI of the Civil Rights Act (42 USC 2000d, et seq.). Please see Appendix G for a copy of the Caltrans Title VI Policy Statement.

All property acquisition and compensation activities required for project implementation are also implemented in accordance with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act (as amended) and Title 49 CFR Part 24.

3.5.2 Affected Environment

As described in Section 3.1, *Existing and Future Land Use*, the land use study area currently is largely undeveloped, and designated for industrial and technology business uses (with the exception of small areas for commercial and rural residential use).

Also as discussed in Section 3.1, land uses surrounding the proposed project are dominated by undeveloped land and industrial uses, along with several vehicle storage lots and the existing CVEF (refer to Figure 3.1-1). To date, existing and proposed development in the land use study area consists of industrial and transborder support uses, many of which were established with the expectation that facilities provided by the proposed project would be developed. The character of the surrounding community is discussed in Section 3.4.

3.5.3 Environmental Consequences

Relocations

Preferred Alternative and Draft EIR/EIS Build Alternatives

All parcel acquisitions required for implementation of the build alternatives would be partial acquisitions of industrial property east of Sanyo Avenue, and would not involve acquisition of structures. As

discussed below, property acquisitions would require operational adjustments by the businesses involved, but they would still be able to operate. While parcel occupants may be eligible for reimbursement under the RAP for the action of moving private property such as machinery, storage facilities, parking canopies, fences and equipment that is within the proposed SR-11 R/W to other portions of the affected parcels, no full residential or business relocations would be required as a result of any of the three build alternatives. The impact to private property would be slightly greater for the Preferred Alternative or Two Interchange Alternative than for the One or No Interchange alternative.

Variations on the Draft EIR/EIS Build Alternatives

Implementation of the No Toll Variation, the SR-125 Connector Variation, the SR-905/SR-125/SR-11 Full Interchange Variation or the Siempre Viva Road Full Interchange Variation would not alter the conclusions reached for the Draft EIR/EIS build alternatives. The 46-foot Median Variation would result in a greater impact to private property within the adjacent industrial developments east of Sanyo Avenue, which would be eligible for reimbursement under the RAP for the action of moving private property within the proposed SR-11 R/W to other portions of the affected parcels. This increased impact would not require any full residential or business relocations under any of the build alternatives. As with the baseline Draft EIR/EIS build alternatives, the Two Interchange Alternative with the 46-foot Median Variation would impact a greater area of private property east of Sanyo Avenue than either the One or No Interchange alternative with this variation.

No Build Alternative

No impacts to business property or residential or business relocations would occur as a result of the No Build Alternative.

Potential Property Acquisition

Subject to final design requirements, a total of 19 parcels encompassing approximately 836 acres, as listed on the San Diego County Assessor's database, would be affected by the R/W acquisition requirements of the Preferred Alternative or any of the other build alternatives, (refer to Figures 2-13a through 2-13d, 2-14a through 2-14d, 2-16a through 2-16b, and 2-17a through 2-17d). The affected parcels include 18 privately owned parcels, which consist of 4 industrial lots with improved buildings, 2 vacant industrial parcels with temporary vehicle and storage uses, 11 vacant industrial parcels and 1 vacant parcel designated for industrial and rural residential development.¹ The OWD owns the one public parcel (APN 648-070-18; refer to Figure 2-14c).

Table 3.5-1, *Partial Parcel Acquisitions for the Build Alternatives*, presents the proposed partial acquisitions of parcels under the Preferred Alternative and three Draft EIR/EIS baseline build alternatives. It should be noted that this EIR/EIS is not a "notice of intent to condemn" but is a planning document only. All property acquisitions would be undertaken in a manner consistent with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (as amended) and Title 49 CFR, Part 24, to ensure fair, consistent and equitable treatment in the process of property acquisition.

¹ Note that proposed SR-11 and the POE and CVEF sites would not traverse the portion of this parcel that is designated for residential use; such uses would be located over 1,000 feet from this area.

Table 3.5-1 PARTIAL PARCEL ACQUISITIONS FOR THE BUILD ALTERNATIVES											
Parcel Owner	Developed?	Parcel Number	Parcel Size (acres)	Preferred Alternative		Two Interchange Alternative (22-foot Median; half interchange at Siempre Viva Road)		One Interchange Alternative (22-foot Median; half interchange at Siempre Viva Road)		No Interchange Alternative (22-foot Median; half interchange at Siempre Viva Road)	
				Parcel Acquisition (acres)	Percent of Total Parcel	Parcel Acquisition (acres)	Percent of Total Parcel	Parcel Acquisition (acres)	Percent of Total Parcel	Parcel Acquisition (acres)	Percent of Total Parcel
Acquisition of Privately Owned Land											
Scannell Properties #102 LLC	No	646-130-61	4.71	1.21	25.7	1.21	25.7	0.65	13.8	0.68	14.4
Airway Diego, LLC	Yes	646-130-60	17.91	0.87	4.9	0.87	4.9	1.06	5.9	1.06	5.9
Makram A. & Maureen T. Hanna	No	646-130-27	34.39	3.45	10.0	3.45	10.0	1.24	3.6	1.24	3.6
South County Commerce Center LLC (Table 3.27-2 Map #4)	Graded	646-130-39	19.78	3.47	17.5	3.47	17.5	3.43	17.3	3.30	16.7
		646-130-40	19.82	3.79	19.1	3.79	19.1	3.57	18.0	3.64	18.4
		646-130-41	19.85	3.26	16.4	3.26	16.4	2.83	14.3	2.82	14.2
		646-130-42	19.87	5.62	28.3	5.62	28.3	3.63	18.3	3.52	17.7
Subtotal: South County Commerce Center LLC			79.32	16.14	20.3	16.14	20.3	13.46	17.0	13.28	16.7
PG Films, LLC/Mamapel Investments LLC	Yes	646-131-03	2.13	0	0	0	0	0	0	0	0
		646-131-04	2.15	0.64 ¹	29.8 ¹	0.65 ¹	30.2 ¹	0.57	26.5	0.57	26.5
		646-131-05	2.19	0.70 ¹	32.0 ¹	0.72 ¹	32.9	0.63	28.8	0.63	28.8
		646-131-06	2.06	0	0	0	0	0	0	0	0
Subtotal: PG Films, LLC/Mamapel Investments LLC			8.53	1.34 ¹	31.1 ¹	1.37 ¹	16.1 ¹	1.2	14.1	1.2	14.1
LBA Realty Fund III	Yes	646-131-09	4.27	1.33 ¹	31.1 ¹	1.36 ¹	31.9 ¹	1.19	27.9	1.19	27.9
		646-131-10	4.14	0	0	0	0	0	0	0	0
		646-131-11	3.53	0	0	0	0	0	0	0	0
		646-131-12	6.14	0	0	0	0	0	0	0	0
Subtotal: LBA Realty Fund III			18.08	1.33 ¹	7.4 ¹	1.36 ¹	7.5 ¹	1.19	6.6	1.19	6.6
Sanyo E & E Corp.	Yes	646-131-14	18.87	0.75 ¹	4.0 ¹	0.81 ¹	4.3 ¹	0.47	2.5	0.47	2.5
		646-131-17	18.86	0	0	0	0	0	0	0	0
Subtotal: Sanyo E & E Corp.			37.73	0.75 ¹	2.0 ¹	0.81 ¹	2.1 ¹	0.47	1.2	0.47	1.2
Kearny PCCP Otay 311 LLC (Otay Crossing Commerce Park; Table 3.27-2 Map #1)	No	648-070-03	158.79	30.24	19.0	27.76	17.5	27.77	17.5	24.27	15.3
		648-080-27	151.63	92.66	61.1	103.33	68.1	103.02	67.9	103.02	67.9
Subtotal: Kearny PCCP Otay 311 LLC			310.42	122.90	39.6	131.09	42.1	130.79	42.1	127.29	41.0
TPO LLC (Travel Plaza; Table 3.27-2 Map #17)	Temporary use	648-070-09	81.30	16.26	20	21.97	27.0	10.52	12.9	10.70	13.2
Kouladjian Family Revocable Trust (Bradley/Robertson Copart Salvage Auto Auctions; Table 3.27-2 Map #9)	Temporary use	648-070-13	38.19	5.61	14.7	5.61	14.7	13.62	35.7	4.81	10.4
Michael J. McKany	No	648-070-14	39.09	5.16	13.2	5.16	13.2	12.17	31.1	3.99	10.2
Otay Business Park LLC (Table 3.27-2 Map #10)	No	648-070-21	159.36	42.22	26.5	42.22	26.5	40.48	25.4	40.43	25.4
Rancho Vista Del Mar	No	648-080-18	40.00	13.10	32.8	13.89	34.7	13.89	34.7	13.89	34.7
Subtotal: All Private Land			869.03	230.34	26.5	244.84	28.2	240.75	27.7	220.23	25.3
Land Acquisition From Public Agencies											
Otay Water District	No	648-070-18	3.64	0.31	8.5	0.31	8.5	0.96	26.4	0.26	7.1
Total: All Private and Public Land			872.67	230.65	26.4	245.15	28.1	241.71	27.7	220.49	25.3

¹ Parcel acquisition in the Sanyo Avenue area would be the same under the Preferred Alternative and the Two Interchange Alternative; differences in noted acreages and percentages are due to updated calculations.
Note: All proposed parcel acquisitions are approximate and subject to final design requirements. This EIR/EIS is not a "notice of intent to condemn" but is a planning document only.

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Preferred Alternative

As shown in Table 3.5-1, under the Preferred Alternative, partial acquisitions would be the same in most areas as those associated with the Two Interchange Alternative analyzed below. (Any differences in acreages and percentages in the Sanyo Avenue area in Table 3.5-1 are due to updated calculations and project refinements that would be applied to any of the Draft EIR/EIS build alternatives if they were advanced as the Preferred Alternative at this time.) Under the Preferred Alternative, the partial acquisition area for the 18 private parcels would be approximately 230.3 acres plus 0.3 acre of the one public agency parcel. The combined total acquisition area would be 230.7 acres, representing about 26 percent of the total 873 acres of the affected properties (refer to Figures 2-13a through 2-13d).

The parcel acquisition analysis presented below for the Two Interchange Alternative would also apply to the Preferred Alternative, with the following exceptions:

- Smaller parcel takes would be required in the area of the Enrico Fermi Drive Interchange than were envisioned for the Two Interchange Alternative. Therefore, the Preferred Alternative would occupy only 20 percent instead of 27 percent of the graded parcel immediately west of the vehicle auction yard, which is currently in use for truck storage.
- To reduce impacts to sensitive species and steep slopes on the eastern side of the POE site, the Preferred Alternative would require 10.97 fewer acres of parcel acquisition in this area. This area is currently undeveloped, and is part of the Otay Crossings Commerce Park cumulative project.
- Modifications to the Siempre Viva Road Interchange to allow northbound commercial vehicle access to and from the CVEF to Siempre Viva Road would require 2.77 acres of additional parcel acquisition in the northern portion of this same Otay Crossings Commerce Park ownership (on two parcels).

As noted below, the proposed project R/W partial acquisitions would not represent a substantial proportion of the vacant industrial land designated for industrial development within the greater Otay Mesa area, nor would they adversely affect land uses or divide or change the character of the local community in the land use study area or the larger socioeconomic study area. Any relocation cost directly associated with project implementation would be subject to reimbursement under the RAP. No adverse community or regional economic impacts would result.

Two Interchange Alternative

As shown in Table 3.5-1, under the Two Interchange Alternative, the partial acquisition area for the 18 private parcels would be 244.8 acres plus 0.3 acre of the one public agency parcel. The combined total acquisition area would be 245.2 acres, representing about 28 percent of the total 873 acres of the affected properties (refer to Figures 2-14a through 2-14d).

The parcel at the southwest corner of Otay Mesa Road and Alta Road is currently used as a vehicle auction yard; the Two Interchange Alternative would traverse approximately the southern 15 percent of this parcel.

This alternative would also pass through the central portion of a graded parcel immediately west of the vehicle auction yard, which is currently in use for truck storage. The Two Interchange Alternative would bisect this parcel, occupying approximately one quarter of it as part of the Enrico Fermi Drive Interchange.

Four smaller industrial parcels just east of Sanyo Avenue that support three existing industrial buildings adjacent to proposed SR-11 would also be traversed. Two of these parcels are a part of the PG Films, LLC/Mamapel Investments LLC (PG Films) four-parcel property located on the north side of proposed SR-11. Another of the traversed parcels also is located to the north of SR-11 and is a part of the LBA Realty Fund III-Company ILLC (LBA Realty) four-parcel property. The parcel on the southern side of SR-11 is a part of a two-parcel property owned by the Sanyo E and E Corporation (Sanyo). The Two Interchange Alternative would require acquisition of approximately 16.1 percent of the PG Films property; approximately 7.5 percent of the LBA Realty property; and approximately 2.1 percent of Sanyo property.

West of Enrico Fermi Drive, SR-11 would lie primarily within the disturbance limits of the Enrico Fermi Drive off-ramp from the SR-905/SR-125 Interchange, previously approved as part of the SR-905 project. Under the SR-11 project, however, proposed property acquisitions in this area would be greater than those approved for the SR-905 off-ramp, and more traffic would be expected. Additional design information is also available for the SR-11 project in this area that was not available at the time of the SR-905 environmental review. Therefore, any land use compatibility impacts of the project alternatives would be considered attributable to the proposed project, rather than previously approved impacts of the SR-905 project.

The proposed R/W acquisition area would not represent a substantial proportion of the 5,000 plus acres of vacant industrial land designated for industrial development and/or vacant improved industrial parcels within the greater Otay Mesa area. The proposed project improvements are required for efficient circulation and access to support the planned build-out of the Otay Mesa area and are represented on the EOMSP in the approximate location of the proposed project. As noted in Sections 3.1 and 3.4 the proposed project R/W partial acquisitions would not adversely affect land uses or divide or change the character of the local community in the land use study area or the larger socioeconomic study area.

The partial acquisitions required for project implementation would not involve structure acquisitions, but rather acquisition of land currently used for parking, truck loading/unloading, and similar operations. As noted in Section 3.4, approximately one acre of the partial acquisition area proposed on the PG Films property and a similar one-acre area on the LB Realty property currently comprise a City drainage easement, including steep slopes. The remaining areas of parcel acquisition in this area are currently used for landscaping (in the case of PG Films) and parking (in the case of LB Realty). On the Sanyo property, the proposed acquisition area is mainly landscaped, although a small area (0.10 acre under the Two Interchange Alternative and 0.05 acre under the One and No Interchange Alternatives) is used as a driveway. Discussions with property owners indicate that these acquisitions would require operational adjustments, but that the businesses would still be able to operate. The acquisition and relocation activities required for the build alternatives would follow all guidelines and regulations in accordance with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act (as amended). Although some developed industrial property east of Sanyo Avenue would be impacted by the proposed SR-11 R/W, requiring relocation of some business activities to unaffected portions of these parcels, no full business relocations would occur and no employees would be displaced as a result of any of the build alternatives. Any relocation cost directly associated with project implementation would be subject to reimbursement under the RAP. No adverse community or regional economic impacts would result.

As illustrated in Figure 3.27-2, the Two Interchange Alternative would also traverse the following currently proposed private developments on parcels identified in Table 3.5-1 as undeveloped, graded or in temporary use: Saeed TM/Airway Business Center, Dillard and Judd Roll County LLC/Enrico Fermi Industrial Park South County Commerce Center, Otay Mesa Travel Plaza, Bradley/Robertson Copart Salvage Auto Auctions, Otay Crossings Commerce Park, and Otay Business Park.

One Interchange Alternative

Under the One Interchange Alternative, the partial acquisition area for the 18 private parcels would be 240.8 acres plus 1.0 acre of the one public agency parcel. The combined total acquisition area would be approximately 241.7 acres, representing about 28 percent of the total 873 acres of the affected properties as compared to the approximate 245 acres under the Two Interchange Alternative. As shown in Figures 2-16a through 2-16d, this alternative would include a full interchange at Alta Road, instead of the interchanges at Enrico Fermi Drive and Siempre Viva Road that are included in the Two Interchange Alternative, which were contemplated in the Western Alternative selected in the Phase I ROD for the proposed project. The single interchange would provide less direct access between SR-11 and surrounding local roadways, although area businesses would still be accessible via local Circulation Element roads.

Because the auxiliary lanes associated with an interchange at Enrico Fermi Drive would not be necessary under the One Interchange Alternative, this alternative would impact smaller portions of developed properties in the Sanyo Avenue area (approximately 14.1 percent instead of 16.1 percent of the PG Films property, 6.6 percent instead of 7.5 percent of the LBA Realty property, and 1.2 percent instead of 2.1 percent of the parcel owned by Sanyo). Property impacts would still be expected to occur, which could require reimbursement under the RAP if business activities within an affected parcel are relocated to an unaffected portion of that parcel. As described for the Two Interchange Alternative, no full residential or business relocations or loss of jobs would be attributable to the One Interchange Alternative.

The One Interchange Alternative would also traverse the same currently proposed private developments described above for the Two Interchange Alternative. The implementation of a single local interchange instead of the two interchanges contemplated in the Phase I ROD for the project would require design adjustments on the part of the property owners of these proposed developments, but as noted above, would be consistent with the County General Plan, EOMSP, the City General Plan and the OMCP.

No Interchange Alternative

As shown in Figures 2-17a through 2-27d, the No Interchange Alternative would not include interchanges between the POE/CVEF and the SR-905/SR-125/SR-11 interchange. Vehicles traveling to and from the POE would not have the opportunity to access local roadways to access local businesses. Southbound travelers on SR-125 and eastbound travelers on SR-905 wishing to access local businesses would not be able to use SR-11 for access, but would have to use the Siempre Viva Road exit from SR-905 and local Circulation Element roads. Similarly, northbound travelers coming from Mexico through the POE would be able to access local area businesses via the Siempre Viva Road exit off SR-905 and local Circulation Element roads. Travelers leaving local area businesses and wishing to cross the border into Mexico through the new POE would have to travel west on local roadways as far as La Media Road, then accessing SR-905 eastbound, and eventually gaining access to eastbound SR-11 and the POE via the SR-905/SR-125/SR-11 interchange. Thus, local area accessibility would be reduced under the No Interchange Alternative compared to the Two and One Interchange alternatives, but would remain viable.

Under the No Interchange Alternative, the partial acquisition area for the 18 private parcels would be 220.2 acres plus 0.3 acre of the one public agency parcel. The combined total acquisition area would be 220.5 acres, representing about 25 percent of the total 873 acres of the affected properties, as compared to the approximate 245 acres under the Two Interchange Alternative and 242 acres under the One Interchange Alternative. Because the auxiliary lanes associated with an interchange at Enrico Fermi Drive would not be necessary under the No Interchange Alternative, this alternative would require smaller acquisitions of developed parcels in the Sanyo Avenue area compared to the Two Interchange Alternative (approximately 14.1 percent instead of 16.1 percent of the PG Films property, 6.6 percent instead of

7.5 percent of the LBA Realty property, and approximately 1.2 percent instead of 2.1 percent of the parcel owned by Sanyo), similar to the One Interchange Alternative. Property impacts would still be expected to occur, which could require reimbursement under the RAP if business activities within an impacted parcel are relocated to an unaffected portion of that parcel. As described for the Two Interchange Alternative, no full residential or business relocations or loss of jobs would be attributable to the No Interchange Alternative.

The No Interchange Alternative would also traverse the same currently proposed private developments described above for the Two Interchange Alternative. The implementation of SR-11 with no local interchanges instead of the two interchanges contemplated in the Phase I ROD for the project would require design adjustments on the part of the property owners of these proposed developments, but as noted above, would be consistent with the County General Plan, EOMSP, the City General Plan and the OMCP.

Variations on the Draft EIR/EIS Build Alternatives

No Toll Variation

Implementation of the No Toll Variation would not involve additional parcel acquisitions, over and above those required for the toll versions of the Draft EIR/EIS build alternatives. Therefore, implementation of the No Toll Variation would not alter the conclusions assessed for the Draft EIR/EIS build alternatives with regard to parcel acquisition.

46-foot Median Variation

The 46-foot Median Variation would involve slightly (one to two percent) greater partial acquisitions east of Sanyo Avenue, as indicated in Table 3.5-2, *Partial Parcel Acquisitions in the Area East of Sanyo Avenue*. For each of the Draft EIR/EIS build alternatives, the baseline design includes a 22-foot median for the portion of SR-11 just east of Sanyo Avenue. As noted above, the total partial acquisition area for the 18 private parcels and 1 public parcel would range from approximately 220 acres to approximately 245 acres, depending on the project alternative.

Table 3.5-2 PARTIAL PARCEL ACQUISITIONS IN THE AREA EAST OF SANYO AVENUE (DRAFT EIR/EIS BUILD ALTERNATIVES)						
Parcel Owner	Parcel Number	Parcel Size (acres)	Draft EIR/EIS Baseline Build Alternatives with 22-foot Median		Draft EIR/EIS Baseline Build Alternatives with 46-foot Median Variation	
			Parcel Acquisition	Percent of Parcel	Parcel Acquisition	Percent of Parcel
Two Interchange Alternative						
PG Films, LLC	646-131-03	2.13	0	0	0	0
	646-131-04	2.15	0.65	30.2	0.74	34.5
	646-131-05	2.19	0.72	32.8	0.81	37.1
	646-131-06	2.06	0	0	0	0
Subtotal		8.53	1.37	16.1	1.55	18.2
LBA Realty Fund III-Company ILLC	646-131-09	4.27	1.36	31.9	1.54	36.1
	646-131-10	4.14	0	0	0	0
	646-131-11	3.53	0	0	0	0
	646-131-12	6.14	0	0	0	0
Subtotal		18.08	1.36	7.5	1.54	8.5

**Table 3.5-2 (cont.)
PARTIAL PARCEL ACQUISITIONS IN THE AREA EAST OF SANYO AVENUE
(DRAFT EIR/EIS BUILD ALTERNATIVES)**

Parcel Owner	Parcel Number	Parcel Size (acres)	Draft EIR/EIS Baseline Build Alternatives with 22-foot Median		Draft EIR/EIS Baseline Build Alternatives with 46-foot Median Variation	
			Parcel Acquisition	Percent of Parcel	Parcel Acquisition	Percent of Parcel
Two Interchange Alternative (cont.)						
Sanyo E & E Corp.	646-131-14	18.87	0.81	4.3	1.16	6.1
	646-131-17	18.86	0	0	0	0
Subtotal		37.73	0.81	2.1	1.16	3.1
Total		64.34	3.54	5.5	4.25	6.6
One and No Interchange Alternatives						
PG Films, LLC	646-131-03	2.13	0	0	0	0
	646-131-04	2.15	0.57	26.5	0.66	30.5
	646-131-05	2.19	0.63	28.6	0.72	32.8
	646-131-06	2.06	0	0	0	0
Subtotal		8.53	1.20	14.1	1.38	16.2
LBA Realty Fund III-Company ILLC	646-131-09	4.27	1.19	27.9	1.37	32.0
	646-131-10	4.14	0	0	0	0
	646-131-11	3.53	0	0	0	0
	646-131-12	6.14	0	0	0	0
Subtotal		18.08	1.19	6.6	1.37	7.6
Sanyo E & E Corp.	646-131-14	18.87	0.47	2.5	0.82	4.4
	646-131-17	18.86	0	0	0	0
Subtotal		37.73	0.47	1.2	0.82	2.2
Total		64.34	2.86	4.4	3.57	5.5

Note: All proposed parcel acquisitions are approximate and subject to final design requirements. This EIR/EIS is not a "notice of intent to condemn" but is a planning document only.

The 46-foot Median Variation would require acquisition of R/W from the same 19 parcels identified for the proposed project alternatives with the baseline 22-foot median design in the Sanyo Avenue area. The total acquisition area for the 19 parcels under the 46-foot Median Variation would range from 221 acres to 246 acres, depending on the project alternative (refer to Table 3.5-2). This represents approximately one acre more than the respective acquisition areas by alternative for the Draft EIR/EIS baseline design involving a 22-foot median. The acquisition area proportion of the affected parcels would range from 25 percent to 28 percent of the total 873 acres, similar to the baseline build alternatives. As noted for the Draft EIR/EIS baseline project alternatives involving the 22-foot median, the proposed R/W acquisition area would not represent a substantial proportion of the 5,000 plus acres of vacant raw land and/or improved vacant parcels designated for industrial development within the greater Otay Mesa area.

This variation would result in greater impacts to the developed industrial properties east of Sanyo Avenue for each of the Draft EIR/EIS baseline build alternatives, requiring relocation of industrial property/facilities within the affected parcels. Discussions with affected property owners indicate that this variation would require greater operational adjustments than under the Draft EIR/EIS baseline build alternatives, but that the businesses would still be able to operate. This variation would not result in any full residential or business relocations, or a loss of jobs. The construction period impacts associated with the 46-foot Median Variation, however, would also be expected to have a greater impact on normal

operations of the businesses in the constrained SR-11 R/W just east of Sanyo Avenue. The acquisition and relocation activities required for the build alternatives would follow all guidelines and regulations in accordance with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act (as amended) and Title 49 CFR, Part 24, to ensure fair, consistent and equitable treatment in the process of property acquisition. No adverse community or regional economic impacts would result.

SR-905/SR-125/SR-11 Interchange Variations

Implementation of the SR-905/SR-125/SR-11 Interchange variations would involve only land already owned by Caltrans and other transportation agencies, and would not require additional private parcel acquisitions, over and above those required for the baseline build alternatives. Therefore, implementation of these variations would not alter the conclusions assessed for the Draft EIR/EIS project build alternatives with regard to parcel acquisition.

Siempre Viva Road Full Interchange Variation

The Siempre Viva Road Full Interchange Variation of the Two Interchange Alternative would involve slightly greater partial acquisitions of three parcels in the area of Siempre Viva Road (see Table 3.5-3, *Partial Parcel Acquisitions for R/W near Siempre Viva Road (Two Interchange Alternative Only)*, below).

Table 3.5-3 PARTIAL PARCEL ACQUISITIONS FOR R/W NEAR SIEMPRE VIVA ROAD (TWO INTERCHANGE ALTERNATIVE ONLY)						
Parcel Owner	Parcel Number	Parcel Size (acres)	Two Interchange Alternative with Half Interchange at Siempre Viva Road		Two Interchange Alternative with Siempre Viva Road Full Interchange Variation	
			Acres for R/W Acquisition	Percent of Parcel	Acres for R/W Acquisition	Percent of Parcel
Kearny PCCP Otay 311 LLC (Table 3.27-2 Map #1)	648-070-03	158.79	27.76	17.5	43.37	27.3
	648-080-27	151.63	103.02	67.9	103.44	68.2
Subtotal:		310.42	130.79	42.1	146.81	47.3
Otay Business Park LLC (Table 3.27-2 Map #10)	648-070-21	159.36	42.22	26.5	46.41	29.1
Total		469.78	173.00	36.8	193.22	41.1

Note: All proposed parcel acquisitions are approximate and subject to final design requirements. This EIR/EIS is not a "notice of intent to condemn" but is a planning document only.

Compared to the Two Interchange Alternative with the half interchange at Siempre Viva Road, the Siempre Road Viva Full Interchange Variation of the Two Interchange Alternative would acquire slightly more land for transportation uses of the affected three parcels (approximately four percent more of the affected parcels). The Siempre Viva Road Full Interchange Variation would result in an additional 20.2 acres of undeveloped land designated for industrial use permanently converted to transportation uses. As noted above, this conversion of existing land would represent a land use impact.

No Build Alternative

Under the No Build Alternative, no R/W acquisitions would occur, so the associated marginal impacts to local business operations related to parcel acquisition would not occur. No impacts to land uses or the community would result. Pending developments in the EOMSP could proceed, however, and the proposed SR-11 R/W and sites for the Otay Mesa East POE and CVEF could become developed with other uses, or local agencies could require developers to reserve land for future long-term implementation of the project; such reserved land area may or may not prove to be adequate at that time. If the project were to be implemented at a later date, greater impacts due to associated parcel acquisitions and/or relocations could result.

Property Value Impacts

Property value impacts are not easily quantified without a thorough real estate appraisal for each individual property; they are, therefore, discussed in this Final EIR/EIS in a general manner.

Preferred Alternative and Draft EIR/EIS Build Alternatives

Negative marginal impacts on property values due to construction activities would be temporary and would not be substantial for the Preferred Alternative or any of the other build alternatives. Potential negative effects could include traffic congestion, dust, noise, traffic detours or visual effects expected to occur during the construction period. These temporary effects would be minimized by implementation of construction best management practices (BMPs) and a TMP.

All of the build alternatives would generate positive marginal economic benefits derived from improved regional transportation in conformance with adopted regional land use plans. Improved regional transportation performance, better accessibility, and safer, more efficient border crossing operations would result in increased demand for industrial and commercial properties within the local community and the greater San Diego region.

Economic impacts of the proposed project would be beneficial, but would be relatively small compared to the overall size of the San Diego regional economy. Annual total economic impact would be less than 0.5 percent of the San Diego regional economy today. Employment benefits would range from a low of about 800 annual jobs to a high of about 9,200 new jobs created within the regional economy from the reduced border crossing wait times and from the operations staffing at the POE and associated facilities (depending upon whether or not a toll would be charged and the actual border crossing delay reduction that is ultimately achieved). The demand for real property within the region would be expected to increase with the projected growth of the local economy. The resulting countywide property values would likely increase at least proportionately with economic growth, and could exceed the marginal economic growth, because of the finite supply of developable land within the region. As in the rest of the county, property values in the socioeconomic study area would be expected to increase at least proportionately with economic growth, but would also benefit from the enhanced circulation, access and infrastructure investment in the local community associated with the project.

Variations on the Draft EIR/EIS Build Alternatives

Implementation of the 46-foot Median Variation, the SR-125 Connector Variation, the SR-905/SR-125/SR-11 Full Interchange Variation, or the Siempre Viva Road Full Interchange Variation would not affect the conclusions assessed for the Draft EIR/EIS build alternatives with regard to property value.

The No Toll Variation could lead to decreased use of the existing Otay Mesa POE, which could result in less economic activity in this area.

No Build Alternative

For the No Build Alternative, the regional economy would not benefit from the proposed improvements, the reduced border crossing wait times, and improved local and regional circulation, access, and transportation efficiencies. The inefficiencies in local community and regional circulation, as well as cross-border travel delays, would have a cumulatively negative effect on property values. These negative economic impacts would be marginally adverse, but not substantial, based on the expected border crossing volume and associated border wait times for the 2015 opening year and the 2030 planning horizon year.

Fiscal Impacts

Potential fiscal impacts resulting from the proposed project primarily would include increases in property tax revenue and sales tax revenue resulting from increased economic activity within the San Diego region. No fiscal tax losses were identified for the proposed project. Although beneficial fiscal revenues would be generated as a result of the project, they would not represent a substantial benefit to local governments relative to total tax revenues. As discussed below, fiscal impacts would not be substantial for any of the project alternatives or design variations.

Preferred Alternative and Draft EIR/EIS Build Alternatives

Property Tax Impacts

There would be an initial reduction in property tax revenues with implementation of the Preferred Alternative or any of the other build alternatives as a result of the acquisitions of privately owned property required by the project R/W and the removal of associated acquisition areas from the tax roll as they change from private to public ownership. No property tax is currently paid by the Otay Water District on the one public parcel requiring part-acquisition for R/W. The estimated reduction in property tax revenue would not be substantial compared to the total countywide property tax revenue of \$1.8 billion reported for FY2009 (San Diego County Treasurer-Tax Collector 2010), and would likely be more than offset by the increase in property values generated throughout the local economy as a result of the accrued economic benefits generated from the reduced border crossing wait time.

The total amount of property tax assessed in FY2011 for the 18 privately held impacted parcels was \$1,461,068. The Preferred Alternative would reduce this property tax revenue level by approximately \$275,450; i.e., 18.9 percent of the total annual tax revenue from these parcels (see Table 3.5-4, *Estimated Property Tax Impacts for Taxable Parcel Partial Acquisitions by Alternative/Variation*). The Two Interchange Alternative would reduce this property tax revenue level by approximately \$292,745; i.e., 20.0 percent of the total annual tax revenue from these parcels (see Table 3.5-4). The One Interchange Alternative would reduce this property tax revenue by an estimated \$310,737 (about 20.7 percent), while the No Interchange Alternative would reduce property tax revenue by an estimated \$255,357; i.e., 17.5 percent of the total tax revenue from the affected parcels. Property value increases resulting from project implementation could increase property tax revenues to offset these property tax revenue reductions.

Table 3.5-4
ESTIMATED PROPERTY TAX IMPACTS
FOR TAXABLE PARCEL PARTIAL ACQUISITIONS BY ALTERNATIVE/VARIATION

Project Alternative	Number Of Parcels¹	Property Tax FY2011	Loss as Percent of Total Tax	Estimated Property Tax Loss
Build Alternatives and Variations²				
Preferred Alternative	18	\$1,461,068	18.9%	\$275,450
Two Interchange Alternative	18	\$1,461,068	20.0%	\$292,745
One Interchange Alternative	18	\$1,461,068	20.7%	\$301,737
No Interchange Alternative	18	\$1,461,068	17.5%	\$255,357
46-foot Median Design Variation				
Two Interchange Alternative	18	\$1,461,068	20.8%	\$303,674
One Interchange Alternative	18	\$1,461,068	21.4%	\$312,666
No Interchange Alternative	18	\$1,461,068	18.2%	\$266,286
Siempre Viva Road Full Interchange Variation				
Two Interchange Alternative only	18	\$1,461,068	21.3%	\$310,856
Two Interchange Alternative with 46-foot Median Variation	18	\$1,461,068	21.0%	\$321,785
No Build Alternative	18	\$1,461,068	0%	\$0

¹ No property tax impact would result from partial acquisition of the one tax-exempt public agency-owned parcel and that parcel was not included with the parcels in this table.

² The Preferred Alternative incorporates the SR-125 Connector Variation. Data for the Two, One or No Interchange Alternatives, with or without the 46-foot Median Design Variation or the Siempre Viva Road Full Interchange Variation, would not change with incorporation of the No Toll Variation or the SR-905/SR-125/SR-11 Interchange Variations, as these variations would not add to the property taxes associated with any of the baseline alternatives.

Sales Tax Impacts

Sales tax estimates are based on the annual operation of the POE and would not change based on differences between build alternatives. Neither the Preferred Alternative nor any of the other build alternatives, including the possible combinations of one or more variations, would impact land use elements that would be directly tied to retail sales or the direct generation of sales tax revenue, although temporary uses such as the vehicle auction yard and truck storage may generate limited sales tax revenue. Nevertheless, any of the build alternatives would generate regional economic benefits from the reduced border crossing wait times, and would indirectly generate an increase in retail sales and sales tax revenues within the County. The amount of increase in retail sales and sales tax revenue for the regional economy would be beneficial, but not substantial in relation to the current annual \$45.6 billion in taxable retail sales for the County.

As noted in Table 3.5-5, *Estimated Annual Sales Tax Revenue Generated by Alternative/Variation*, the estimated annual indirect sales tax revenue generated by the build alternatives could reach as high as \$4.5 million (on taxable sales of about \$52 million) in the 2015 opening year and \$7.6 million (on taxable sales of about \$87 million) per year by 2030. The resulting sales tax revenues generated by the build alternatives would be beneficial, but at most would represent about 0.1 percent of the countywide sales tax revenue. No permanent access or sales tax impacts would occur for the retail businesses in the Otay Mesa community as a result of the construction period. No businesses or taxable sales would be displaced as a result of the construction or operation of the build alternatives. The San Diego region would be expected to benefit marginally from the small, but increased, overall level of retail sales activity.

Table 3.5-5 ESTIMATED ANNUAL SALES TAX REVENUE GENERATED BY ALTERNATIVE/VARIATION, 2015 AND 2030	
Project Alternative/Year	Sales Tax (in Millions)
Build Alternatives	
By 2015	\$4.5
By 2030	\$7.6
No Toll Variation	
By 2015	\$0.4
By 2030	\$0.5
46-foot Median and All Interchange Variations	
By 2015	\$4.5
By 2030	\$7.6
No Build Alternative	\$ 0

Variations on the Draft EIR/EIS Build Alternatives

No Toll Variation

Implementation of the No Toll Variation would not alter the conclusions reached for the project build alternatives with regard to property tax revenues. This variation would involve the same acquisitions of privately owned, property tax-generating parcels.

Implementation of the No Toll Variation would result in less sales tax revenue than the proposed project with a toll. This is because the toll itself is not a sales tax, but its removal would mean that border wait times for commercial vehicles would not be reduced to the same degree and consequent regional economic benefits (and associated sales tax revenue) would not be as high as would be expected under the toll alternatives. The estimated annual indirect sales tax revenue generated by the proposed project build alternatives without a toll would be in the range of \$400,000, compared with revenues of up to \$4.5 million with toll in the 2015 opening year. By 2030, the estimated annual indirect sales tax revenue would be in the range of \$500,000 without the toll, as compared to \$7.6 million with the toll. Nonetheless, because this difference would represent so small a portion of regional sales tax revenue, implementation of the No Toll Variation would not alter the conclusions reached for the project build alternatives with regard to sales tax revenues.

46-foot Median Variation

For the 46-foot Median Variation, the marginal property in tax loss compared to the Draft EIR/EIS baseline build alternatives with the 22-foot median would be about \$12,000 per year in each case. Implementation of the Two Interchange Alternative with the 46-foot Median Variation would result in a tax loss of \$303,674, or 20.8 percent of the total property tax paid on these parcels. For the One Interchange Alternative with the 46-foot Median Variation, the property tax loss would be \$312,666, or 21.4 percent. Implementation of the No Interchange Alternative with the 46-foot Median Variation would result in a decrease in property tax revenue of \$266,286, or about 18.2 percent of the total property taxes paid by the 18 privately held parcels that would be affected.

The resulting decrease in property tax revenues would represent less than 0.1 percent of total property tax revenue and would not be a substantial fiscal impact for the City or the County.

Implementation of the 46-foot Median Variation would not alter the conclusions associated with the Draft EIR/EIS build alternatives with regard to sales tax revenues.

SR-905/SR-125/SR-11 Interchange Variations

Implementation of the SR-905/SR-125/SR-11 Interchange design variations would not alter the conclusions identified for the Draft EIR/EIS build alternatives with regard to property tax revenues and sales tax revenues. None of these variations would involve acquisitions of privately owned, tax generating parcels.

Siempre Viva Road Full Interchange Variation

The Siempre Viva Road Full Interchange Variation would apply only to the Two Interchange Alternative. The marginal property tax loss compared to the baseline Two Interchange Alternative would be about \$18,000. Implementation of the Two Interchange Alternative with the Siempre Viva Road Full Interchange Variation would result in a total initial property tax loss of \$310,856, or 21.3 percent of the total property tax paid on the 18 affected privately held parcels. The maximum property tax impact of \$321,785 (22.0 percent) would occur for the Two Interchange Alternative with the Siempre Viva Road Full Interchange Variation combined with the 46-foot Median Variation.

The resulting decrease in property tax revenues would represent less than 0.1 percent of total property tax revenue and would not be a substantial fiscal impact for the City or the County.

Implementation of the Siempre Viva Road Full Interchange Variation would not alter the conclusions reached for the Two Interchange Alternative with regard to sales tax revenues.

No Build Alternative

Because there would be no action, there would be no property tax or sales tax loss or benefit under the No Build Alternative.

3.5.4 Avoidance, Minimization, and/or Mitigation Measures

Preferred Alternative and Draft EIR/EIS Build Alternatives

Impacts of any of the build alternatives relating to relocations or property acquisitions would be avoided, minimized or mitigated through conformance with Caltrans' RAP, which is based on the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (as amended) and Title 49 Code of Federal Regulations Part 24.

Variations on the Draft EIR/EIS Build Alternatives

Impacts of any of the build variations relating to relocations or property acquisitions would be avoided, minimized or mitigated through conformance with Caltrans' RAP, which is based on the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (as amended) and Title 49 CFR Part 24.

No Build Alternative

Under the No Build Alternative, substantial economic benefits would not be realized. No project action would occur under the No Build Alternative; and no associated avoidance, minimization or mitigation measures would be required.

3.6 ENVIRONMENTAL JUSTICE

This section discusses the likely impacts of the proposed project on minority and low-income populations in the socioeconomic study area, and is based on the project CIA (HELIX/CIC Research 2010) and the Addendum to the CIA (CIC Research 2011).

3.6.1 Regulatory Setting

All projects involving a federal action (funding, permit, or land) must comply with EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, signed by President Clinton on February 11, 1994. This EO directs federal agencies to take the appropriate and necessary steps to identify and address disproportionately high and adverse effects of federal projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law. Low income is defined based on the HHS poverty guidelines. For 2010, this was \$22,050 for a family of four (the 2000 federal poverty guideline of \$17,050 for a family of four, is applied when only 2000 population data are available).

All considerations under Title VI of the Civil Rights Act of 1964 and related statutes have also been included in this project. Caltrans' commitment to upholding the mandates of Title VI is evidenced by its Title VI Policy Statement, signed by the Director, which can be found in Appendix G of this document.

3.6.2 Affected Environment

The environmental justice evaluation in this section is based on the demographic information presented in Section 3.4, including the population, employment and housing information summarized in Table 3.4-1. As previously noted, the proposed project would be located in CT 100.15, which encompasses the area in the vicinity of the project as well as the regional area most likely to be affected by the proposed project (refer to Figure 3.3-1). CT 100.15, which is designated as the project socioeconomic study area, has a very high minority population. A complete data set from the 2010 Census is not yet available at the census tract level and therefore a combination of 2010 Census data, 2000 Census data and available 2010 SANDAG estimates are used in this analysis. According to the 2010 Census, the residents in the census tract were 82.9 percent Hispanic (compared to 32.0 percent Hispanic in San Diego County overall and 16.4 percent nationwide). Racial minorities represented 47.2 percent of the census tract population (compared to 36.0 percent countywide and 37.6 nationwide).

The 2000 Census data and estimated household income data for 2010 were used to identify low-income populations. Residents in CT 100.15 have a lower median household income than residents countywide. In the 2000 Census, the population of the socioeconomic study area had a median household income of \$29,723, which was 37 percent lower than the countywide median household income of \$47,067. The 2010 SANDAG estimated median household income for CT 100.15 was \$40,381, which was 36 percent lower than the countywide estimated median household income of \$62,771. According to the 2000 Census data, 29.0 percent of households in CT 100.15 reported incomes below the 2000 federal poverty guideline of \$17,050 for a family of four, more than twice the countywide level of 8.4 percent. Therefore, a low-income population is present within the census tract at a much higher level than the percentage identified throughout the county.

In terms of identifying persons who live in geographic proximity, existing residential communities are more than 1.5 miles from the proposed project. Only a few residences have been identified in the immediate vicinity of the project. These are primarily in a cluster along Otay Mesa Road, approximately 1,000 feet north of SR-11, in the census tract north of CT 100.15. Another house is located just beyond the land use study area, approximately 2,200 feet west of the terminus of the project modifications to

SR-905 at the Britannia Boulevard Interchange. In addition, a few other isolated single-family residences are located one or more miles from the proposed project in areas to the north and west (beyond the limits of the land use study area). The minority or low-income status of the residents in the three closest homes has not been determined, due to privacy considerations.

3.6.3 Environmental Consequences

As discussed above in Section 3.6.2 CT 100.15 has a very high percentage minority population. In addition, a low-income population is present within the census tract at a much higher level than the average percentage identified for the County. Therefore, adverse socioeconomic impacts of the proposed project would be considered to fall disproportionately on minority and low-income populations.

The Caltrans Environmental Justice in Transportation Planning and Investments Desk Guide (Desk Guide; ICF Consulting [ICF] 2003) notes that, “The determination of whether a transportation project will have a disproportionately high and adverse impact is at once perhaps the most critical yet least well-defined aspect of environmental justice assessment.” The Desk Guide recommends that the impacts of a proposed project on minority and low-income communities be evaluated in comparison to the impacts to the general population, although the determination of whether an impact is adverse should not turn solely on the size of the affected population. In the case of the proposed project, the residential population in general in the census tract encompassing the socioeconomic study area has been identified as a minority and low-income population. Therefore, project impacts and benefits would accrue to both types of populations of concern for environmental justice.

Based on technical analysis conducted to evaluate potential impacts of the proposed project, adverse impacts related to land use, traffic, aesthetics, noise and biological resources would occur under the Preferred Alternative or any of the other build alternatives, although identified measures would avoid, minimize or mitigate these impacts. In some cases (such as noise and aesthetics), these impacts would be localized within the project’s immediate vicinity, which is industrial in nature and has no residential population. However, because less localized potential impacts could fall primarily on a minority and low-income population within the larger surrounding socioeconomic study area, EO 12898 requires that extensive outreach efforts be made to the affected community, to educate the community regarding the project and its potential impacts, and receive public input regarding the development of the project. Community outreach efforts have included the scoping meeting and public meetings for Phase I and Tier II, meeting notices in Spanish, interpreters at public meetings, and meetings with local stakeholders as discussed below in Section 5.2.2, *Public Meetings*. Public involvement/community outreach efforts conducted for the proposed project that focused on reaching minority and low-income populations include the following:

- In Phase I, the Notice of Public Meeting for the Public Scoping Meeting held on June 6, 2007 was published in the San Diego Union Tribune in English and the *Hispanos Unidos* newspaper in Spanish. The Notice of Public Meeting for the public meeting for the Draft PEIR/PEIS held on February 20, 2008 was published in the *San Diego Union Tribune* in English and Spanish. A Spanish interpreter was available to translate for Spanish-speaking attendees at both meetings.
- Notices of the Tier II Public Scoping Meeting held on December 4, 2008 from 5:00 p.m. to 7:30 p.m. were mailed to the cooperating/participating agencies, state, federal and local agencies, Mexican agencies with an interest in the program, elected officials, and members of the public. The Notice of Public Meeting was published in the South County Edition of the *Union Tribune* on November 20, 2008 in both English and Spanish editions. The Notice of Public Meeting for the Draft EIR/EIS that was held on January 19, 2011, was also published in the *San Diego Union*

Tribune in English and Spanish. A Spanish interpreter was made available at the Public Meeting to translate for Spanish-speaking attendees at both meetings.

- Numerous meetings have been held with members of public agencies and stakeholders, as documented in Chapter 5.0 of this Final EIR/EIS.

Development of the project alternatives reflects input received from the community, consistent with the requirements of EO 12898.

The proposed project would generate many benefits in the region. In general, all build alternatives of the proposed project would provide a regional transportation facility that would draw commercial vehicles away from local streets and route this traffic more efficiently to and from the international border. Most of the project construction would occur on undeveloped, vacant land planned for industrial uses or within existing highway R/W. The improvement in the regional transportation system would enhance existing and future development along local roads by reducing congestion and emissions from commercial vehicles, particularly large trucks. Regional through-trips to and from the international border made on local streets by personal vehicles and buses would be routed to the proposed project, further reducing existing congestion. Specific benefits of the proposed project to the minority, low-income population in the census tract that encompasses the project would include the following:

- Reduced border wait times for pedestrians, personal vehicles, and commercial vehicles at the new POE
- Reduced border wait times at existing POEs due to diversion to the new POE
- Increased border crossing choice for drivers and pedestrians provided by a third POE
- Increased POE options in the event of a disaster or other emergency requiring closure of a POE
- Reduced traffic congestion on many local streets
- Reduced numbers of large trucks on local streets
- Reduced idling of vehicles waiting to cross the border
- Enhancement of the local, regional, and national economy due to reduced border wait times for commercial and personal crossings¹
- Creation of a more inviting environment for retail, commercial, office, industrial, and other development along local roads
- Direct and indirect creation of jobs, including short-term construction jobs and long-term employment opportunities²

¹ The analysis in the project CIA (HELIX/CIC Research 2010) indicates that the total annual economic output generated in 2015 by the reduced border wait times for commercial border crossings as a result of any of the build alternatives (with toll) would range from a low estimate of \$177 million and 940 jobs for the San Diego regional economy to a high of \$971 million and 5,255 jobs. On a national level, economic output and employment generated would be approximately three times these figures.

By the project horizon year of 2035, the total annual economic output generated by the reduced border wait time for commercial border crossings as a result of any of the build alternatives would range from a low estimate of \$297 million and 1,575 jobs for the San Diego regional economy to a high of \$1.63 billion and 8,807 jobs. On a national level, economic output and employment generated would be approximately three times these figures.

² The analysis in the Addendum to the CIA (CIC Research 2011) indicates that the Preferred Alternative is projected to produce an estimated total output impact of \$1,082.6 million, 8,534 total jobs, and a total income of \$470.9 million throughout the regional economy. The analysis in the project CIA (HELIX/CIC Research 2010) indicates that the Two Interchange Alternative is projected to produce an estimated total output impact of \$638.7 million, 5,023 total jobs, and a total income of \$277.4 million throughout the regional economy. The One Interchange Alternative is projected to produce an estimated total output impact of \$633.5 million, 4,984 total jobs, and a total income of \$275.2 million. The No Interchange Alternative is projected to produce an estimated total output impact of \$625.7 million, 4,926 total jobs, and a total income of \$271.9 million. The SR-125 Connector Variation is projected to add an estimated total output impact of \$32.6 million, 320 total jobs, and an additional total income of \$13.8 million to any of the baseline Draft EIR/EIS build alternatives. The SR-905/SR-125/SR-11 Full Interchange Variation is

For all build alternatives that would involve a toll for vehicles using SR-11, including the Preferred Alternative, the potential for hardship to the low-income population must be examined. For these alternatives, the toll that would be implemented for vehicles would not deny receipt of benefits or make the project inaccessible to a low-income population for the following reasons:

- There would be no toll associated with crossing the international border at the San Ysidro and Otay Mesa POEs (as under existing conditions), and the existing Otay Mesa POE is only one mile away from the new POE
- Both existing POEs are projected to experience a reduction in border wait times due to provision of a third POE, which would benefit users of the existing POEs
- No toll would be charged to pedestrians crossing the international border at the new POE
- Other road facilities would provide alternative, non-toll access to similar areas in Otay Mesa
- Economic benefits of the project would be experienced by the entire population, regardless of the toll
- Economic benefits to the region and the nation are predicted to be greater with a toll facility because of reduced border wait times at the new POE

The discussion below evaluates the toll issue associated with each of the different alternatives.

Preferred Alternative

As in the case of the Two Interchange Alternative, discussed below, no substantial impacts would be expected to fall disproportionately on the minority and low-income populations in the socioeconomic study area as a result of implementation of the Preferred Alternative; these populations would experience substantial benefits from the Preferred Alternative; and appropriate public involvement/community outreach efforts were conducted for the proposed project.

Two Interchange Alternative

For this alternative, toll facilities would be located at the Enrico Fermi Drive Interchange and just west of the new POE. Drivers for whom the toll would be a hardship would travel on existing surface streets and cross the border at the existing POEs, as under existing conditions. Drivers not crossing the border would not access SR-11 if the toll would be a hardship. However, drivers amenable to paying a toll would have the option to use SR-11 to access Enrico Fermi Drive or Siempre Viva Road as well as the new POE. To the extent that such local access would be a benefit, this alternative would be the least accessible to low income populations because of the toll. However, all of the regional project benefits listed above would be experienced by both minority and low-income populations in the socioeconomic study area. Overall, no substantial impacts would be expected to fall disproportionately on the minority and low-income populations in the socioeconomic study area, these populations would experience substantial benefits from the Two Interchange Alternative, and appropriate public involvement/community outreach efforts were conducted for the proposed project.

One Interchange Alternative

For this alternative, toll facilities would be located at the Alta Road Interchange and just west of the new POE. There would be no direct access to other local roadways such as Enrico Fermi Drive or Siempre

projected to add an estimated total output impact of \$60.4 million, 455 total jobs, and an additional total income of \$25.5 million to any of the baseline Draft EIR/EIS build alternatives. The Siempre Viva Road Full Interchange Variation is projected to add an estimated total output impact of \$10.8 million, 82 total jobs, and an additional total income of \$4.6 million to the baseline Two Interchange Alternative.

Viva Road from SR-11. As with the Preferred Alternative and the Two Interchange Alternative, drivers for whom the toll would be a hardship would not use SR-11 and would cross the border at the existing POEs instead. Drivers amenable to paying a toll could use SR-11 to access Alta Road. However, this project design would represent less of a local access benefit because there would be only one interchange. As in the case of the Two Interchange Alternative, all of the regional project benefits listed above would be experienced by both minority and low-income populations in the socioeconomic study area under the One Interchange Alternative. Overall, no substantial impacts would be expected to fall disproportionately on the minority and low-income populations in the socioeconomic study area, these populations would experience substantial benefits from the One Interchange Alternative, and appropriate public involvement/community outreach efforts were conducted for the proposed project.

No Interchange Alternative

For this alternative, toll facilities would be located just west of the new POE. As for the other two alternatives, drivers for whom the toll would be a hardship would cross the border at the existing POEs. Drivers not crossing the international border would not have a reason to access SR-11 because local roads would not be accessible from SR-11. This design would tend to inhibit local users of the new regional transportation system because of its lack of connection to local roads, not because of issues associated with a toll. As in the case of the other build alternatives, all of the regional project benefits listed above would be experienced by both minority and low-income populations in the socioeconomic study area under the No Interchange Alternative. Overall, no substantial impacts would be expected to fall disproportionately on the minority and low-income populations in the socioeconomic study area, these populations would experience substantial benefits from the No Interchange Alternative, and appropriate public involvement/community outreach efforts were conducted for the proposed project.

Variations on the Draft EIR/EIS Build Alternatives

No Toll Variation

The No Toll Variation, which could apply to any of the three build alternatives, would involve the SR-11 corridor operating as a freeway instead of a toll highway. Drivers would not have to choose surface streets versus SR-11, or the existing POEs versus the new POE because of the toll. This variation of the Two Interchange Alternative would be the most accessible to low income populations (compared to the No Toll Variation of the One or No Interchange alternatives). However, economic analysis indicates that the No Toll Variation would result in decreased overall economic benefits compared to the toll alternatives because there would be less reduction in border wait times. Therefore, the regional and national economic benefits would be less for the No Toll Variation. Overall, no substantial impacts would be expected to fall disproportionately on the minority and low-income populations in the socioeconomic study area, these populations would experience substantial benefits from the project under the No Toll Variation, and appropriate public involvement/community outreach efforts were conducted for the proposed project.

46-foot Median Variation, SR-905/SR-125 SR-11 Interchange Variations, and Siempre Viva Road Full Interchange Variation

These design variations would not be expected to affect the environmental justice impact analysis discussed above for the Two, One and No Interchange alternatives. As noted above, no substantial impacts would be expected to fall disproportionately on the minority and low-income populations in the socioeconomic study area, these populations would experience substantial benefits from the project under these design variations, and appropriate public involvement/community outreach efforts were conducted for the proposed project.

No Build Alternative

Under the No Build Alternative, the project site would remain undeveloped; no new environmental impacts would occur. Under the No Build Alternative, however, drivers would not have an alternative crossing location to the existing congested POEs, and traffic (including large trucks) would not be diverted from local streets to SR-11. The existing population would continue to experience the impacts associated with border wait times and growing traffic congestion. Because the San Ysidro POE is located in a community of primarily low-income, minority residents, the impacts of excessive congestion would tend to fall primarily on this population; therefore, marginally adverse environmental justice impacts would be expected to result from the No Build Alternative. The beneficial impacts that would be expected to result from the build alternative would not be realized under the No Build Alternative.

3.6.4 Avoidance, Minimization and/or Mitigation Measures

For implementation of the Preferred Alternative or any of the other build alternatives and variations, , no substantial impacts would be expected to fall disproportionately on the minority and low-income populations in the socioeconomic study area, these populations would experience substantial benefits from the project, and appropriate public involvement/community outreach efforts were conducted for the proposed project.

Preferred Alternative and Draft EIR/EIS Build Alternatives

Because no adverse environmental justice impacts would result from implementation of the build alternatives, no avoidance, minimization, or mitigation measures would be required.

Variations on the Draft EIR/EIS Build Alternatives

Because no adverse environmental justice impacts would result from implementation of the 46-foot Median Variation, the SR-125 Connector Variation, the SR-905/SR-125/SR-11 Full Interchange Variation, or the Siempre Viva Road Full Interchange Variation, no avoidance, minimization, or mitigation measures would be required.

While the regional and national economic benefits would be less under the No Toll Variation of the Draft EIR/EIS build alternatives, no adverse environmental justice impacts would result from its implementation. Accordingly, no avoidance, minimization, or mitigation measures would be required.

No Build Alternative

Under the No Build Alternative, cross border traffic would not be diverted from the existing congested POEs to the proposed Otay Mesa East POE. Nevertheless, because no action would occur, no avoidance, minimization, or mitigation measures would be required.

Based on the above discussion and analysis, none of the project build alternatives and variations would cause disproportionately high and adverse effects on any minority or low-income populations as per EO 12898 regarding environmental justice.

3.7 UTILITIES/EMERGENCY SERVICES

3.7.1 Regulatory Setting

Public utilities, such as water and gas distribution pipelines, are often placed within streets that are franchised public R/W. Therefore, disturbing a street or the utilities underneath could affect utility levels of service. Pursuant to California Public Utilities Code (CPUC), “A district may construct works across or along any street or public highway, or over any of the lands which are the property of the state, and it shall have the same rights and privileges appertaining thereto as are granted to municipalities within the state. The district shall restore any such street or highway to its former state as near as may be and shall not use it in a manner to unnecessarily impair its usefulness” (CPUC, Section 12808). This does not apply to electrical transmission facilities (CPUC, Section 12808.5).

3.7.2 Affected Environment

Utilities that could be affected by project implementation are those that occur within the footprints of the proposed SR-11 (including the relocated power pole sites), POE, and CVEF (refer to Figure 1-2, *Project Area Map*).

Utilities

The Otay Mesa and Otay Mesa East POE Feasibility Study (GSA 2008) notes that the Otay Mesa East POE site is currently undeveloped, with existing utilities to be extended from the nearest service locations. A number of existing utility lines are present within the study area (including portions of the POE/CVEF sites and the SR-11 corridor), and could potentially be impacted by project implementation. Specific anticipated utility needs for the project include water, sewer, electricity, natural gas, and telecommunications. A summary of existing and projected utility services in the project study area is provided below.

Water

Water service in the study area and vicinity is provided by OWD. The ability of the OWD to provide water to the project for the next 20 years, as required by Senate Bill (SB) 610, is directly linked to the ability of the San Diego County Water Authority (SDCWA) to purchase sufficient water from the Metropolitan Water District of Southern California (MWD), with MWD dependent upon the sufficiency of water deliveries from its existing water supply. The MWD existing water supply consists of deliveries from the Colorado River via the Colorado River Aqueduct, and northern California via the State Water Project (SWP). In addition, MWD has obtained water from supplemental sources over the years to augment the main supplies, including the Imperial Irrigation District/Water Authority Transfer, and the Coachella and All-American Canal Lining Projects (MWD 2005). Potential future water supply projects include a proposed desalination plant in Carlsbad.

Water is supplied to the study area region through Pipeline No. 3 of the SDCWA Second San Diego Aqueduct, which flows from north to south. The water supply is conveyed by gravity flow through a 24-inch transmission main to the 571-1 Reservoir at the terminus of the aqueduct (Montgomery Watson 1995). Existing distribution lines provide water to local facilities in the study area vicinity, including the Donovan State Prison, County detention facilities, business/industrial sites, the existing Otay Mesa POE/CVEF, and residences along Otay Mesa Road. Local distribution lines also provide emergency water service to Mexico. Existing water lines in the project study area and vicinity are summarized below:

- 16-inch-/12-inch-diameter asbestos cement pipe (ACP) potable water pipeline in Alta Road
- 24-inch-diameter ACP potable water pipeline in Alta Road
- 12-inch-diameter polyvinyl chloride (PVC) potable water pipeline in Enrico Fermi Drive

- Recycled water pipeline in Sanyo Avenue
- 12-inch-diameter ACP potable water pipeline in Via de la Amistad
- 12-inch-diameter ACP potable water pipeline in Airway Road

Recycled Water

OWD policy requires the use of recycled water for parks and landscaping irrigation needs, and encompasses an Incremental Interruption and Conservation Program which would be triggered by regional water shortages and other consumption-reducing circumstances (OWD 1984). Existing recycled water production within the OWD occurs at the Ralph W. Chapman Water Recycling Facility, with additional supplies purchased from the City of San Diego South Bay Water Reclamation Plant. These two sources currently provide a combined total of approximately 7 mgd of recycled water in the OWD service area (OWD 2005). Recycled water lines currently exist in the Sanyo Avenue area. While OWD requires construction of separate recycled water distribution systems to serve everyday irrigation demands, sufficient supplies of recycled water are not yet available in the OWD service area. As a result, several existing recycled water systems will continue to be used for potable water distribution until additional recycled water supplies become available. Current plans to provide recycled water to meet projected demands include the expanded use of advanced treatment at local wastewater treatment plants.

Sewer

The project study area is located within the City of San Diego's Metro Sewer system (Metro System), which serves over 2.2 million people in San Diego (including the City of San Diego, 15 other cities and districts, and the County of San Diego). The Metro System service area includes 450 square miles and provides treatment for an average of 180 million gallons per day (mgd) of wastewater at the Point Loma Wastewater Treatment Plant (WWTP) with a capacity of 240 mgd (City 2010).

Sewer service in the County portion of the project area is provided by the County's Wastewater Management (WWM) Section through the East Otay Mesa Sewer Maintenance District (EOMSMD) which was formed to collect fees required to obtain service through the Metro System. Wastewater flows originating within the EOMSMD are collected and transmitted through the Otay Mesa Trunk Sewer (OMTS) to the Point Loma WWTP for treatment and disposal. Currently, the EOMSMD has the rights to send 1.0 mgd to the Point Loma WWTP, with this capacity purchased from the Spring Valley Sanitation District. It is estimated that buildout of the EOMSP will require a total sewer capacity of approximately 4 mgd. The 1.0 mgd purchased by the EOMSMD is intended to initially accommodate a minimum of 400 acres of "Industrial," "Technology Business Park," and "Commercial" land use development within the EOMSP.

Solid Waste

The solid waste disposal facility that currently serves Otay Mesa is the Otay Landfill, located in the City of Chula Vista. As of November 2006, this landfill had a remaining capacity of 33,070,879 cubic yards; its estimated cease-to-operate date is in 2021 (California Integrated Waste Management Board 2009).

California's Integrated Waste Management Act of 1989 (AB 939) requires that local jurisdictions within the state divert at least 50 percent of solid waste from landfills. To implement this goal, the City and the County mandate recycling for residential, commercial, industrial and government uses. In addition, both jurisdictions require reductions in solid waste generated by projects with construction and demolition areas of 40,000 sf or greater. Within the County, 90 percent of inert construction and demolition debris and 70 percent of all other construction and demolition debris is required to be diverted. The City requires a 50 percent diversion rate for all construction and demolition debris.

Natural Gas and Electricity

Gas and electric service within the project study area and vicinity is provided by Sempra Energy Company (Sempra). An electrical transmission line within a 120-foot-wide easement extends northwest from the border near the eastern edge of the project study area. All other electric utility lines in the EOMSP area are required to be placed underground in roadways. Within the City's OMCP area, however, 69 kV overhead electrical transmission lines cross the SR-11 alignment just east of the SR-905/SR-125/SR-11 Interchange. Sempra also has a 30-inch-diameter, 800-pounds per square inch (psi) underground natural gas pipeline within Enrico Fermi Drive and Via de la Amistad. This natural gas pipeline and associated easement extend through the southern portion of the proposed POE site. A 24-inch natural gas line owned by Calpine Corporation is located within a 20-foot easement that extends through the eastern portion of the proposed POE and CVEF sites. Electricity and natural gas utilities exist within several of the existing roadways that cross the proposed SR-11 R/W, including Harvest Road, Sanyo Avenue, Dornoch Court, Otay Mesa Road, and Piper Ranch Road.

Telecommunications

Telephone service in the area is provided by AT&T. Phone lines parallel Otay Mesa Road, Airway Road, Sanyo Avenue and Enrico Fermi Drive. Additionally, combination gas and television lines are located in Enrico Fermi Drive and Airway Road.

Emergency Services

Emergency services typically provided for public safety include police protection, fire protection, and emergency medical services. These services are summarized below.

Police Protection Services

Police protection services for the portion of the study area within the City of San Diego are provided by the San Diego Police Department - Southern Division office, located at 1120 27th Street (approximately 10 miles to the west near I-5). The Southern Division serves the southern portion of the City of San Diego, including the communities of Otay Mesa, Otay Mesa West, and San Ysidro.

The County Sheriff's Department provides generalized patrol and law enforcement investigative services in the unincorporated areas of the County, which encompass approximately 4,200 square miles. The nearest sheriff's station to the project study area is the Imperial Beach Station, located approximately 12 miles to the west. Most patrol functions in the study area vicinity are conducted by one of the two to three patrol units assigned to the Otay Mesa area. In urban unincorporated areas, such as East Otay Mesa, minimum response times identified in the County General Plan are 8 minutes for priority calls and 16 minutes for non-priority calls. Current response times in the East Otay Mesa area are less than eight minutes for first priority calls from the Imperial Beach Sheriff's Station (Parker 2006), which meets the County General Plan standard.

The demand for police services in the vicinity of the project study area is expected to increase as currently approved and proposed local development projects are implemented. The Public Facilities Element of the General Plan notes that there is a need to locate a Sheriff's substation in the East Otay Mesa area after the onset of development. Also, the Sheriff's Department has indicated the need for a new sheriff's station in the unincorporated South Bay area to improve local service levels (Parker 2006). A temporary sheriff's facility is currently operational at the intersection of Otay Mesa Road and Enrico Fermi Drive (Mays 2010). A permanent 6,000-square foot sheriff's station is planned to be co-located with a future fire station on two adjacent parcels at the future northwest corner of the terminus of Enrico Fermi Drive at

Lonestar Road. Both facilities would be constructed as determined necessary dependent upon the pace of development. Funding for the new substation would be accomplished through the establishment of a new sheriff-fire community facilities district (CFD) for developing properties within the East Otay Mesa area (County 2009a and Nissen 2012). This planned sheriff's station would provide the necessary services to satisfy the expected increase in demand due to anticipated cumulative development in the area.

Traffic enforcement services in the unincorporated portion of the County are provided by the CHP. The proposed project is located within the CHP's Border Division, which includes Imperial, Riverside, Orange and San Diego counties, and employs 900 uniformed officers and 380 non-uniformed personnel. CHP officers are responsible for investigating and disposing of car accidents, debris, and other impediments to the free flow of traffic on all roadways in their jurisdiction, including California state routes, U.S. highways, interstate highways, freeways in the state, and all public roads in unincorporated parts of a county. The CHP also operates a CVEF located along Enrico Fermi Drive in the study area vicinity, which inspects thousands of trucks yearly to confirm that they are mechanically ready for California's highways. Other law enforcement functions of the CHP include working to intercept and recover stolen vehicles driven across the border for sale in Mexico and other countries.

The Border Patrol, which is the mobile, uniformed, law enforcement arm of the federal DHS, provides additional law enforcement services in the project study area and vicinity. Its priority mission is preventing terrorists and terrorist weapons from entering the U.S. In addition, the Border Patrol maintains its traditional mission of preventing the entry and smuggling of illegal immigrants, narcotics, and other contraband into the U.S. between official ports of entry. Border Patrol agents and vehicles regularly patrol the project study area and vicinity.

Fire Protection Services

The City of San Diego Fire-Rescue Department Otay Mesa Station 43, located at the intersection of Otay Mesa and La Media roads, provides fire protection services to the City portion of the project study area.

Fire protection in the County portion of the study area is provided by the San Diego Rural Fire Protection District (SDRFPD), which provides fire-fighting and emergency response services to the entire East Otay Mesa Specific Plan area. The SDRFPD service area covers 720 square miles within the unincorporated area of the County. The SDRFPD, City of San Diego, City of Chula Vista, County of San Diego, and Donovan State Prison are signatories to the San Diego County Fire Mutual Aid Agreement, which identifies when and how the various fire departments and other entities will assist each other in emergencies. In addition to fire services provided by the SDRFPD, the California Department of Forestry responds to wildland fires in East Otay Mesa.

The SDRFPD currently provides fire and emergency services to East Otay Mesa through dispatch from the California Department of Forestry and Fire Protection (CAL FIRE) Emergency Communications Center (Monte Vista) in Rancho San Diego. There are currently two SDRFPD fire stations in the vicinity of the project study area: (1) Station 26, which is located at Donovan State Prison and serves the area through a cooperative assistance agreement; and (2) Station 22 (opened October 3, 2007), which is an interim fire station at the George F. Bailey Detention Facility and is staffed by CAL FIRE personnel as part of a cooperative agreement. Station 22 provides full-service fire suppression, rescue and emergency medical services. In 2009, by vote of the property owners in East Otay Mesa and by agreement with the County, the SDRFPD formed a CFD for the purposes of acquiring land on which to build both a fire station and a sheriff substation, funding the construction of a permanent fire station and a permanent sheriff substation, and funding the operations of the fire station (Nissen 2012). It is anticipated that Station 22 will operate until approximately 2016, at which time operations would move to the new sheriff/fire facility to be located at the Enrico Fermi Drive/Lonestar Road intersection (refer to Police Protection Services, above).

This planned fire station would provide the necessary services to satisfy the expected increase in demand due to anticipated cumulative development in the area.

Emergency Medical Services

San Diego Medical Services Enterprise (SDMSE), a public/private partnership formed as a limited liability company between the City of San Diego and Rural/Metro Ambulance Emergency, provides medical services in the project study area and vicinity. A paramedic responder is available at Station 43. The nearest Emergency Medical Technician is stationed at Fire Station 29, which is located near the I-805/I-5 junction, with this location also providing ambulance service. SDMSE has a mutual aid agreement with the County of San Diego, and responds to medical emergencies within applicable portions of both the City and County (Johnson 2007).

3.7.3 Environmental Consequences

Preferred Alternative and Draft EIR/EIS Build Alternatives

Preferred Alternative

Utilities

In general, the utilities analysis of the Two Interchange Alternative, below, would also apply to the Preferred Alternative. An additional utility relocation requirement has been included in the Preferred Alternative that would also apply to any of the Draft EIR/EIS build alternatives, if selected. A 69kV power line and associated power poles on the eastern edge of the SR-905/SR-125/SR-11 Interchange would require relocation. The power line would be re-routed, placed on new, taller steel poles to allow vertical clearance over the SR-11 and SR-125 connectors below, and relocated on new foundations in approximately 30-foot by 30-foot square permanent utility easements outside of the highway R/W. The four existing wooden poles that currently support the power lines would either be removed or abandoned in place. After relocation, these power lines would continue to function as before. Any disruptions would be short-term, and temporary connections to electricity services would be provided to customers during construction.

Emergency Services

The emergency services analysis of the Two Interchange Alternative, below, would apply equally to the Preferred Alternative.

Two Interchange Alternative

Utilities

For planned utilities, to the extent that development plans for currently vacant parcels have proposed utilities within the SR-11 corridor, these plans would require modification to avoid the highway corridor. The EOMSP Amendment (County of San Diego 2010a), however, requires the use of all land in the Specific Plan Area to conform with the applicable regulatory provisions in the Specific Plan, including the provision that the “north-south boundaries of adjacent land uses are intended to conform with the final alignment of future SR-11.” Similarly, to the extent that development plans for currently vacant parcels have proposed utilities within the adopted boundaries of the POE and/or CVEF sites, these plans would be replaced by future plans for the POE/CVEF facilities, with the POE identified as a planned use within the EOMSP. Therefore, planned utilities would need to be adjusted to accommodate the project before they would be constructed, and impacts would not occur.

For existing utilities, project implementation could affect buried water, sewer, electrical, telecommunication, natural gas lines, as well as overhead telecommunication and power lines within the project study area. These include utilities that extend east-west in the SR-11 and SR-905 corridors, as well as those that trend north-south, such as through the R/W of Alta Road, Enrico Fermi Drive, Sanyo Avenue, and Harvest Road (including the 69kV power line and poles located on the eastern edge of the SR-905/SR-125/SR-11 Interchange, as described above for the Preferred Alternative). The 30-inch diameter natural gas pipeline in Via de la Amistad extends through the southern portion of the proposed POE site. In addition, a 24-inch natural gas line that connects with the power generation facility on Alta Road extends through the eastern portion of the POE/CVEF sites.

Project implementation could impact these utilities through disruption of access, construction of conflicting utilities, or changes in topography that would expose the buried pipelines or place excessive fill on them. However, appropriate measures would be incorporated into the design to provide and restore access, and protect the pipelines in place or relocate them, in consultation with the utilities providers. Any disruptions would be short-term, and temporary connections to services would be provided to customers during construction. It is expected that these pipelines would be relocated within the proposed project R/W or within other developed public R/W. A conceptual design has been identified for the relocation of the 30 -inch high-pressure natural gas line that is currently located along the southern boundary of the POE site (refer to Figure 2-2, *Comparative Overview of the Draft EIR/EIS Build Alternatives*). The design shows the worst case scenario of relocating the natural gas line around the perimeter of the POE; it is possible a more direct alignment through the POE site may be identified in the future that is acceptable to GSA, CBP and the responsible utility company. The 30-inch pipeline would be surrounded by a 20-foot permanent easement with 15-foot temporary construction easements on either side. Figure 2-21, *Preferred Alternative Conceptual Layout of the Otay Mesa East POE and CVEF*, also shows the 24-inch natural gas line is currently planned to be relocated within a 20-foot wide permanent easement dedicated to the utility owner, Calpine Corporation. An additional 15-foot wide temporary construction easement would be required on either side of the permanent easement. On the western side, the temporary construction easement would overlap the temporary easement designated for the 30-inch pipeline described above. Specific relocation plans for all utilities within the project site would be coordinated with the responsible utility companies.

The SR-905 project (under construction) includes the relocation of underground water, gas, electrical, and telephone lines at Britannia Boulevard and La Media Road within the proposed project's footprint. The SR-905 project also includes relocation of an underground water line and encasement of an underground sewer line to the east of Britannia Boulevard. The proposed project would not impact these utilities as they are planned to be underground. In addition, coordination would occur with the utility companies prior to any construction in this area to ensure that these existing utilities would not be impacted by construction of the project.

The project would require new infrastructure. All necessary utilities would be extended from existing service locations to appropriate locations within the SR-11 and SR-905 corridors and the POE/CVEF sites. This extended utility infrastructure would also facilitate planned private development underway in the area. It is anticipated that new infrastructure would be placed within existing and planned roadway rights-of-way, and that no new footprints would be impacted. In addition, the use of solar thermal and photovoltaic systems and various passive energy conservation measures are being considered for the project; these are discussed in more detail in Section 3.18, *Energy*, of this Final EIR/EIS.

Wastewater generated by the proposed development would ultimately flow into the OMTS and be treated at the Point Loma WWTP.

Construction and demolition, as well as operation of the proposed project, would generate solid waste that would be disposed of in the Otay Landfill. Recycling receptacles would be located on the POE and

CVEF sites in order to reduce the amount of operational waste sent to the landfill. Most excess fill and construction and demolition debris would be reused or recycled. Removed concrete and asphalt materials would be reused as fill material on the project site. Vegetation, lumber, and metal debris would be hauled off site for composting or recycling, as appropriate. Some demolition debris would require special handling and disposal due to potential hazardous materials (see Section 3.15, *Hazardous Waste Materials*). Implementation of these reuse and recycling measures would minimize impacts to the remaining capacity at the Otay Landfill.

Emergency Services

Construction of the western portion of SR-11 could temporarily disrupt travel along existing roadways within the highway construction zone, potentially affecting emergency response times. Construction of the POE and CVEF would be in an area without existing roadways traveled by emergency vehicles, and therefore would not impact emergency services for the general public. Upon completion of SR-11, emergency response times on local public roadways would be improved by the provision of the SR-11 highway and reduction of congestion on local roads, which would represent a project benefit to local public safety conditions.

According to the SDRFPD, East Otay Mesa is currently served by the Station 26 at Donovan State Prison, and interim Station 22, located at the George F. Bailey Detention Facility for fire protection services. Police protection services for the portion of the study area within the City of San Diego are provided by the San Diego Police Department - Southern Division office, located approximately 10 miles to the west near I-5. The nearest County sheriff's station to the project study area is the Imperial Beach Station, located approximately 12 miles to the west. A temporary sheriff's facility is currently operational at the intersection of Otay Mesa Road and Enrico Fermi Drive (Mays 2010).

POE access options for emergency vehicles would depend on the status of the EOMSP circulation system at the time, as well as the final POE design. Under the Two Interchange Alternative, until the new permanent fire station is constructed, fire and rescue vehicles would be expected to access the new POE from Donovan State Prison and George F. Bailey Detention Facility via Alta Road, turning west on Otay Mesa Road, and then accessing SR-11 at the Enrico Fermi Drive Interchange and proceeding to the POE. It is also anticipated that, in the short term, sheriff vehicles dispatched from the temporary sheriff substation at Enrico Fermi Drive would approach the POE under the Two Interchange Alternative by accessing SR-11 at the Enrico Fermi Drive Interchange and proceeding to the POE.

Once the permanent fire station and permanent sheriff substation at the northwest corner of Enrico Fermi Drive and Lone Star Road have been constructed, emergency vehicles could access SR-11 via Enrico Fermi Drive and the Enrico Fermi Drive Interchange under the Two Interchange Alternative, or via Lone Star Road and the staff access road into the CVEF.

Finally, as described in Section 2.2.1, it should be noted that the eastern portion of proposed SR-11 has been designed with a 62-foot median width, to make it adaptable for potential safety and security needs, ensuring access to the new POE by emergency responders even when there is a queue of southbound vehicles waiting to cross, facilitating evacuation of the POE if necessary, and allowing southbound traffic to be turned around if the POE had to be closed for emergency security reasons. It should also be noted that this discussion is preliminary and the access options described would depend on the status of the EOMSP circulation system at the time, as well as the final POE design.

Between the proposed Otay Mesa East and Otay II POEs is a 150-foot wide strip of CBP land that stretches along the north side of the border, and is patrolled by the U.S. Border Patrol for immigration and border law enforcement purposes. These U.S. Border Patrol activities could be disrupted during

construction of the roadway connections across the CBP land to connect the proposed POE with the Otay II POE across the international border.

One Interchange Alternative

The One Interchange Alternative would cross over the same R/W as the Two Interchange Alternative, but the extent of disturbance would vary between the two alternatives. Without an interchange at Enrico Fermi Drive, the area of disturbance affecting the water and sewer lines would be smaller at this point and less of the existing utility lines in Enrico Fermi Drive would be impacted, while potentially more disturbance could occur at the proposed Alta Road Interchange in this location, with a corresponding greater effect upon the existing and planned water lines in this area.

Potential impacts to emergency services would be similar to those described for the Two Interchange Alternative. Under the One Interchange Alternative, until the new permanent fire station is constructed, fire and rescue vehicles would be expected to access the new POE from the nearby detention facilities via Alta Road, directly accessing SR-11 at the Alta Road Interchange, and proceeding to the POE. Under the One Interchange Alternative, it is also anticipated that, in the short term, sheriff vehicles dispatched from the temporary sheriff substation at Enrico Fermi Drive would take Otay Mesa Road east to Alta Road, access SR-11 at the Alta Road Interchange, and proceed to the POE. Under the One Interchange Alternative, once the permanent fire station and permanent sheriff substation at the northwest corner of Enrico Fermi Drive and Lone Star Road have been constructed, emergency vehicles could approach SR-11 and the POE via Lone Star Road, Alta Road and the Alta Road Interchange or via Lone Star Road and the staff access road into the CVEF.

No Interchange Alternative

The No Interchange Alternative would impact the same utility lines as the Two Interchange and One Interchange alternatives. The areas of disturbance at Enrico Fermi Drive and Alta Road would be somewhat less than the other build alternatives because the additional disturbance for interchanges would not be required.

Potential impacts to emergency services would be similar to those described for the Two Interchange Alternative. Under the No Interchange Alternative, until the new permanent fire station is constructed, fire and rescue vehicles would be expected to access the new POE from the nearby detention facilities via a relatively circuitous route, including Alta Road, traveling westward approximately two miles on Otay Mesa Road, and then accessing eastbound SR-905 at the La Media Interchange, connecting to SR-11 and proceeding to the POE. Alternate access via the staff access road into the CVEF would depend on the status of the EOMSP circulation plan network at the time. Under the No Interchange Alternative, it is also anticipated that, in the short term, sheriff vehicles dispatched from the temporary sheriff substation at Enrico Fermi Drive would take Enrico Fermi Drive south to Siempre Viva Road, and then Siempre Viva Road eastward to enter the POE via the staff access road into the CVEF. A less convenient alternative would be to take Otay Mesa Road westward to La Media Road, access SR-905 eastward at the La Media Road Interchange, connecting to SR-11 and eventually the POE. Under the No Interchange Alternative, the primary emergency approach to the POE from the future permanent fire station and permanent sheriff substation at the northwest corner of Enrico Fermi Drive and Lone Star Road would be via Lone Star Road and the staff access road into the CVEF.

Variations on the Draft EIR/EIS Build Alternatives

While all of these potential variations would entail some modifications to the extent of project-related disturbance and related impacts to utilities and services, the nature of such impacts (i.e., temporary

disruption in function or service) generally would remain unchanged. However, the 46-foot Median Variation would result in a wider R/W in the developed area east of Sanyo Avenue, with a greater potential to impact utilities within existing local roadways and on private property.

No Build Alternative

Under the No Build Alternative, the described development actions for the build alternatives and variations would not occur, and no associated impacts to utilities or emergency public services would result. In addition, the public safety benefit of reducing emergency response times by extending SR-11 would not occur.

3.7.4 Avoidance, Minimization, and/or Mitigation Measures

Build Alternatives and Variations Including the Preferred Alternative

Project design and construction would be required to minimize utility disruption in conformance with PUC Section 12808. In addition to standard notification and coordination requirements, the following specific measures would be required to maintain utilities and emergency response services:

- Caltrans and GSA would coordinate with the responsible utilities companies regarding any necessary relocation of the existing natural gas line that crosses the northeast corner of the POE/CVEF and the 30-inch diameter natural gas pipeline in the southern portion of the POE site
- Caltrans would coordinate with Calpeak (and other responsible utilities companies) regarding any necessary relocation of the existing 69kV power line and associated power poles located on the eastern edge of the SR-905/SR-125/SR-11 Interchange
- Interior and exterior storage areas for recyclables and green waste and adequate recycling containers would be provided within public areas
- Most construction and demolition waste (including but not limited to soil, vegetation, concrete, lumber, metal and cardboard) would be reused or recycled when feasible
- Disruption to emergency response service on local roads would be minimized through implementation of a construction traffic control plan to provide for passage of emergency vehicles. Details would be developed during final design
- Disruption of the U.S. Border Patrol activities would be minimized by cooperation with the agency to facilitate its activities while still realizing the project purpose and need

No Build Alternative

No impacts were identified for the No Build Alternative. No project action would occur under the No Build Alternative; therefore, no associated avoidance, minimization or mitigation measures would be required.

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3.8 TRAFFIC AND TRANSPORTATION/PEDESTRIAN AND BICYCLE FACILITIES

Two different sets of traffic forecasts have been prepared for the SR-11/Otay Mesa East POE project: those prepared for use in a financial feasibility study of the project (SANDAG/Caltrans, 2006a) and those prepared for use in this EIR/EIS.

The primary purpose of the financial feasibility study was to determine the potential for the project to be financed through the collection of tolls. The worst-case scenario from the toll road operators' point of view is traffic forecasts that are lower than expected, since this would indicate lower toll revenues than expected, too. For this reason, the traffic forecasts prepared for the financial feasibility study use the lowest possible traffic forecasts that could be expected as their "worst-case scenario". Although the study was conducted in 2006, it assumed a start of construction of 2012 and provided traffic and toll revenue forecasts through the year 2060. The roadway network in the study area has changed somewhat since 2006 (primarily with the completion of portions of SR-125 and SR-905), but future plans for roadway completion have changed very little for the time frame analyzed in the financial feasibility study (i.e. 2012 to 2060), so the traffic forecasts remain valid for use until more detailed analysis becomes available with publication of the Traffic and Revenue Study currently underway.

The primary purposes of the traffic forecasts prepared for the EIR/EIS were to determine the traffic and air quality impacts of the project and to provide information for the project design. For these purposes, the focus is on traffic forecasts that can be reasonably expected to occur under various scenarios of future development. For impact analysis, the objective is to neither overstate nor understate the degree of impact of the project. Similarly, for design purposes, it is desirable to avoid building a smaller facility or a larger facility than will actually be needed. In both cases, a slight overestimate of traffic would be considered conservative, and would be preferable to a traffic underestimate. The EIR/EIS traffic forecasts were prepared with this in mind, so that these estimates present a "worst case scenario" from the points of view of the impact analyst and project designer.

In summary, the two sets of traffic forecasts are not directly comparable, although each is appropriate for its specific purpose.

The traffic studies prepared in support of this Tier II EIR/EIS for the SR-11/Otay Mesa East POE are the *Tier II Traffic Technical Report*, and *Supplemental Letter Report Addendum to the Traffic Technical Report* (VRPA Technologies 2010a and 2011). These are summarized in this section of the Final EIR/EIS. The purpose of the 2010 Tier II project-level traffic analyses was to describe existing and future traffic conditions with and without the various alternatives and variations based on average daily traffic, AM peak hour, and PM peak hour traffic conditions. Pedestrian forecasts and effects on facilities for pedestrians, bicycles, and transit are also discussed. The *Supplemental Letter Report Addendum to the Traffic Technical Report* (Supplemental Traffic Report; VRPA Technologies 2011) provides an analysis of the Preferred Alternative and corrections to errors that were noted during the public review period.

3.8.1 Regulatory Setting

Caltrans, as assigned by FHWA, directs that full consideration should be given to the safe accommodation of pedestrians and bicyclists during the development of federal-aid highway projects (see 23 CFR 652). It further directs that the special needs of the elderly and the disabled must be considered in all federal-aid projects that include pedestrian facilities. When current or anticipated pedestrian and/or bicycle traffic presents a potential conflict with motor vehicle traffic, every effort must be made to minimize the detrimental effects on all highway users who share the facility.

In July 1999, the U.S. DOT issued an Accessibility Policy Statement pledging a fully accessible multimodal transportation system. Accessibility in federally assisted programs is governed by the U.S. DOT regulations (49 CFR part 27) implementing Section 504 of the Rehabilitation Act (29 USC 794). FHWA has enacted regulations for the implementation of the 1990 Americans with Disabilities Act (ADA), including a commitment to build transportation facilities that provide equal access for all persons. These regulations require application of the ADA requirements to federal-aid projects, including Transportation Enhancement Activities.

3.8.2 Affected Environment

Methodology

In the case of the traffic study prepared in support of this EIR/EIS (VRPA Technologies 2010a and 2011), existing conditions were analyzed for the year 2009. The traffic study area generally includes the proposed SR-11 corridor, as well as state highways and local roadways and intersections that are likely to experience a substantial increase or decrease in traffic, depending on whether SR-11 is built. The traffic study area includes all of SR-905; portions of I-5, I-805, and SR-125; and key local roadways east of Britannia Boulevard and south of the Otay River Valley (refer to Figure 1-1, *Regional Location Map*).

Roadway and intersection operational performance is typically described in terms of level of service (LOS). There are six levels of service, ranging from LOS A (where traffic flows freely with low volumes and high speeds) to LOS F (where traffic volumes exceed capacity and result in forced flow operations at low speeds). Each LOS represents a range of operating conditions and the driver's perception of those conditions; safety is not included in the measures that establish service levels. Table 3.8-1, *Level of Service Definitions*, presents general LOS definitions. Depending on local conditions, LOS C, D, and E are all used as the design target for various traffic engineering applications.

Table 3.8-1 LEVEL OF SERVICE DEFINITIONS	
LOS	Traffic Flow Description
A	Highest quality of service. Free traffic flow with few restrictions on maneuverability or speed. No delays.
B	Stable traffic flow. Speed becoming slightly restricted. Low restriction on maneuverability. No delays.
C	Stable traffic flow, but less freedom to select speed, change lanes or pass. Minimal delays.
D	Traffic flow becoming unstable. Speeds subject to sudden change. Passing is difficult. Minimal delays.
E	Unstable traffic flow. Speeds change quickly and maneuverability is low. Significant delays.
F	Heavily congested traffic. Demand exceeds capacity and speeds vary greatly. Considerable delays.

Source: www.dot.ca.gov/ser (Levels of Service for Two-Lane Highways)

Existing Traffic Volumes and Operations

The capacity of each existing freeway and roadway segment and intersection in the traffic study area, expressed in terms of LOS, was determined based on ADT and roadway classification. Where available, ADT conditions were determined through 24-hour counts conducted by VRPA Technologies in early 2009. In cases where roadway segment counts were unavailable, roadway segment ADT was estimated based on peak hour intersection turning movement counts that were recorded by VRPA Technologies in early 2009. Existing ADT values along state highways were taken from 2007 Caltrans state highway information prepared by the Caltrans Traffic and Vehicle Data Systems Unit and published on the Caltrans website. The most recent ADT values were from 2007; these were considered to provide a reasonable approximation of 2009 conditions without the recent variability due to gasoline price fluctuations and the state of the economy. Existing ADT values and LOS for roadway segments are shown on Figure 3.8-1, *2009 Existing ADT and LOS*. Roadway classifications were based on current characteristics, including number of lanes. For the Final EIR/EIS and Supplemental Traffic Report (VRPA Technologies 2011), the classification of Enrico Fermi Drive from SR-11 to Otay Mesa Road was updated to reflect an Enhanced Major Road cross section in accordance with comments from the County. The segment of Otay Mesa Road from La Media Road to Piper Ranch Road was updated to reflect five travelled lanes with a capacity in between a four-lane Major and a six-lane Major roadway. The total two-way ADT for 2009 distributed between the two existing POEs was as follows:

- San Ysidro: 114,200 passenger cars
- Otay Mesa: 33,500 passenger cars plus 5,300 trucks (38,800 total)

The existing capacities in the project area for freeway and roadway segments, as well as intersections, are provided in tabular form in Appendix H, *Traffic Data*. The freeway segment capacity analysis indicates that all of the freeway segments in the traffic study area are operating at LOS D or better. The roadway segment capacity analysis indicates that all roadway segments within the traffic study area currently operate at LOS D or better, with the exception of two segments operating at marginal LOS E, Otay Mesa Road from La Media Road to Piper Ranch Road, and Otay Mesa Road between SR-125 and Sanyo Avenue. The intersection capacity analysis indicates that all intersections currently operate at LOS D or better during AM/PM peak hours, with the exception of the following intersections:

- Otay Mesa Road and Sanyo Avenue (LOS E during PM peak hour)
- Otay Mesa Road and Alta Road (LOS E during AM peak hour)
- Airway Road and La Media Road (LOS E during PM peak hour)

In addition to LOS, freeway and roadway operational performance is also indicated by the volume to capacity ratio (V/C), which is a measure of traffic demand expressed as volume compared to traffic-carrying capacity. A lower V/C indicates adequate performance; an increased V/C indicates reduced performance and increased congestion. For intersections, operational performance is also indicated by delay, which is defined as the additional travel time experienced by a driver at an intersection as compared to a free flowing condition, expressed in seconds and averaged for all vehicles that enter the intersection in the peak hour. Delays greater than 80 seconds at an intersection correspond to LOS F in this analysis, as presented on the tables in Appendix H.

It should be noted that the traffic study area is undergoing a substantial amount of roadway construction activity, and conditions are expected to change as the construction progresses.

Pedestrian and Bicycle Facilities

While the existing San Ysidro POE is located within walking distance of downtown San Ysidro on the U.S. side and downtown Tijuana on the Mexican side, with a mixture of residential and commercial uses and a number of retail and tourist destinations on both sides of the border, the existing Otay Mesa POE is surrounded by strictly industrial and commercial uses to the north, and primarily industrial and residential land uses to the south. Thus, pedestrians and bicyclists crossing the border at the San Ysidro POE may have local destinations in mind or may plan to take advantage of transit options to travel further from the border, but currently, most pedestrians and bicyclists crossing at the existing Otay Mesa POE do not have walking access to an urban center, and must take transit options or be picked up by a private vehicle to reach their final destination. Similarly, the area around the proposed Otay Mesa East POE is currently undeveloped, but is planned for primarily industrial development. On the south side of the border in Mexico, the area near the proposed POE is developed with a mixture of the residential and commercial uses. The proposed Otay Mesa East POE has more similarities with the existing Otay Mesa POE than with the existing San Ysidro POE from the point of view of pedestrian and bicycle travel. Both Otay Mesa and Otay Mesa East are located in suburban areas with relatively modest transit service. Neither is located near a downtown or other urban center and there are far fewer nearby pedestrian destinations than are present at San Ysidro.

The area near the existing Otay Mesa POE has standard City street sections with sidewalks. Because of the primarily industrial nature of the area, walking is generally associated with trips between employment destinations and transit stops/parking areas or eating establishments. Sidewalks are present sporadically along Otay Mesa Road and Airway Road; some segments have no sidewalks, some have sidewalks present on one side, and some have sidewalks on both sides. Sidewalks are present along at least one side of the following roadway segments: Siempre Viva Road (from La Media Road to Enrico Fermi Drive), Britannia Boulevard (from Otay Mesa Road to Siempre Viva Road), La Media Road (north of Otay Mesa Road to Airway Road), Piper Ranch Road (north of Otay Mesa Road), Sanyo Avenue (from Otay Mesa Road to Airway Road), and Enrico Fermi Drive (south of Airway Road).

Several designated bicycle facilities are located in the project area. The San Diego Region Bike Map (SANDAG 2004) indicates that a bicycle route extends along Otay Mesa Road from Britannia Boulevard east to SR-905. A bicycle route is a shared right-of-way, designated by signs only, with bicycle traffic sharing the roadway with motor vehicles. Bike lanes, striped lanes for one-way bike travel identified by special signs, lane striping, and other pavement markings, are found along Otay Mesa Road, from SR-905 to Alta Road; along Interim SR-905 from Otay Mesa Road to the border; and along Siempre Viva Road, from La Media Road east to Enrico Fermi Drive. There are no existing bicycle facilities located within the proposed SR-11 corridors or POE sites.

The August 2007 amendment to the EOMSP contained an update of the Circulation Element's Bicycle Plan. Changes within the program area included deletion of the segment of the existing bike lane on Otay Mesa Road eastward from Piper Ranch Road to Enrico Fermi Drive due to safety concerns and other constraints; deletion of the planned bike lane on Michael Faraday Drive from Airway Road northward, because that segment of road was deleted from the circulation plan; addition of bike lanes on Enrico Fermi Drive and on Alta Road, both from Siempre Viva Road northward beyond the limits of the program area, to provide connectivity; and realignment of roadway network and bicycle lanes on Airway Road and Siempre Viva Road.

The EOMSP was most recently amended in September 2010. The 2010 amendment calls for a bicycle network to be on segments of the following roadways: Airway Road, Alta Road, David Ridge Drive, Enrico Fermi Drive, Lone Star Road, Otay Mesa Road, Piper Ranch Road, Siempre Viva Road, Sunroad

Boulevard, and Zinzer Road. The bicycle network is noted in the 2010 amendment to the EOMSP as being composed of Class II facilities (bike lanes).

Transit

An MTS bus route currently provides daily service to the Otay Mesa area near the existing Otay Mesa POE. Bus Routes 905 and 905A travel between the Iris Avenue Trolley Station in San Ysidro and the Otay Mesa POE. Bus Route 905A provides service between the terminal destinations at Route 905, with additional local service within Otay Mesa. Both bus routes operate at intervals that vary through the day from as little as every 12 minutes to as much as every hour from early morning to about 7:45 PM on weekdays and about once an hour from early morning to 7:00 PM on the weekends. The buses are equipped with bicycle racks.

The RTP identifies a BRT. The South Bay BRT will provide high-speed transit connections between downtown San Diego and the existing Otay Mesa POE along future I-805 managed lanes, as well as a dedicated transit way through eastern Chula Vista and along SR-125, terminating at the existing Otay Mesa POE. The September 2010 amendment to the EOMSP noted that the “east-west BRT line may follow Otay Mesa Road or Airway Road and potentially continue along this road into the Specific Plan Area to the proposed third border crossing. If this should occur, then a transit station at SR-125/Otay Mesa Road Interchange, a station at the border, and possibly one intervening station would be feasible.”

3.8.3 Environmental Consequences

Methodology

Traffic conditions in two future years were analyzed: opening year (2015) and horizon year (2035). Traffic forecasts were based on the SANDAG Series 11 regional transportation model, with land use forecasts updated to include pending and approved land development projects in the County and City of San Diego areas of Otay Mesa that were not included in Series 11.

Both the No Build and build alternatives assume a number of roadway improvements would be in place by the analysis time periods of 2015 and 2035. The adopted future roadway network was the 2030 Revenue Constrained Plan Scenario from the 2030 RTP (SANDAG 2007a). The 2030 RTP was the applicable plan at the time the traffic analysis was conducted; nevertheless, the project area roadway network contained in the 2050 RTP is consistent with the 2030 Revenue Constrained RTP network assumed in the project traffic study. Under 2015 conditions, the roadway network in the project study area for each of the proposed alternatives is assumed to include the following key features:

- Construction of SR-905 as a six-lane freeway from I-805 to the international border¹
- Construction of SR-125 as a four-lane freeway from Otay Mesa Road to the SR-905/SR-125 Interchange
- Construction of a roadway connection from the SR-905/SR-125 Interchange to Enrico Fermi Drive
- Addition of two HOV lanes on I-805 between East Palomar Street and SR-94
- Construction of a large number of local roadways in the Otay Mesa area

¹ A seventh lane has been added to the SR-11 project design between SR-125 and Britannia Boulevard, based on the modeling results. The need for this additional lane was not envisioned at the time of modeling. The model assumption of six lanes for the entire length of SR-905 continues to be acceptable as a “worst case” scenario.

The 2035 roadway network for each alternative would include the following additional improvements:

- Addition of an interchange at SR-125/Lone Star Road that is not included in the 2015 scenario
- Widening of SR-125 to eight lanes between Telegraph Canyon Road and SR-54
- Widening of I-805 between East Palomar Street and SR-94 to a managed lane facility with 12 total lanes

Future County and City roadways were assumed to be built if they were included in the SANDAG 2030 RTP Revenue Constrained scenario. The roadway width and lane configuration were based on Community Plan Circulation Elements. The roadway improvements assumed in the No Build and build alternatives are the same, except for the SR-11 project itself.

Since the regional transportation model horizon year is 2030 and the horizon year for this study is 2035, a growth factor of one percent per year was used to convert from 2030 traffic forecasts to 2035 traffic forecasts. This growth factor was based on engineering judgment and is a typical growth factor used in the San Diego region to convert from 2030 to 2035 traffic forecasts. In addition, adjustments to the SANDAG regional transportation model were made to predict the distribution of traffic among the various San Diego - Mexico border crossings and to account for the effect of no tolls on SR-11 for the No Toll Variation. Details on these adjustments for the various traffic forecasts are in the *Tier II Traffic Technical Report* (VRPA Technologies 2011).

The future total ADT distributed among the three POEs and applied in the analysis are presented in Table 3.8-2, *Summary of Two-way Average Daily Traffic Forecasts at International Border Crossings*. Existing ADT volumes also are presented for comparison. Since SR-11 and the Otay Mesa East POE are assumed to be in place in the SANDAG regional transportation model, border crossing traffic forecasts at the three POEs in the Otay Mesa area (San Ysidro, Otay Mesa, and proposed Otay Mesa East) are available for this scenario. For the No Build Alternative, it was necessary to determine the average daily traffic crossing the border at only the San Ysidro and Otay Mesa border crossings (no POE at Otay Mesa East). For the future No Build condition, the total level of traffic was assumed to be the same as for the build condition but redistributed between the two existing POEs. The assumption of the same demand for the build versus No Build alternatives, which is consistent with other regional transportation analyses, allows direct comparisons regarding how well alternative scenarios of transportation improvements would serve a given level of traffic demand. These comparisons are useful in certain transportation planning and policy considerations. In addition, the assumption of the same border crossing travel demand creates a worst-case assumption regarding transportation improvements needed near the existing POEs for the No Build Alternative, and helps in analyzing the need for the project.

For the Draft EIR/EIS, traffic conditions in 2015 and 2035 were evaluated for the No Build Alternative and the following project build alternatives and variations (a total of 14 scenarios):

- Two Interchange Alternative (with toll): Full interchange at Enrico Fermi Drive and half interchange at Siempre Viva Road (access to and from the west only).
- Siempre Viva Road Full Interchange Variation: This design variation, which would apply only to the Two Interchange Alternative, assumes the construction of a full interchange at SR-11/Siempre Viva Road rather than the half-interchange described under the baseline Two Interchange Alternative. This variation would add separate loop-style ramps for commercial-only and passenger-only traffic between Siempre Viva Road and the POE, as well as a direct roadway link for commercial-only traffic to access Siempre Viva Road from the CVEF.

- One Interchange Alternative (with toll): Interchange at Alta Road.
- No Interchange Alternative (with toll): No local access interchanges between the SR-905/SR-125/SR-11 Interchange and the international border.
- No Toll Variation: This variation applied to each of the above build alternatives would not change the roadway layout or lane geometry, but assumes that SR-11 is built as a freeway.
- SR-125 Connector Variation: This design variation applied to each of the above build alternatives assumes the construction of a connector ramp from southbound SR-125 to eastbound SR-11, in addition to the basic SR-905/SR-125/SR-11 Interchange layout.
- SR-905/SR-125/SR-11 Full Interchange Variation: This design variation could apply to any of the build alternatives assumes the construction of a full interchange at SR-905/SR-125/ SR-11 that would provide direct connectors for all traffic movements. This would add three connector ramps to the basic SR-905/SR-125/SR-11 Interchange layout: southbound SR-125 to eastbound SR-11, northbound SR-905 to eastbound SR-11, and westbound SR-11 to southbound SR-905.

Table 3.8-2
SUMMARY OF TWO-WAY AVERAGE DAILY TRAFFIC FORECASTS AT INTERNATIONAL BORDER CROSSINGS

Analysis Year	SR-11 Scenario	San Ysidro POE			Otay Mesa POE			Otay Mesa East POE		
		Autos	Trucks	Total	Autos	Trucks	Total	Autos	Trucks	Total
2009	Existing	114,200	0	114,200	33,500	5,300	38,800	0	0	0
2015	No Build	130,700	0	130,700	41,700	7,700	49,400	0	0	0
2015	Build / Toll	112,100	0	112,100	37,200	5,000	42,200	23,100	2,700	25,800
2015	Build / No Toll	109,300	0	109,300	36,400	4,600	41,000	26,700	3,100	29,800
2035	No Build	186,200	0	186,200	73,400	12,000	85,400	0	0	0
2035	Build / Toll	151,600	0	151,600	67,300	7,200	74,400	40,800	4,800	45,600
2035	Build / No Toll	145,800	0	145,800	66,600	6,400	73,000	47,200	5,600	52,800

Source: VRPA Technologies 2011

For the Final EIR/EIS, a Preferred Alternative was designated. From a traffic analysis point of view, the Preferred Alternative is the same as the Two Interchange Alternative with the SR-125 Connector Variation, except that it allows for northbound commercial vehicles to cross the international border and proceed directly to Siempre Viva Road without entering SR-11.

Similar to the existing conditions analysis, the capacity of each freeway and roadway segment and roadway intersection in the traffic study area is expressed in terms of LOS, and was determined based on

ADT and roadway classification. Roadway segment classifications for 2015 and 2035 are shown in the Traffic Technical Report.

For the purposes of this analysis, resulting roadway and intersection LOS were evaluated as follows:

1. LOS A, B, and C were considered an indication that there would be no traffic operational problems and that most or all drivers would be satisfied with the resulting traffic conditions. LOS C or better conditions constitute the ideal level of service for new roadway facilities (including the SR-11 facility).
2. LOS D was considered to provide a reasonable level of traffic operations for peak hour conditions that would be considered satisfactory for most drivers. A roadway design concept that could achieve LOS D would be recommended where substantial cost increases or other considerations would make it difficult to achieve LOS C.
3. LOS E and F were considered to indicate potential traffic congestion and were therefore considered to be undesirable. LOS E was considered an indication that the roadway or intersection under study would operate at or near capacity with levels of delay that would be considered unsatisfactory to most drivers. LOS F was considered an indication that the roadway or intersection would be over capacity. Under LOS F conditions, drivers would be expected to experience substantial delays and some drivers would be expected to choose other routes or other time periods to make their trips. Although LOS E and F conditions are considered to be undesirable, they are often an indication of a potential problem and a need for further consideration. This is particularly true for LOS E or F conditions that are predicted for the future, where plans for roadway facilities and/or land development could be modified to resolve a predicted LOS E or F condition.

In the case of City and County roadway facilities, levels of service are provided for both roadway segments and intersections. In some cases discrepancies could exist between the level of service reported for intersections along a roadway segment and the level of service for the roadway segment itself. In these cases, the intersection levels of service were considered to be more detailed, superseding the roadway segment levels of service. The roadway segment levels of service were provided in these cases for informational purposes, since they are a common planning tool used by local agencies.

The area through which SR-11 is located is expected to experience a substantial amount of land development in the future. San Diego County has prepared the EOMSP for development of the County portion of Otay Mesa and the City of San Diego is in the process of updating its community plan for the City portion of Otay Mesa. Some land use forecasts prepared by others have envisioned a more rapid development of land than is forecast in the 2030 SANDAG model that forms the basis of the Tier II traffic study. However, the land use forecasts used in the Tier II traffic study are considered to represent the current regional consensus.

For comparison purposes, Figure 3.8-2, *2030 Traffic Forecasts from the EOMSP* shows 2030 traffic forecasts from the traffic analysis prepared in support of the County's EOMSP EIR, assuming full build out of the specific plan area (Darnell 2007). Some of the traffic forecasts from the EOMSP analysis are higher than the corresponding 2035 traffic forecasts provided in the SR-11/Otay Mesa East POE traffic analysis. This is an indication that there is a continuing need to monitor traffic forecasts and roadway improvements in the project study area.

The impact conclusions for the build alternatives, including the Preferred Alternative, are based on a comparison with the No Build Alternative conditions. As such, each traffic condition is first analyzed for

the No Build Alternative, followed by analysis of the Preferred Alternative, and Draft EIR/EIS build alternatives and variations. Results for the following analyses are summarized below: SR-11, freeway segments, roadway segments, and intersections.

SR-11 Performance

The total projected traffic carried on SR-11 and the utilization of the ramps were evaluated for each of the alternatives and variations in 2015 and 2035. The results are summarized in Table 3.8-3, *ADT on SR-11 Main Line between SR-905/SR-125 and Enrico Fermi Drive and Interchanges in 2015 and 2035*. Figures 3.8-3 through 3.8-6 show traffic volumes and LOS on the SR-11 mainline for the Preferred Alternative and three Draft EIR/EIS build alternatives in 2015 and 2035.

No Build Alternative

SR-11 would not be constructed under the No Build Alternative. As such, the capacity of the freeway is not analyzed for this alternative.

Preferred Alternative in 2015 and 2035

For the Preferred Alternative in 2015, the Enrico Fermi Drive Interchange would be well-utilized and the Siempre Viva half-interchange would be under-utilized, as discussed below for the Two Interchange Alternative and variations. All locations would operate above LOS C (Figure 3.8-3, *2015 and 2035 SR-11 Volumes and LOS – Preferred Alternative*). In 2035, the Enrico Fermi Drive Interchange would be heavily utilized and the Siempre Viva half-interchange would be well utilized. The SR-11 ADT forecast for the Preferred Alternative would be 66,600 in 2035, the same as for the Two Interchange with Toll plus SR-125 Connector Variation, and in the middle of the range forecasted for the various design concepts as discussed for the Two Interchange Alternative and variations. For the Preferred Alternative, most locations would operate at LOS D or above. However, the SR-125 off-ramp would operate at LOS E during the PM peak hour, similar to other alternatives as discussed below.

Build Alternatives and Variations in 2015 and 2035

Two Interchange Alternative and Variations

For the Two Interchange Alternative and variations in 2015, the Enrico Fermi Drive Interchange would be well-utilized; however, for the alternatives where the SR-11 ramps at the Siempre Viva half-interchange are forecast to carry only 1,500 to 2,000 vehicles per day, this half-interchange would be under-utilized at opening day unless local development proceeds at higher than anticipated rates. In 2035, the Enrico Fermi Drive Interchange would be heavily utilized, and the Siempre Viva Drive half-interchange would be well-utilized. ADT forecasts on SR-11 are expected to range from approximately 62,600 to 79,800 vehicles per day in 2035, depending on design concept, tolling strategy, and location along SR-11 (Figure 3.8-4, *2015 and 2035 SR-11 Volumes and LOS – Two Interchange Alternative*). In most cases, a four-lane facility would be adequate to handle this level of traffic; however, there are a few variations where a six-lane facility and/or auxiliary lanes would be desirable, based on conservative estimates of traffic operations.

Table 3.8-3
ADT ON SR-11 MAIN LINE BETWEEN SR-905/SR-125 AND ENRICO FERMI DRIVE AND
INTERCHANGES IN 2015 AND 2035

Alternative	Year	ADT Main Line	ADT/ Degree Utilized* at Enrico Fermi Interchange	ADT/ Degree Utilized* at Siempre Viva Interchange	ADT/ Degree Utilized* at Alta Interchange
Preferred Alternative	2015	27,800	13,600 / well	2,000 / under	N/A
	2035	66,600	47,800 / heavily	14,400 / well	N/A
Two Interchange With Toll	2015	27,300	12,100 / well	1,500 / under	N/A
	2035	62,600	44,800 / heavily	13,400 / well	N/A
Two Interchange With Toll Plus Siempre Viva Road Full Interchange Variation	2015	23,400	9,800 / well	6,400 / well	N/A
	2035	42,800	34,000 / well	29,200 / well	N/A
One Interchange With Toll	2015	25,800	N/A	N/A	16,000 / well
	2035	48,600	N/A	N/A	47,000 / heavily
No Interchange With Toll	2015	25,800	N/A	N/A	N/A
	2035	45,600	N/A	N/A	N/A
Two Interchange (No Toll)	2015	31,600	13,200 / well	1,800 / under	N/A
	2035	74,800	42,800 / heavily	22,000 / heavily	N/A
One Interchange (No Toll)	2015	29,800	N/A	N/A	20,000 / well
	2035	61,400	N/A	N/A	57,000 / heavily
No Interchange (No Toll)	2015	29,800	N/A	N/A	N/A
	2035	52,800	N/A	N/A	N/A
Two Interchange With Toll Plus SR-125 Connector	2015	27,800	13,600 / well	2,000 / under	N/A
	2035	66,600	47,800 / heavily	14,400 / well	N/A
One Interchange With Toll Plus SR-125 Connector	2015	25,800	N/A	N/A	18,000 / well
	2035	52,600	N/A	N/A	51,000 / heavily
No Interchange With Toll Plus SR-125 Connector	2015	25,800	N/A	N/A	N/A
	2035	45,600	N/A	N/A	N/A
Two Interchange With Toll Plus SR-905/SR- 125/SR-11 Full Interchange Variation	2015	32,800	12,800 / well	3,600 / well	N/A
	2035	79,800	47,400 / heavily	25,200 / heavily	N/A
One Interchange With Toll Plus SR-905/SR- 125/SR-11 Full Interchange Variation	2015	27,400	N/A	N/A	10,600 / well
	2035	65,400	N/A	N/A	60,600 / heavily
No Interchange With Toll Plus SR-905/SR-125/SR- 11 Full Interchange Variation	2015	25,800	N/A	N/A	N/A
	2035	45,600	N/A	N/A	N/A

Source: VRPA Technologies 2011, 2010a, 2010b

* Notes:

Under = SR-11 access under-utilized; ADT of 1,000 or less per ramp

Well = SR-11 access well utilized; ADT greater than 1,000 and less than 10,000 per ramp

Heavily = SR-11 access heavily utilized; ADT greater than 10,000 per ramp

For the Two Interchange Alternative and no toll and SR-125 connector variations, the off-ramp from westbound SR-11 to northbound SR-125 would operate at LOS E during the PM peak hour. For the Two Interchange Alternative with the SR-905/SR-125/SR-11 Full-Interchange Variation, the off-ramp from westbound SR-11 to northbound SR-125 as well as the Enrico Fermi Drive on-ramp to westbound SR-11 would operate at LOS E during the AM peak hour and LOS F during the PM peak hour.

One Interchange Alternative and Variations

For the One Interchange Alternative and variations, the Alta Road Interchange would be well utilized in 2015 and 2035. For all variations, the total ADT expected on SR-11 in 2015 could easily be accommodated by a four-lane freeway/tollway (Figure 3.8-5, *2015 and 2035 SR-11 Volumes and LOS – One Interchange Alternative*). ADT forecasts on SR-11 are expected to range from approximately 48,600 to 65,400 vehicles per day in 2035, depending on design concept, tolling strategy, and location along SR-11. In most cases, a four-lane facility would be adequate to handle this level of traffic; however, a six-lane facility and/or auxiliary lanes would be desirable for the One Interchange Alternative with the no toll and SR-905/SR-125/SR-11 Full Interchange variations, for which a conservative estimate of traffic operations indicates the off-ramp from westbound SR-11 to northbound SR-125 would operate at LOS E during the PM peak hour.

No Interchange Alternative and Variations

The No Interchange Alternative would not include any of the interchanges evaluated in Table 3.8-3. This alternative is forecast to carry similar ADT volumes to those for the One Interchange Alternative in 2015 (Figure 3.8-6, *2015 and 2035 Volumes and LOS – No Interchange Alternative*). By 2035, it would carry the least ADT among the various alternatives for each variation. Analysis of the SR-905/SR-125/SR-11 Interchange under this alternative indicates that the PM peak hour for the SR-125 connector ramp from westbound SR-11 would be LOS E, based on a conservative estimate of expected traffic operations.

Freeway Segment Capacity

The ADT, V/C ratio, and LOS for freeway segments for the No Build Alternative, Preferred Alternative, and three Draft EIR/EIS build (toll) alternatives in 2015 and 2035 are summarized in tabular form in Appendix H. In the analysis that follows, the No Build scenario is presented first, as the baseline for comparison with the Preferred Alternative and each of the build alternatives/variations. The level of service results for freeway segments are based on traffic forecasts from the SANDAG regional transportation model compared to planning estimates of freeway segment capacity. These results provide a general indication of level of service for study area roadways under various alternatives.

No Build Alternative

In 2015, all freeway segments would operate at LOS D or better for the No Build Alternative, with the exception of I-805 north of SR-905, which would operate at LOS F.

In 2035, the following seven freeway segments would operate at LOS E or F for the No Build Alternative:

- SR-905 from I-5 to I-805 (LOS F)
- SR-905 from I-805 to Otay Mesa Road (LOS F)
- SR-905 from Otay Mesa Road to Britannia Boulevard (LOS F)
- SR-905 from Britannia Boulevard to La Media Road (LOS F)
- I-5 North of SR-905 (LOS F)
- I-805 North of SR-905 (LOS F)
- I-805 from SR-905 to I-5 (LOS E)

The SR-905 segments were modeled with six lanes, and the I-5 and I-805 segments were modeled with eight lanes.

Preferred Alternative and Draft EIR/EIS Build Alternatives and Variations in 2015

In 2015, all freeway segments would operate at LOS D or better for the Preferred Alternative and any of the other build alternatives, except that I-805 north of SR-905 would operate at LOS F for all cases. For this freeway segment, the V/C ratio is slightly lower for the build alternatives, indicating the project would exhibit a slightly improved performance compared to the No Build condition. This result is the same for all the build alternatives with any of the variations.

Preferred Alternative and Draft EIR/EIS Build Alternatives and Variations in 2035,

Table 3.8-4, *Comparison of 2035 No Build Alternative Freeway Segments*, compares the 2035 freeway segments of the No Build Alternative to the Preferred Alternative and the Draft EIR/EIS build alternatives. The six freeway segments that would operate at LOS F for the No Build Alternative also would operate at LOS F for the Preferred Alternative and other build alternatives. The V/C ratios for the build alternatives generally would be the same or slightly increased compared to the No Build Alternative, indicating the freeway segments would exhibit a slightly reduced performance with the build alternatives. The Preferred Alternative would result in the same or improved performance over the No Build Alternative for SR-905 from I-805 to Otay Mesa Road, I-5, and I-805. Similar to Draft EIR/EIS build alternatives discussed below, the Preferred Alternative would exhibit reduced performance compared to the No Build Alternative for SR-125 north of Lone Star Road and three segments of SR-905.

In 2035, the V/C ratio would be slightly lower for I-805 with the Draft EIR/EIS build alternatives, and the I-805 segment from SR-905 to I-5 would be LOS D compared to LOS E for the No Build Alternative, indicating this freeway segment would result in improved performance with the build alternatives. One freeway segment, SR-125 north of Lone Star Road, would operate at LOS E in 2035 compared to LOS D for the No Build Alternative, indicating the freeway segment would exhibit reduced performance with the build alternatives. This segment was modeled with four lanes. Three of the four segments of SR-905 would exhibit slightly reduced performance for the Draft EIR/EIS build alternatives compared to the No Build Alternative. In summary, for 2035, freeway performance would be slightly reduced with the build alternatives for segments of SR-125 and SR-905, would be similar for segments of I-5, and would be improved for segments of I-805. This result is the same for all the Draft EIR/EIS build alternatives with all of the variations.

Roadway Segment Capacity

The ADT, V/C ratio, and LOS for roadway segments for the No Build Alternative, Preferred Alternative, and three Draft EIR/EIS build alternatives in 2015 and 2035 are summarized in the tables in Appendix H. Existing values also are presented for comparison purposes. Figures 3.8-7 through 3.8-16 show ADT and LOS on the local roadways for the No Build, Preferred Alternative, and three Draft EIR/EIS build alternatives in 2015 and 2035.

Table 3.8-4
COMPARISON OF 2035 NO BUILD TO BUILD ALTERNATIVE FREEWAY SEGMENTS^{1, 2, 3}

Freeway Segment	No Build	Preferred Alternative	Two Interchange Alternative	One Interchange Alternative	No Interchange Alternative
SR-125, North of Lone Star Road	LOS D	LOS E	LOS E	LOS E	LOS E
SR-905, I-5 to I-805	LOS F	LOS F Increased V/C	LOS F Increased V/C	LOS F Increased V/C	LOS F Increased V/C
SR-905, I-805 to Otay Mesa Road	LOS F	LOS F Lower V/C	LOS F Increased V/C	LOS F Lower V/C	LOS F Same V/C
SR-905, Otay Mesa Road to Britannia Boulevard	LOS F	LOS F Increased V/C	LOS F Increased V/C	LOS F Increased V/C	LOS F Increased V/C
SR-905, Britannia Boulevard to La Media Road	LOS F	LOS F Increased V/C	LOS F Increased V/C	LOS F Increased V/C	LOS F Increased V/C
I-5, North of SR-905	LOS F	LOS F Same V/C	LOS F Increased V/C	LOS F Increased V/C	LOS F Same V/C
I-805, North of SR-905	LOS F	LOS F Lower V/C	LOS F Lower V/C	LOS F Lower V/C	LOS F Lower V/C
I-805, SR-905 to I-5	LOS E	LOS D	LOS D	LOS D	LOS D

Source: VRPA Technologies 2011, 2010a, 2010b

Note:

¹ Only roadway segments that would operate at level of service (LOS) E or F in one or more alternatives are presented.

² Increased V/C indicates reduced performance; lower V/C indicates improved performance

³ Results shown in **BOLD** print indicate a build alternative would result in reduced performance compared to the No Build Alternative.

No Build Alternative

In 2015, all roadway segments would operate at LOS A for the No Build Alternative (Figure 3.8-7, *2015 ADT and LOS – No Build Alternative*). Otay Mesa Road between SR-125 and Sanyo Avenue (approximated by the segment from SR-125 to Sunroad Boulevard), is operating at LOS E under existing conditions; it would operate at LOS A in 2015 for the No Build Alternative. In 2035, the following roadway segments would operate at LOS E or F for the No Build Alternative (Figure 3.8-8, *2035 ADT and LOS – No Build Alternative*):

- Lone Star Road from SR-125 to Sunroad Boulevard (LOS F)
- Siempre Viva Road from SR-905 to Paseo De Las Americas (LOS F)

Preferred Alternative and Draft EIR/EIS Build Alternatives and Variations in 2015

In 2015, all roadway segments would operate at LOS B or better for the Preferred Alternative and all Draft EIR/EIS build alternatives and variations. Similar to the No Build Alternative, Otay Mesa Road between SR-125 and Sanyo Avenue, which is operating at LOS E under existing conditions, would operate at LOS A in 2015 for all build alternatives and variations (Figures 3.8-9, *2015 ADT and LOS – Preferred Alternative*; 3.8-10, *2015 ADT and LOS – Two Interchange Alternative*, 3.8-11, *2015 ADT and LOS – One Interchange Alternative*, and 3.8-12, *2015 ADT and LOS – No Interchange Alternative*).

Preferred Alternative and Draft EIR/EIS Build Alternatives and Variations in 2035

Otay Mesa Road between SR-125 and Sanyo Avenue (approximated by the segment from SR-125 to Sunroad Boulevard), which is operating at LOS E under existing conditions, would be improved to LOS A or B in 2035 for the Preferred Alternative and all of the Draft EIR/EIS build alternatives and variations.

Table 3.8-5, *Comparison of 2035 No Build to Build Alternative Roadway Segments*, compares the 2035 roadway segments of the alternatives for the two roadway segments that would operate at LOS E or F for the No Build Alternative in 2035, as well as two roadway segments that would operate at LOS D or better for the No Build Alternative but would result in LOS E or F for one or more of the build alternatives.

Table 3.8-5 COMPARISON OF 2035 NO BUILD TO BUILD ALTERNATIVE ROADWAY SEGMENTS^{1, 2, 3}					
Road Segment	No Build	Preferred Alternative	Two Interchange Alternative	One Interchange Alternative	No Interchange Alternative
Lone Star Road from SR-125 to Sunroad Boulevard	LOS F	LOS E	LOS E	LOS E	LOS F Increased V/C
Lone Star Road from Sunroad Boulevard to Enrico Fermi Drive	LOS D	LOS D	LOS C	LOS D	LOS F
Siempre Viva Road from SR-905 to Paseo De Las Americas	LOS F	LOS D	LOS D	LOS F Lower V/C	LOS F Increased V/C
Alta Road from Otay Mesa Road to Airway Road	LOS A	LOS A	LOS A	LOS E	LOS A

Source: VRPA Technologies 2011, 2010a, 2010b

Notes:

¹ Only roadway segments that would operate at LOS E or F in one or more alternatives are presented.

² Increased V/C indicates reduced performance; lower V/C indicates improved performance.

³ Results shown in **BOLD** print indicate a build alternative would experience reduced performance compared to the No Build Alternative.

Preferred Alternative

The Preferred Alternative would exhibit improved performance compared to the No Build Alternative for two of the four roadway segments and the same LOS as the No Build Alternative for the other two roadway segments, as depicted in Figure 3.8-13, *2035 ADT and LOS – Preferred Alternative*.

Two Interchange Alternative and Variations

The Two Interchange Alternative would exhibit improved performance compared to the No Build Alternative for three of the four roadway segments, and the same LOS as the No Build Alternative for one roadway segment, as depicted in Figure 3.8-14, *2035 ADT and LOS – Two Interchange Alternative*. The variations would operate at LOS C or better, or result in the same roadway segment performance as the Two Interchange Alternative, with the following exceptions:

- Siempre Viva Road Full Interchange Variation: Enrico Fermi Drive from Otay Mesa Road to SR-905 would be improved to LOS B (versus LOS D for the Two Interchange Alternative)
- No Toll Variation: Siempre Viva Road from SR-905 to Paseo De Las Americas would be improved to LOS C (versus LOS D for the Two Interchange Alternative)
- No Toll Variation: Enrico Fermi Drive from Lone Star Road to Otay Mesa Road would exhibit reduced performance at LOS E (versus LOS B for the Two Interchange Alternative)
- SR-125 Connector Variation: Lone Star Road from Sunroad Boulevard to Enrico Fermi Drive would be the same as the No Build Alternative at LOS D (versus LOS C for the Two Interchange Alternative)
- SR-905/SR-125/SR-11 Full Interchange Variation: Lone Star Road from Sunroad Boulevard to Enrico Fermi Drive would be the same as the No Build Alternative at LOS D (versus LOS C for the Two Interchange Alternative)
- SR-905/SR-125/SR-11 Full Interchange Variation: Siempre Viva Road from SR-905 to Paseo de las Americas would be improved to LOS C (versus LOS D for the Two Interchange Alternative)

One Interchange Alternative and Variations

The One Interchange Alternative would perform better than the No Build Alternative for two of the four roadway segments, the same LOS as the No Build Alternative for one roadway segment, and reduced performance compared to the No Build Alternative for one roadway segment (Alta Road from Otay Mesa Road to Airway Road), as depicted in Figure 3.8-15, *2035 ADT and LOS – One Interchange Alternative*. The variations would operate at LOS C or better, or demonstrate the same roadway segment performance as the One Interchange Alternative, with the following exceptions:

- No Toll Variation: Siempre Viva Road from SR-905 to Paseo De Las Americas would be improved to LOS D (versus LOS F for the One Interchange Alternative)
- SR-125 Connector Variation: Siempre Viva Road from SR-905 to Paseo De Las Americas would be improved to LOS E (versus LOS F for the One Interchange Alternative)
- SR-905/SR-125/SR-11 Full Interchange Variation: Lone Star Road from SR-125 to Sunroad Boulevard would be improved to LOS D (versus LOS E for the One Interchange Alternative)
- SR-905/SR-125/SR-11 Full Interchange Variation: Siempre Viva Road from SR-905 to Paseo De Las Americas would be improved to LOS D (versus LOS F for the One Interchange Alternative)
- SR-905/SR-125/SR-11 Full Interchange Variation: Alta Road from Otay Mesa Road to Airway Road would exhibit reduced performance at LOS F (versus LOS E for the One Interchange Alternative)

No Interchange Alternative and Variations

The No Interchange Alternative would not improve performance for any of the four roadway segments, compared to the No Build Alternative. It would result in the same LOS for three of the four roadway segments and reduced performance compared to the No Build Alternative for one roadway segment (Lone Star Road from Sunroad Boulevard to Enrico Fermi Drive), as depicted in Figure 3.8-16, *2035 ADT and LOS – No Interchange Alternative*.

Roadway segment operational performance would operate at LOS C or better, or exhibit the same roadway segment performance as the No Interchange Alternative, with the following exceptions:

- SR-905/SR-125/SR-11 Full Interchange Variation: Otay Mesa Road from La Media Road to SR-125 would exhibit reduced performance at LOS D (versus LOS A for the No Interchange Alternative)
- SR-125 Connector Variation: Otay Mesa Road from La Media Road to SR-125 would exhibit reduced performance at LOS D (versus LOS A for the No Interchange Alternative)
- SR-125 Connector Variation: Siempre Viva Road from Paseo De Las Americas to Enrico Fermi Drive would exhibit reduced performance at LOS F (versus LOS C for the No Interchange Alternative)

Intersection Capacity

The AM and PM peak average delay and LOS for intersections for the No Build Alternative, Preferred Alternative and three Draft EIR/EIS build alternatives (with toll) in 2015 and 2035 are summarized in the tables in Appendix H. Existing values also are presented for comparison purposes.

No Build Alternative

In 2015, all intersections would operate at LOS C or better for the No Build Alternative. In 2035, only the intersection of Otay Mesa Road and La Media Road would operate at LOS E or F.

Preferred Alternative and Draft EIR/EIS Build Alternatives and Variations in 2015

In 2015, all intersections would operate at LOS C or better for the Preferred Alternative and all Draft EIR/EIS build alternatives and variations, with one exception: for the SR-125 Connector Variation of the No Interchange Alternative, the intersection of Siempre Viva Road and Paseo De Las Americas would operate at LOS D during the PM peak hour versus LOS C for the No Interchange Alternative without this variation. The following intersections that are operating at LOS E or F in existing conditions would be expected to improve to LOS D or better in 2015:

- Otay Mesa Road and Sanyo Avenue
- Otay Mesa Road and Alta Road
- Airway Road and La Media Road
- Siempre Viva Road and Paseo De Las Americas

In general terms, anticipated roadway improvements in the traffic study area are expected to meet or exceed the demand created by the forecast traffic increases, resulting in improved levels of service between 2009 and 2015.

Preferred Alternative and Draft EIR/EIS Build Alternatives and Variations in 2035

Table 3.8-6, *Comparison on 2035 No Build to Build Alternative Intersections*, compares the 2035 intersections of the alternatives for the intersection of Otay Mesa Road and La Media Road (projected to operate at LOS F under the No Build Alternative), as well as four intersections that would operate at LOS D or better for the No Build Alternative but would be LOS E or F for one or more of the build alternatives.

Table 3.8-6 COMPARISON OF 2035 NO BUILD TO BUILD ALTERNATIVE INTERSECTIONS^{1, 2}					
Intersection	No Build Alternative AM/PM Peak LOS	Preferred Alternative AM/PM Peak LOS	Two Interchange Alternative AM/PM Peak LOS	One Interchange Alternative AM/PM Peak LOS	No Interchange Alternative AM/PM Peak LOS
Otay Mesa Road and La Media Road	LOS F/F	LOS E/F	LOS E/F	LOS E/F	LOS F/F
SR-905 WB Off-ramp and La Media Road	LOS B/B	LOS B/B	LOS B/B	LOS B/B	LOS C/E
Siempre Viva Road and SR-905 NB Ramps	LOS D/D	LOS C/C	LOS C/C	LOS C/D	LOS E/E
Siempre Viva Road and Paseo De Las Americas	LOS D/D	LOS D/D	LOS D/D	LOS D/D	LOS E/F
Siempre Viva Road and Enrico Fermi Drive	LOS C/C	LOS C/C	LOS C/C	LOS C/C	LOS D/E

Source: VRPA Technologies 2011, 2010a, 2010b

Notes:

¹ Only intersections that would operate at LOS E or F in one or more alternatives are presented.

² Results shown in **BOLD** print indicate a build alternative would experience reduced performance compared to the No Build Alternative.

NB = northbound; WB = westbound

Preferred Alternative

As shown in Table 3.8-6, the Preferred Alternative would exhibit improved performance compared to the No Build Alternative at two intersections and the same LOS at three of the five intersections.

Two Interchange Alternative and Variations

As shown in Table 3.8-6, the Two Interchange Alternative would exhibit improved performance compared to the No Build Alternative at two intersections and the same LOS at three of the five intersections.

In 2035, the variations would generally result in intersection operational performance at LOS D or better, or the same LOS for the AM/PM peak hours as those of the Two Interchange Alternative, with the following exceptions:

- Siempre Viva Road Full Interchange Variation: Otay Mesa Road/La Media Road would exhibit improved performance at LOS E/E (versus LOS E/F for the Two Interchange Alternative)
- SR-905/SR-125/SR-11 Full Interchange Variation: Otay Mesa Road/La Media Road would exhibit reduced performance at LOS F/F (versus LOS E/F for the Two Interchange Alternative)
- SR-905/SR-125/SR-11 Full Interchange Variation: SR-905 westbound Off-ramp/La Media Road would exhibit reduced performance at LOS C/E (versus LOS B/B for the Two Interchange Alternative)

One Interchange Alternative and Variations

The One Interchange Alternative would result in better performance than the No Build Alternative at two intersections and the same LOS at three intersections; performance would not be reduced to LOS E or F at any of the five intersections.

In 2035, the variations would generally result in intersection operational performance at LOS D or better, or the same LOS as those of the One Interchange Alternative, with the following exceptions:

- No Toll Variation: Otay Mesa/Alta Road would perform at LOS E/E (versus LOS D/D for the One Interchange Alternative)
- SR-905/SR-125/SR-11 Full Interchange Variation: Otay Mesa Road/La Media Road would be improved to LOS E/E (versus LOS E/F for the One Interchange Alternative)
- SR-905/SR-125/SR-11 Full Interchange Variation: Otay Mesa Road/Alta Road would perform at LOS E/D (versus D/D for the One Interchange Alternative)

No Interchange Alternative and Variations

The No Interchange Alternative would not improve performance compared to the No Build Alternative at any of the intersections. It would result in the same LOS at one intersection, and would exhibit reduced performance compared to the No Build Alternative at four of the five intersections.

In 2035, the variations would generally result in intersection operational performance at LOS D or better, or the same as those of the No Interchange Alternative, with the following exceptions:

- No Toll Variation: Otay Mesa Road and Piper Ranch Road would perform at LOS D/E (versus LOS C/D for the No Interchange Alternative)
- SR-125 Connector Variation: Siempre Viva Road/SR-905 northbound Ramps would perform at LOS F in the PM peak hour (versus LOS E in the PM peak hour for the No Interchange Alternative)

Summary of Adverse Operational Performance Traffic Effects

Freeway Segments

Implementation of any of the build alternatives would have an adverse effect in 2035 on the segment of SR-125 north of Lone Star Road, with projected performance being reduced from LOS D for the No Build Alternative to LOS E for the Preferred Alternative and all other build alternatives. An adverse

effect is defined as reducing performance to LOS E or F compared with the No Build Alternative scenario, or increasing the V/C ratio where the No Build Alternative operational performance would be LOS E or F.

Implementation of the following toll alternatives would have an adverse effect in 2035 on the freeway segments listed that would operate at LOS F with the No Build Alternative and a build alternative, but would have an increased V/C ratio (indicating reduced performance) with a build alternative:

- Preferred Alternative: SR-905 from I-5 to I-805, and SR-905 from Otay Mesa Road to La Media Road
- Two Interchange Alternative: SR-905 from I-5 to La Media Road (all four segments); I-5 from north of SR-905
- One Interchange Alternative: SR-905 from I-5 to I-805 and Otay Mesa Road to La Media Road; I-5 from north of SR-905
- No Interchange Alternative: SR-905 from I-5 to I-805 and Otay Mesa Road to La Media Road

None of the variations would improve these results.

Roadway Segments

Implementation of the following toll alternatives would have an adverse effect in 2035 on the roadway segments listed. An adverse effect is defined as reducing performance to LOS E or F compared with the No Build Alternative scenario, or increasing the V/C ratio where the No Build Alternative operational performance would be LOS E or F:

- Preferred Alternative: No adverse effects
- Two Interchange Alternative: No adverse effects
- One Interchange Alternative: Alta Road from Otay Mesa Road to Airway Road
- No Interchange Alternative: Lone Star Road from SR-125 to Enrico Fermi Drive, and Siempre Viva Road from SR-905 to Paseo De Las Americas

None of the variations for the alternatives that would have adverse effects would improve any of the results.

Intersections

Implementation of the following toll alternatives would have an adverse effect in 2035 on the intersections listed. An adverse effect is defined as reducing performance to LOS E or F, compared with the No Build Alternative:

- Preferred Alternative: No adverse effects
- Two Interchange Alternative: No adverse effects
- One Interchange Alternative: No adverse effects
- No Interchange Alternative: SR-905 westbound off-ramp and La Media Road, Siempre Viva Road and SR-905 northbound ramps, Siempre Viva Road and Paseo De Las Americas, Siempre Viva Road and Enrico Fermi Drive

All three of the No Interchange variations would improve the SR-905 and La Media Road intersection PM peak to LOS D or better. The No Toll/No Interchange variation would also improve Siempre Viva

Road and SR-905 northbound ramps. The SR-905/SR-125/SR-11 Full Interchange/No Interchange variation would also improve that intersection and the Siempre Viva and Enrico Fermi Drive intersection.

The traffic queuing analysis performed as part of the project traffic study (VRPA Technologies 2010c) indicates, however, that the Siempre Viva Road Full Interchange Variation would have the potential for queue storage and weaving problems at the following locations:

- At the northbound commercial exit from the CVEF to Siempre Viva Road, there would be minimal distance between the CVEF processing area and the beginning of the exit. Any disruptions in exiting traffic would tend to cause queues of trucks that would back up into the CVEF/POE facility.
- The left-turn lane serving both passenger cars and commercial vehicles from northbound (eastbound) Siempre Viva to eastbound SR-11 would consist of a single left-turn lane, but would be expected to carry 389 vehicles per hour in the AM peak hour and 528 vehicles per hour in the PM peak hour. Any left-turn movement carrying more than 300 vehicles per hour would normally require two lanes. It is considered infeasible, however, to provide a dual left-turn lane at this location, because the southbound on-ramp diverges a short distance from the intersection to separate passenger car and commercial vehicle ramps. If a dual left-turn lane were provided, it would be difficult or impossible to position vehicles in the correct lanes as they diverge, leading to safety concerns.
- The commercial vehicle ramp from Siempre Viva Road to eastbound SR-11 joins the eastbound SR-11 commercial vehicle lanes just north of the toll plaza for southbound commercial vehicles. This would create a short weaving section in which commercial vehicles entering the mainline on the on-ramp on the right side may wish to use toll lanes on the left side of the toll plaza, leading to safety concerns. This same problem would apply to the passenger vehicle ramp from Siempre Viva Road to eastbound SR-11.

In summary, the lack of queue storage capacity would create conflicts as vehicles merge to access the POE, or need to cross multiple lanes in a short distance as they leave the POE. The requirement of separating the commercial and non-commercial vehicles complicates interchange geometry. In this case, the interchange would not be able to accommodate anticipated demand within design constraints, which include the close proximity of a local street intersection at Siempre Viva Road and Airway Road.

With the exception of the first point, the above issues for the Siempre Viva Road Full Interchange Variation would not apply to the Siempre Viva Road Interchange design for the Preferred Alternative. The Preferred Alternative would still have minimal distance between the CVEF processing area and the beginning of the exit to Siempre Viva Road. Any disruptions in exit traffic would have the potential to cause queues of trucks that would back up into the CVEF/POE facility.

Benefits to Local Motorists, Residences and Businesses

The proposed SR-11 and POE are planned facilities in the EOMSP, OMCP, RTP, RTIP and other local plans, and would be implemented by any of the project build alternatives. The EOMSP and currently proposed cumulative development projects in the East Otay Mesa area have assumed implementation of the Two Interchange Alternative in planning documents and proposed designs. While any of the build alternatives would increase accessibility to East Otay Mesa and to Mexico, the Two Interchange Alternative with the Siempre Viva Road Full Interchange Variation would provide the greatest accessibility between SR-11 and local businesses in the East Otay Mesa area. The Preferred Alternative would provide a similar level of accessibility for commercial vehicles, although slightly less accessibility

for passenger vehicles. There are very few existing or planned residents in this area who would benefit from the greater accessibility afforded by the Full Interchange Variation. The One Interchange Alternative would provide the next best accessibility for businesses, followed by the No Interchange Alternative, and finally the No Build Alternative, with the least benefit to accessibility. Accessibility between SR-11, SR-905 and SR-125 would be enhanced with the SR-125 Connector and SR-905/SR-125/SR-11 Full Interchange Variations. The Preferred Alternative incorporates the SR-125 Connector Variation, and therefore, would provide enhanced regional highway connectivity, compared to the baseline build alternatives. Under the No Toll Variation of the Draft EIR/EIS build alternatives, accessibility would be further enhanced by the absence of toll charges, increasing the feasibility of travel on SR-11 and through the Otay Mesa East POE for a greater number of travelers.

The proposed build alternatives with toll, including the Preferred Alternative, would offer commercial and passenger vehicles the opportunity to cross the border with a shorter wait time (planned to not exceed 30 minutes). Under the No Toll Variation with any of the build alternatives, longer wait times would be expected. Nevertheless, the wait times at the San Ysidro, Otay Mesa and East Otay Mesa POEs would all be shorter under any of the build alternatives than they would be at the San Ysidro and Otay Mesa POEs under the No Build Alternative, based on the increased border crossing capacity for the region that would be associated with any of the build alternatives.

Pedestrian and Bicycle Impacts

Although the existing Otay Mesa POE has fewer nearby pedestrian destinations than the San Ysidro POE, it still experiences a significant amount of pedestrian activity and this is also expected to be the case at the proposed Otay Mesa East POE. Pedestrians and bicyclists are expected to use the POE for the following reasons:

- For some cross-border pedestrian/bicycle trips, the Otay Mesa East POE will be the most convenient crossing location.
- The Otay Mesa East POE will be used as a transfer point for some transit trips. A traveler making a cross-border trip will be able to take transit service to the POE, walk across the border, and transfer to a different transit service on the other side of the border.
- The Otay Mesa East POE will also be used as a drop-off point. Some travelers will choose to be dropped off on one side of the border, walk through the POE, and then arrange for a ride from the POE to a destination on the other side of the border.

Using the guideline described above and assuming that northbound and southbound crossings are equal in a given day, the following 2005 base-year two-way daily pedestrian crossings were calculated. Bicyclists are typically included in estimates of pedestrian crossings at the POEs in the area.

- San Ysidro: 58,393 total crossings per day (based on an average day in the peak month of August 2005)
- Otay Mesa: 11,128 total crossings per day (based on an average day in the peak month of April 2005)

Forecasts of future pedestrian border crossings require some indicator of the level of activity that would occur in 2035 compared to the base year of 2005. The most reliable indicator of activity at the border crossings is considered to be the SANDAG regional transportation model. The model forecasts vehicle traffic at San Ysidro, Otay Mesa, and Otay Mesa East. If it is assumed that vehicle activity and pedestrian

activity are related, the model's traffic forecasts can be used in determining future pedestrian forecasts. In this case, the 2030 traffic forecasts from the model have been increased by one percent per year to estimate 2035 conditions, the same growth factor that was used for traffic.

Table 3.8-7, *Daily Two-way Border Crossing Vehicle and Pedestrian Forecasts*, shows the pedestrian forecasts for all three POEs. A total of 14,100 daily two-way pedestrian crossings are forecast at Otay Mesa East using the following methodology:

- For the base year of 2005, the ratio of pedestrian crossings per vehicle crossing was calculated. San Ysidro has a ratio of 0.55 pedestrian crossing per vehicle crossing, while Otay Mesa has a ratio of 0.31 pedestrian crossing per vehicle crossing. This reflects development patterns and transportation facilities at San Ysidro that are more conducive to pedestrian activity.
- For the future year of 2035, San Ysidro and Otay Mesa were assumed to have the same ratio of pedestrian crossings to vehicle crossings. Based on the transportation model's forecast of vehicle crossings, pedestrian crossings can be directly calculated.
- For Otay Mesa East, it was assumed that the ratio of pedestrian crossings to vehicle crossings would be 0.31, the same as the current ratio at the Otay Mesa POE. It is not known exactly how the area surrounding the proposed Otay Mesa East POE would be developed. However, it is likely that development patterns would be similar to the Otay Mesa POE area and less pedestrian-oriented than the San Ysidro POE, which has the San Diego trolley station on the U.S. side of the border and downtown Tijuana and tourist destinations nearby in Mexico.

It should be noted that the pedestrian forecast of 14,100 pedestrians per day means that in 2035, the proposed Otay Mesa East POE would be accommodating 27 percent more pedestrians than are being accommodated by the existing Otay Mesa POE today.

Table 3.8-7						
DAILY TWO-WAY BORDER CROSSING VEHICLE AND PEDESTRIAN FORECASTS						
Port of Entry	2005			2035		
	Pedestrians	Vehicles	Pedestrian Crossings / Vehicle Crossing	Pedestrians	Vehicles	Pedestrian Crossings / Vehicle Crossing
San Ysidro	58,400 ¹	106,000 ²	0.55	83,400 ³	151,600 ⁴	0.55
Otay Mesa	11,100 ¹	36,000 ²	0.31	23,100 ³	74,400 ⁴	0.31
Otay Mesa East	N/A	N/A	N/A	14,100	45,600 ⁴	0.31

¹ U.S. Bureau of Transportation Statistics Data (www.transtats.bts.gov/bordercrossing.apxsx). Based on average day in the peak month.

² Caltrans Website (www.caltrans.gov/hq/traffops/saferesr/trafdata/2005all.htm).

³ Calculated based on ratio of pedestrian crossings to vehicle crossings.

⁴ See Table 3.8-2.

Pedestrians crossing the international border at the Otay Mesa East POE would arrive and depart from the POE via pedestrian, transit, taxi, or vehicle pick-up/drop-off modes. Siempre Viva Road is expected to be the closest location to the new POE on the local street system. The PDS for the POE has conceptually

identified a site for future pick-up and drop-off of pedestrian border crossers that is within the POE development footprint, but separated physically and operationally from the Otay Mesa East POE. This area for mass transit and privately owned vehicle passenger loading would provide pedestrians and bus travelers' potential connections to Otay Mesa and San Diego.

It is expected that ADA-compliant pedestrian walkways would be provided between the POE and Siempre Viva Road, including the identified pedestrian drop off/loading location, and that ADA-compliant sidewalks would be provided along Siempre Viva Road to convey pedestrians between the POE and local destinations. Conceptual pedestrian pathways and directions of flow, as contemplated within the PDS, are shown on Figure 2-21, *Preferred Alternative Conceptual Layout of the Otay Mesa East POE and CVEF*. The SR-11 portion of the project is also expected to provide or maintain typical pedestrian facilities at interchanges and local roadway crossings, including ADA-compliant sidewalks and pedestrian signals at the ramp terminal intersections. The typical pedestrian facilities are expected to accommodate pedestrian demand.

The *Tier II Traffic Technical Report* (VRPA Technologies 2011) assumed that bicycles would be treated as pedestrians for the purpose of the border crossing process and that bicycle facilities would be provided on local roadways per current San Diego County standards. Estimates of bicycle crossings are therefore included within the forecasts for pedestrian crossings in Table 3.8-7.

There are no existing bicycle facilities located within the proposed SR-11 corridors or POE sites that may be impacted by implementation of the proposed project. Bicycle lanes planned for Enrico Fermi Drive and Alta Road from Siempre Viva Road northward beyond the limits of the program area would provide connectivity between the proposed POE and the existing bicycle facilities in the region, as the local roadways in East Otay Mesa are constructed. Cyclists would be permitted to cross the border at the proposed POE.

The forecast of approximately 14,100 pedestrians/bicycles crossing at the new POE per day means that over five million pedestrians/bicycles may eventually use the Otay Mesa East POE each year, many of whom may also want to cross SR-11. No pedestrian or bicycle access is planned along SR-11; bicycles and pedestrians would be directed to local road facilities. Special care would be taken during the design process to ensure that pedestrians and cyclists would be able to cross SR-11 on these local road facilities. Overcrossings and undercrossings within the project limits would be built to Caltrans standards for bike lanes, and would accommodate sidewalks. The Preferred Alternative provides the maximum feasible local access for pedestrians and cyclists, as well as cars and trucks, but pedestrian/bicycle access to East Otay Mesa will be dependent on the development of local roads by the County as part of the EOMSP Circulation Plan. The POE would be designed to accommodate anticipated future levels of pedestrian and bicycle crossings and to not preclude construction of local bicycle and pedestrian facilities. Until local road facilities are constructed to serve the new Otay Mesa East POE, existing Otay Mesa and San Ysidro POEs would continue to be available to serve pedestrians and bicyclists.

Transit

The SR-11 portion of the project is expected to provide for transit operations along the freeway mainline and interchanges in mixed-flow traffic. No separate transit facilities are expected to be needed because the SR-11 facilities are expected to operate at desirable levels of service with minimal delays.

Future transit service at the Otay Mesa East POE is expected to consist of the following components:

- **South Bay BRT Line:** This BRT line is currently planned to have its southern terminus at the Otay Mesa border crossing. An extension of this service to the Otay Mesa East POE is under consideration.
- **MTS Bus Route Service:** In addition to the South Bay BRT line, it is logical to expect that MTS bus service will be extended to the Otay Mesa East POE, similar to the service that is provided at the Otay Mesa POE currently. This could be an extension of service from SR-905 or from a different route to serve the East Otay Mesa area, including the proposed POE.

Transit buses carrying passengers to the Otay Mesa East POE would need a location to stop for loading and unloading of passengers. The minimum requirement for this service would be a bus stop along Siempre Viva Road, which would be the closest public roadway to the POE. A more ideal facility for passenger loading and unloading would be an off-street transit center. The ideal location for a transit center would be the area south of Siempre Viva Road and west of the Otay Mesa East POE. Because Siempre Viva Road is aligned from southwest to northeast in the vicinity of the Otay Mesa East POE, a location in this area would provide for the minimum possible walking distance between the POE and the loading/unloading area for buses.

Parking

No parking would be permitted along SR-11. The proposed POE and CVEF would provide on-site parking for employees and official visitors to these facilities. No public parking for border crossers is anticipated within the POE or CVEF, for security reasons. Those wishing to cross the border without a vehicle would be encouraged to use transit, taxis, bicycles, walking and other alternate means of transport to approach the POE. It is anticipated that any remaining demand for public parking would be met by private vendors within surrounding private properties.

Construction Impacts

The proposed project construction for SR-11, associated connections to SR-905, the POE and CVEF is projected to begin in 2013 and be completed by 2015. If the SR-125 Connector or SR-905/SR-125/SR-11 Full Interchange Variation is selected, it is expected that these would be constructed at a later time. The cut and fill quantities for the project would not balance under any of the project alternatives.

Under the Preferred Alternative, grading for proposed SR-11 would entail approximately 1,150,000 cubic yards (cy) of cut and 1,150,000 cy of fill for the highway main line plus interchanges and under/overcrossings; an additional 1,575,000 cy of fill would be needed for the Preferred Alternative connectors between SR-11, SR-905 and SR-125, including the southbound SR-125 to eastbound SR-11 flyover. Total imported fill required for the Preferred Alternative would be 2,725,000 cy (209,615 truckloads).

Fill import requirements for the Draft EIR/EIS build alternatives are estimated at 1,620,000 cy (124,615 truckloads) for the Two Interchange Alternative, 1,590,000 cy (122,307 truckloads) for the One Interchange Alternative, and 1,490,000 (114,615 truckloads) for the No Interchange Alternative. These values do not include the additional import that would be required for the SR-125 Connector Variation, that is included in the above calculations for the Preferred Alternative.

Grading for the POE under any of the build alternatives, including the Preferred Alternative, is currently estimated to result in approximately 186,000 cy of cut and 2,849,000 cy of fill. Grading for the CVEF is tentatively estimated to result in approximately 287,000 cy of cut and 85,000 cy of fill. Together, the POE and CVEF would be expected to require a net of approximately 2,460,000 cy of imported fill.

During heavy periods of hauling imported fill material to the project site, it is estimated that up to 300 truck trips per day would be generated. Additional traffic generated by project construction would include construction employees traveling to and from the site each day, hauling of demolition debris off site in the early stages of clearing/grading for the project, and delivery of construction materials to the site periodically. Project construction-related trips could result in increased congestion of local streets and freeways in the project area. According to the TMP (AECOM/Caltrans 2011) for the project, temporary full or partial closures of SR-905, Sanyo Avenue, Enrico Fermi Drive, and Alta Road are anticipated to be necessary. Likely detour routes at various times during construction would include Otay Mesa Road, Airway Road, La Media Road and Sanyo Avenue. These road closures and detours could cause motorist delays on existing roads during construction (AECOM/Caltrans 2011).

No Build Alternative

Under the No Build Alternative, the described development actions for the three build alternatives and variations would not occur, and no associated impacts to traffic would result. The No Build Alternative could contribute to continued long wait times to cross the border, with associated traffic congestion. These impacts would be expected to increase over time without implementation of the proposed project.

3.8.4 Avoidance, Minimization, and/or Mitigation Measures

Measures to Address Construction Impacts

As discussed in Chapter 2.0, Project Alternatives, a TMP was prepared for the project to minimize motorist delays on existing roads during construction (AECOM/Caltrans 2011). The following list includes measures from the TMP and other appropriate measures for consideration to be added to the TMP:

- A Public Awareness Campaign to educate the public about potential construction plans and scheduling
- Motorist Information Strategies, such as signs in English and Spanish and information on the CHIN, a 24-hour information hotline and website, to divert traffic volume from the construction site
- Incident Management, including a COZEEP that would station CHP Officers and Traffic Management Team units at construction sites to facilitate safer construction and traffic conditions and respond quickly to incidents
- Construction Strategies of selectively closing freeway main lanes, ramps, and connectors without creating substantial delays to motorists and providing temporary lane shifts to facilitate construction of freeway-to-freeway connectors
- Contingency Plans for instances in which the timely opening of lanes is deemed unachievable
- Alternate Route Strategies that would temporarily divert traffic to allow construction activities while maintaining sufficient traffic flow along SR-905 (if open) and reasonable access to businesses
- During heavy periods of hauling of dirt, construction materials, and debris, utilize designated truck routes with flagmen and/or temporary signalization/signage as appropriate, and coordinate with the responsible local jurisdiction(s) regarding construction-related trucking arrangements
- Consider scheduling heavy trucking periods during non-peak traffic hours, if necessary to avoid further impacting freeway/roadway segments and intersections that tend to operate at undesirable levels of service during peak hours
- All parking associated with project construction would be contained within the project limits of disturbance or another secured location that would not conflict with existing public parking

The project construction contractor would be required to maintain at least one access to all existing businesses during project construction, and keep adjacent businesses informed of periods of interruption of any usual access route/driveway. The TMP for the project proposes that the main detour throughout the two-year construction duration would utilize Sanyo Avenue. Several minor detours would exist for several nights when falsework is constructed above Sanyo Avenue, SR-905, and the SR-905 off-ramp to La Media Road. Reasonable access to businesses along the main and minor detours should be maintained throughout the duration of construction. It is expected that the main detour would be operational throughout the duration of construction and no modifications would be necessary to any streets.

Measures to Address Operations Impacts

In 2035, certain freeway segments, roadway segments, and intersections were identified as having reduced performance at LOS E or F with the project implemented compared to the No Build Alternative, or having an increased V/C ratio with the project implemented when operational performance for the No Build Alternative, would be at LOS F. No feasible measures, that are within the control or responsibility of Caltrans, have been identified to avoid, minimize or mitigate these project impacts. In order to avoid, minimize or mitigate the adverse traffic effects that are projected to occur within the Otay Mesa area by 2035, it would be necessary to amend current circulation element roadway classifications and RTIP plans for regional transportation facilities. Based on the traffic forecasts for the proposed project, the below-listed amendments to local and regional circulation plans may be needed by 2035 to ensure that freeway/roadway/intersection operations in the project area would be no worse than with the No Build Alternative. Conditions in the project area should be monitored following project implementation to ensure that such modifications would be needed.

Freeway Operation Improvement Measures - Preferred Alternative and Draft EIR/EIS Build Alternatives

The future operational performance of SR-125 north of Lone Star Road could be improved by increasing the number of lanes along this segment of SR-125 (applicable to all build alternatives).

Traffic volumes along SR-125 and SR-905 could be reduced by increasing the tolls for SR-11 and SR-125 during peak hours (applicable to all build alternatives).

The future operational performance of SR-905 could be improved by increasing the planned number of lanes for the affected segments of SR-905 from 6 lanes to 8 or 10 lanes (applicable to all build alternatives).

The future operational performance of I-5 north of SR-905 could be improved by increasing the number of lanes along this segment of I-5 (applicable to the Two Interchange and One Interchange alternatives, but not needed for the Preferred Alternative or No Interchange Alternative).

Future traffic volumes in the Otay Mesa region may be reduced through implementation of strong transit, bikeway and pedestrian systems, as well as implementation of TSM/TDM measures throughout the region to encourage the use of alternate modes of transit, promote carpools and vanpools, and reduce vehicle travel on freeways during peak hours.

Roadway Segments/Intersection Operation Improvement Measures

Preferred Alternative

Implementation of the Preferred Alternative would not adversely affect roadway segments or intersections. Therefore, no operation improvement measures would be needed for this alternative.

Two Interchange Alternative

Implementation of the Two Interchange Alternative would not adversely affect roadway segments or intersections. Therefore, no operation improvement measures would be needed for this alternative.

One Interchange Alternative

Implementation of the One Interchange Alternative would adversely affect the roadway segment of Alta Road from Otay Mesa Road to Airway Road in 2035. Avoidance of this impact would require that Alta Road be implemented as a six-lane facility instead of a four-lane facility as currently reflected in the local circulation element. The One Interchange Alternative would not adversely affect any intersections. Therefore, intersection operation improvement measures would not be needed for this alternative.

No Interchange Alternative

Implementation of the No Interchange Alternative would adversely affect the roadway segments of Lone Star Road from SR-125 to Enrico Fermi Drive, and Siempre Viva Road from SR-905 to Paseo De Las Americas in 2035, as well as the following four intersections:

- SR-905 westbound off-ramp and La Media Road
- Siempre Viva Road and SR-905 northbound ramps
- Siempre Viva Road and Paseo De Las Americas
- Siempre Viva Road and Enrico Fermi Drive

To improve the future operational performance of the Lone Star Road segments would require that this roadway be built out as a six-lane facility instead of a four-lane facility, as currently reflected in the local circulation element. To avoid the impacts to Siempre Viva Road and the three adversely affected intersections with this road, it would be necessary to widen this roadway and the intersections to eight lanes, providing additional through-lane capacity, which would exceed the current circulation element designation for this roadway. To improve the future operational performance of the SR-905 westbound off-ramp and La Media Road intersection it would be necessary to amend the circulation element to designate La Media Road as an eight-lane facility at this location instead of a six-lane facility, to increase the number of through lanes available for the dominant north-south movement.

Conclusion

The proposed project would implement SR-11 and the Otay Mesa East POE, which have been reflected in the EOMSP for many years and should be considered in future transportation planning efforts for the study area in coordination with local entities. The above analysis provides guidance as to the types of modifications that would be necessary to achieve acceptable LOS in the region in 2035, such that operations would be no worse than under the No Build Alternative. The analysis also demonstrates that feasible measures exist to provide this condition, although they are beyond the control or responsibility of Caltrans and are thus not proposed as part of the project.

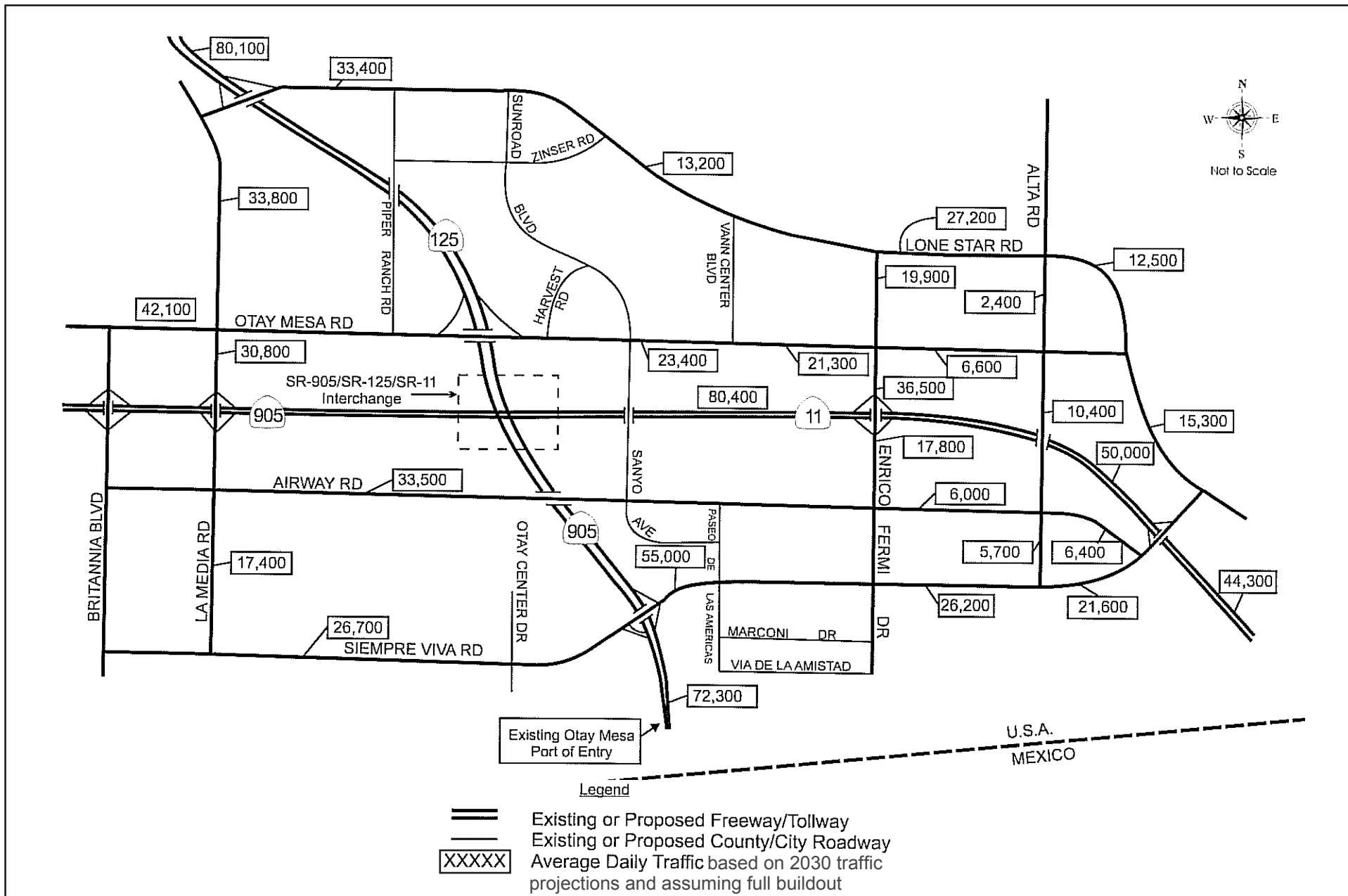
No Build Alternative

Under the No Build Alternative, some intersections and roadway/highway segments would be more congested and some would be less congested, compared with the build alternatives. Because no project action would occur under the No Build Alternative, no associated avoidance, minimization, or mitigation measures would be required.

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Figure 3.8-1

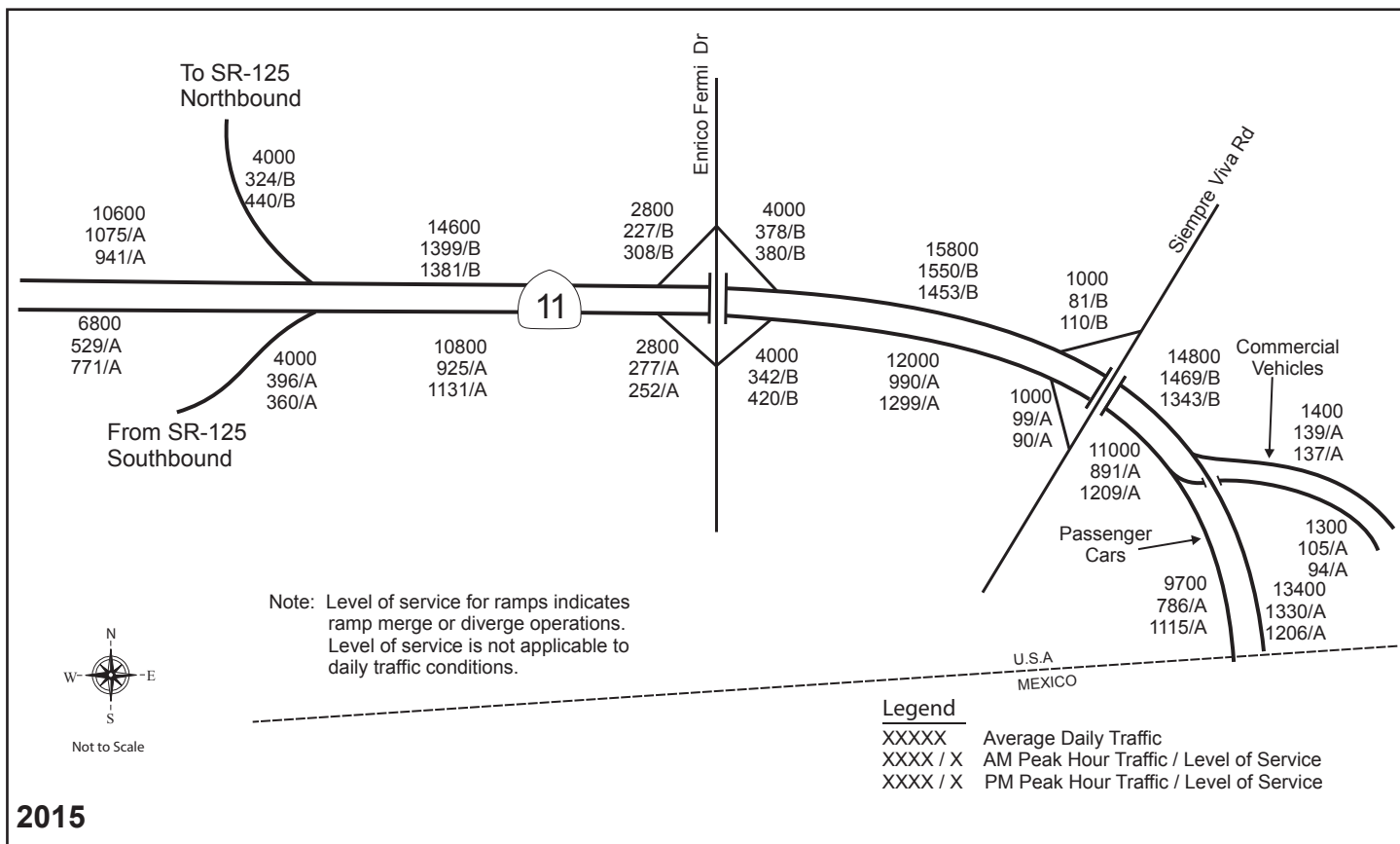
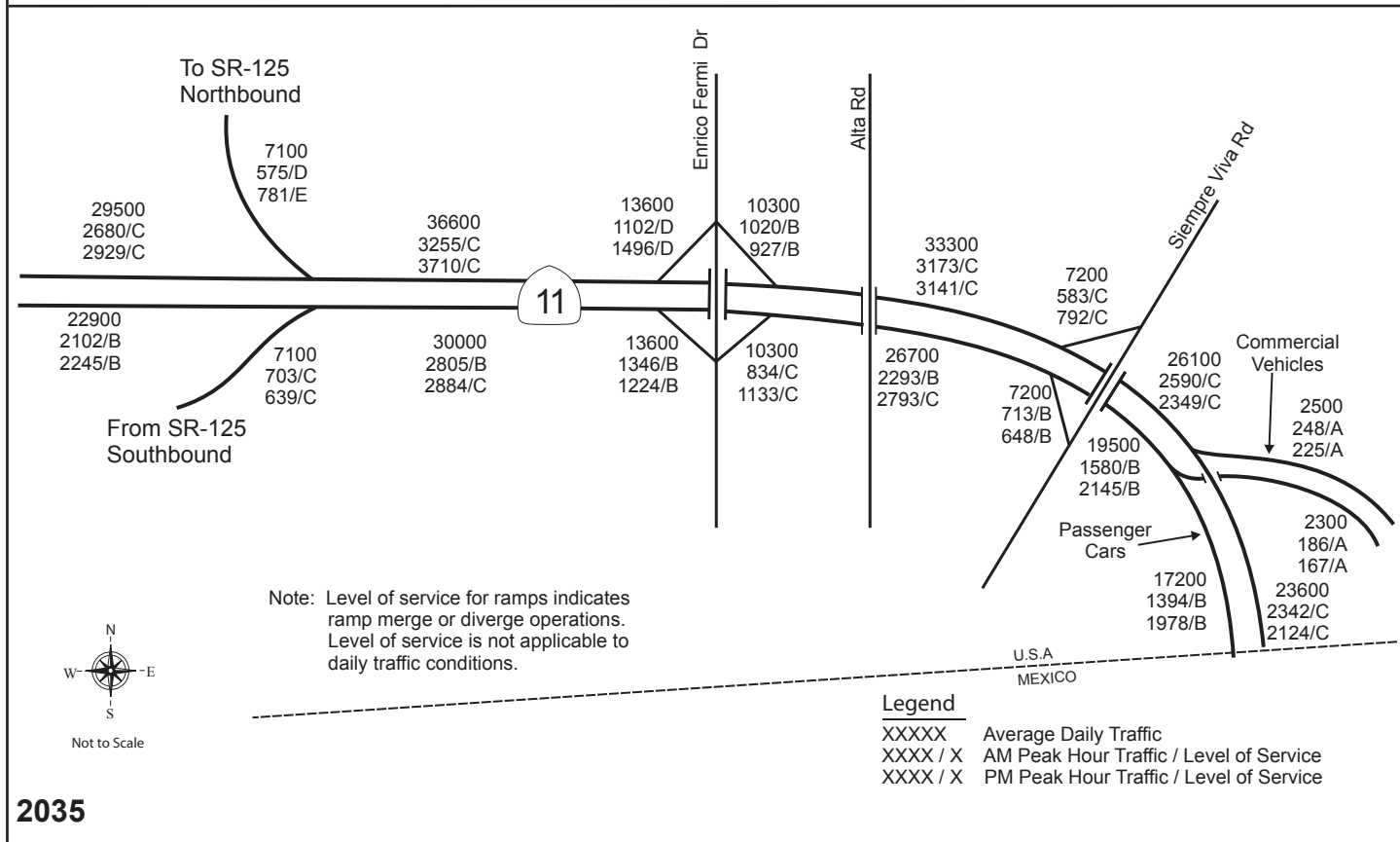


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2030 Traffic Forecasts from the EOMSP

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

Figure 3.8-2

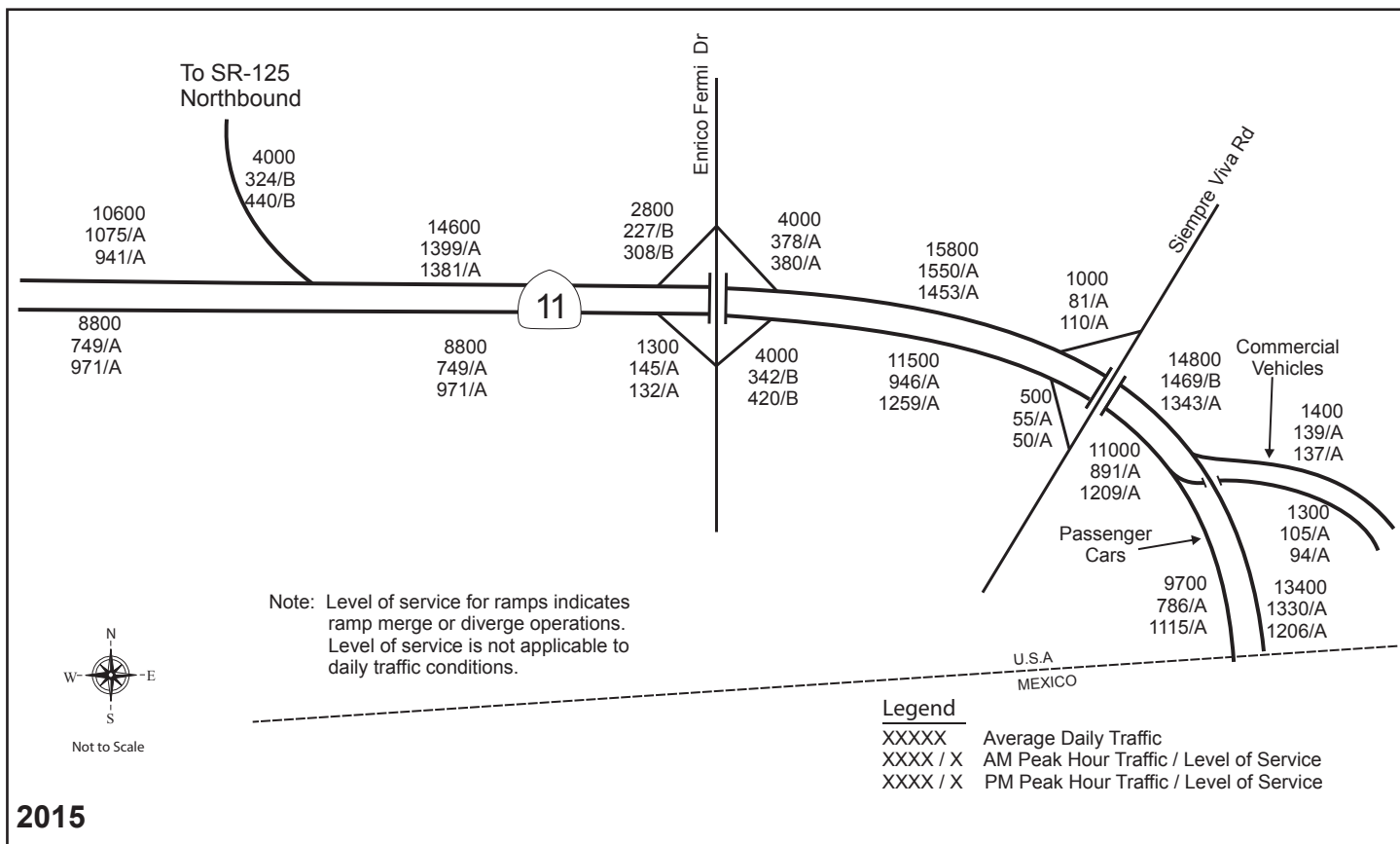
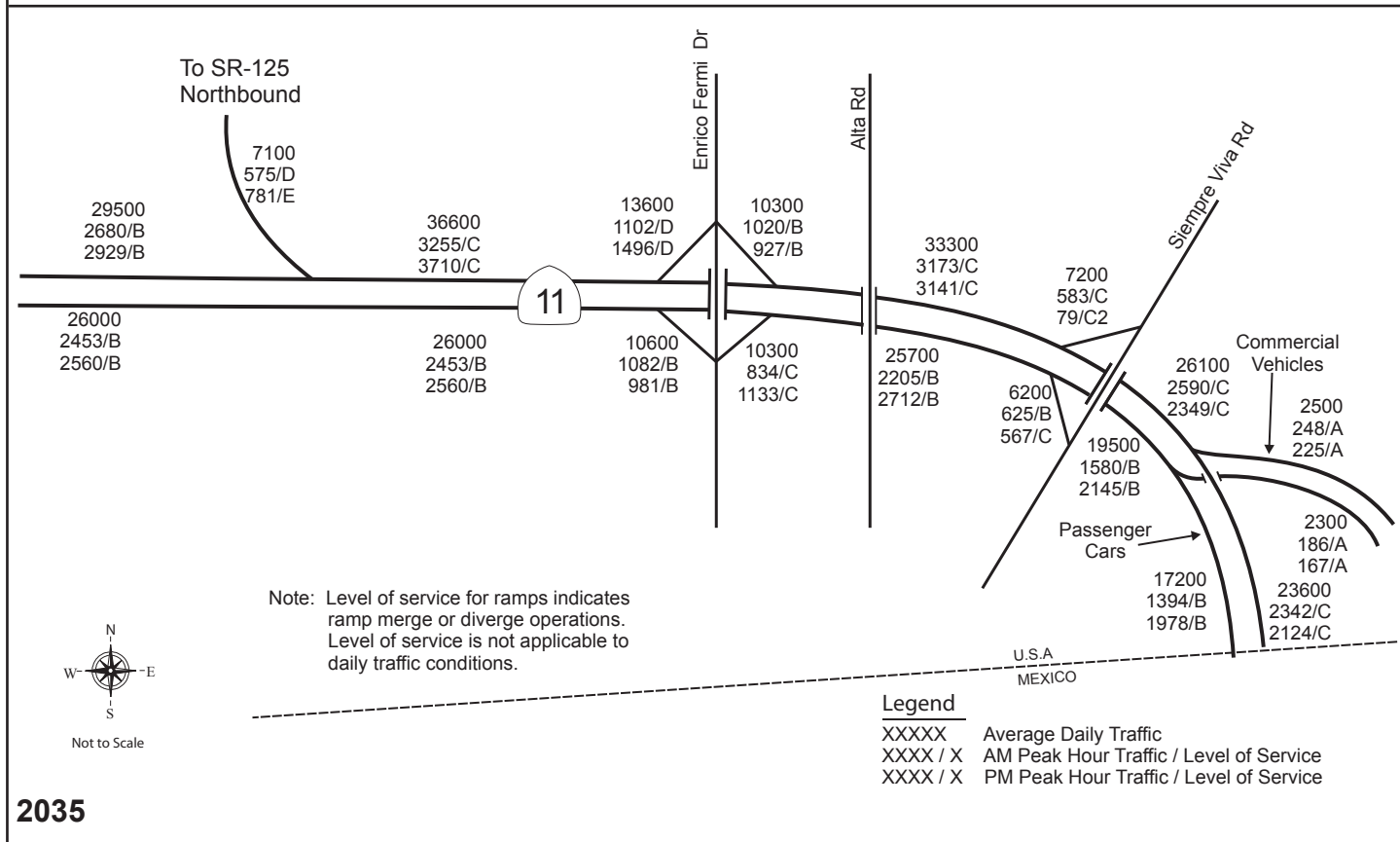


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2015 and 2035 SR-11 Volumes and LOS - Preferred Alternative

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

Figure 3.8-3

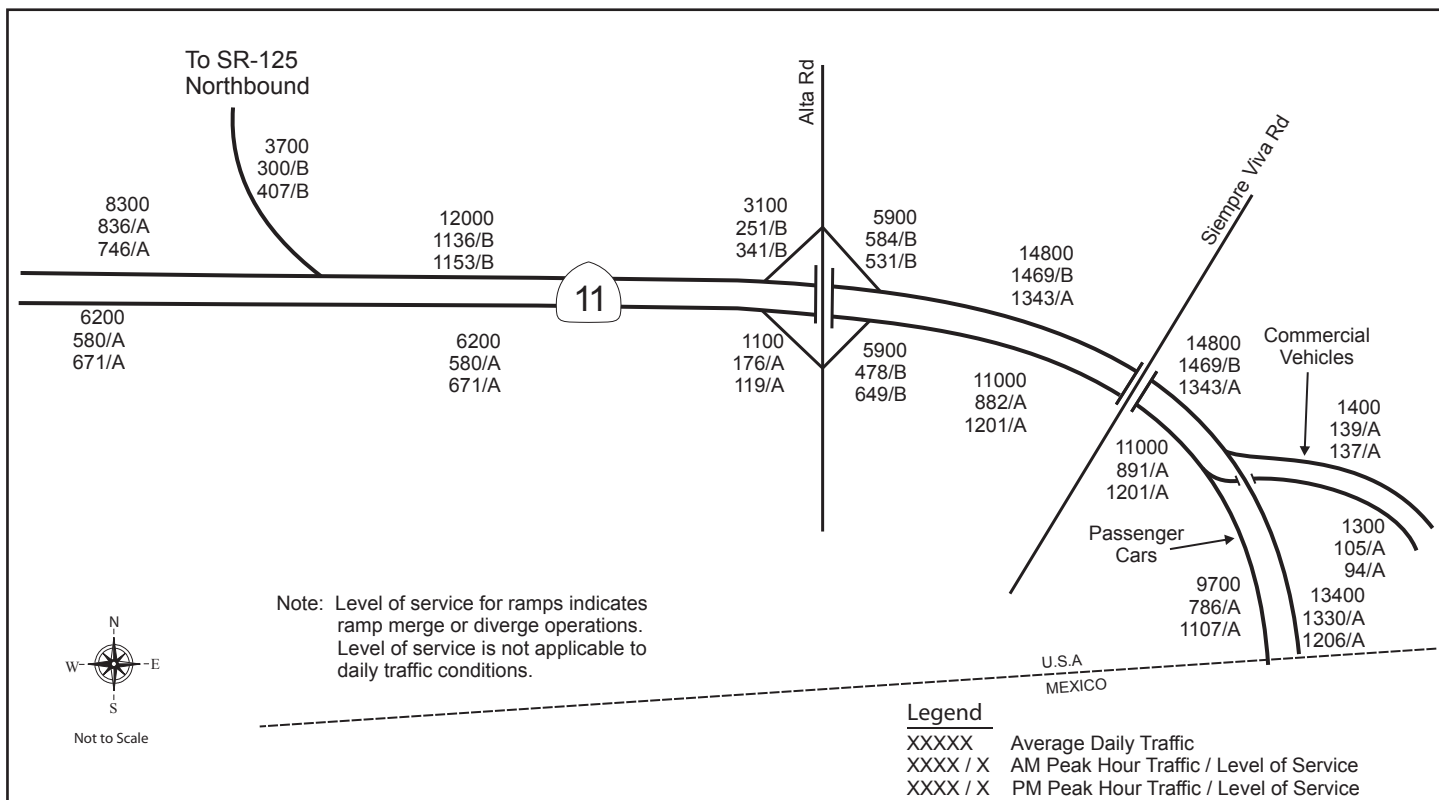


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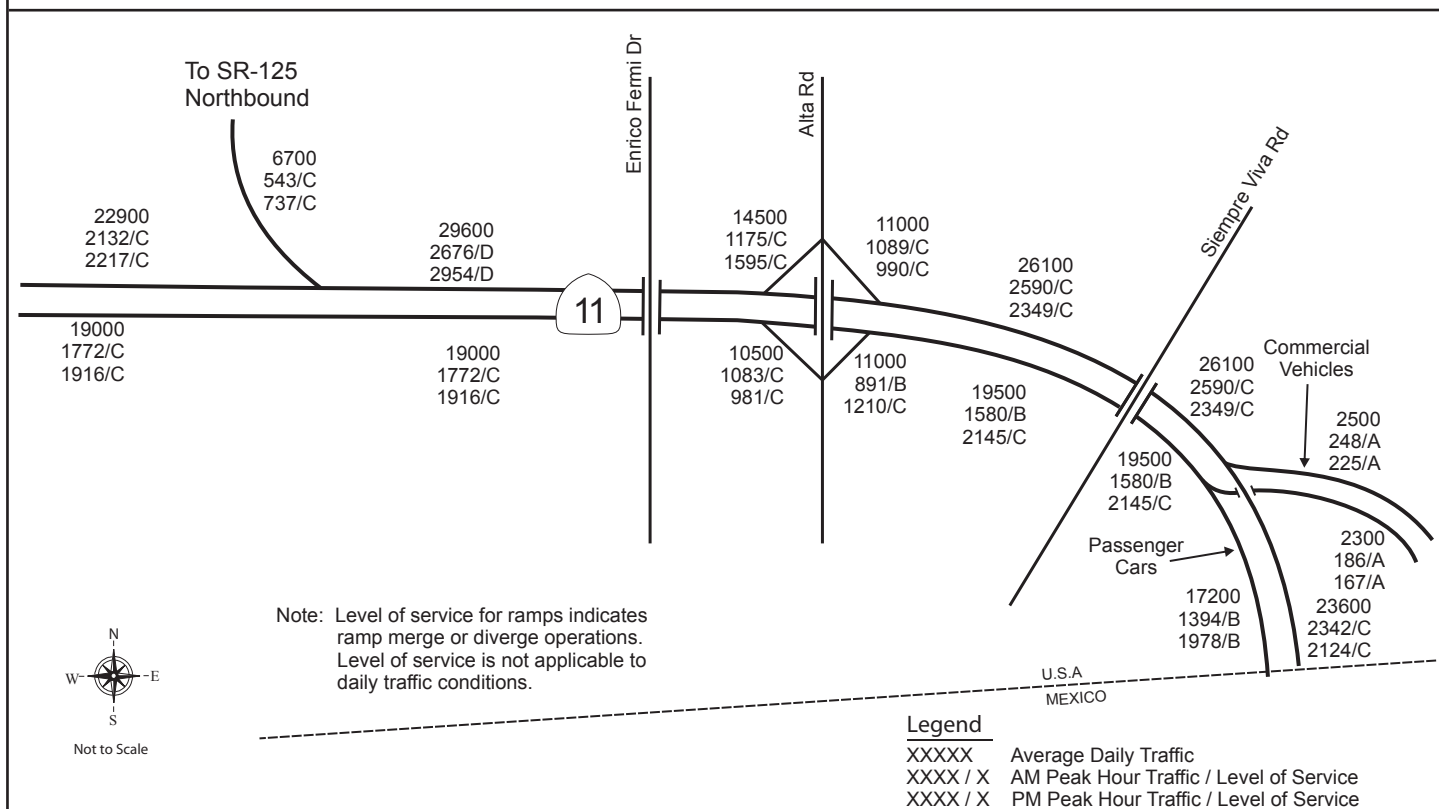
2015 and 2035 SR-11 Volumes and LOS - Two Interchange Alternative

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

Figure 3.8-4



2015



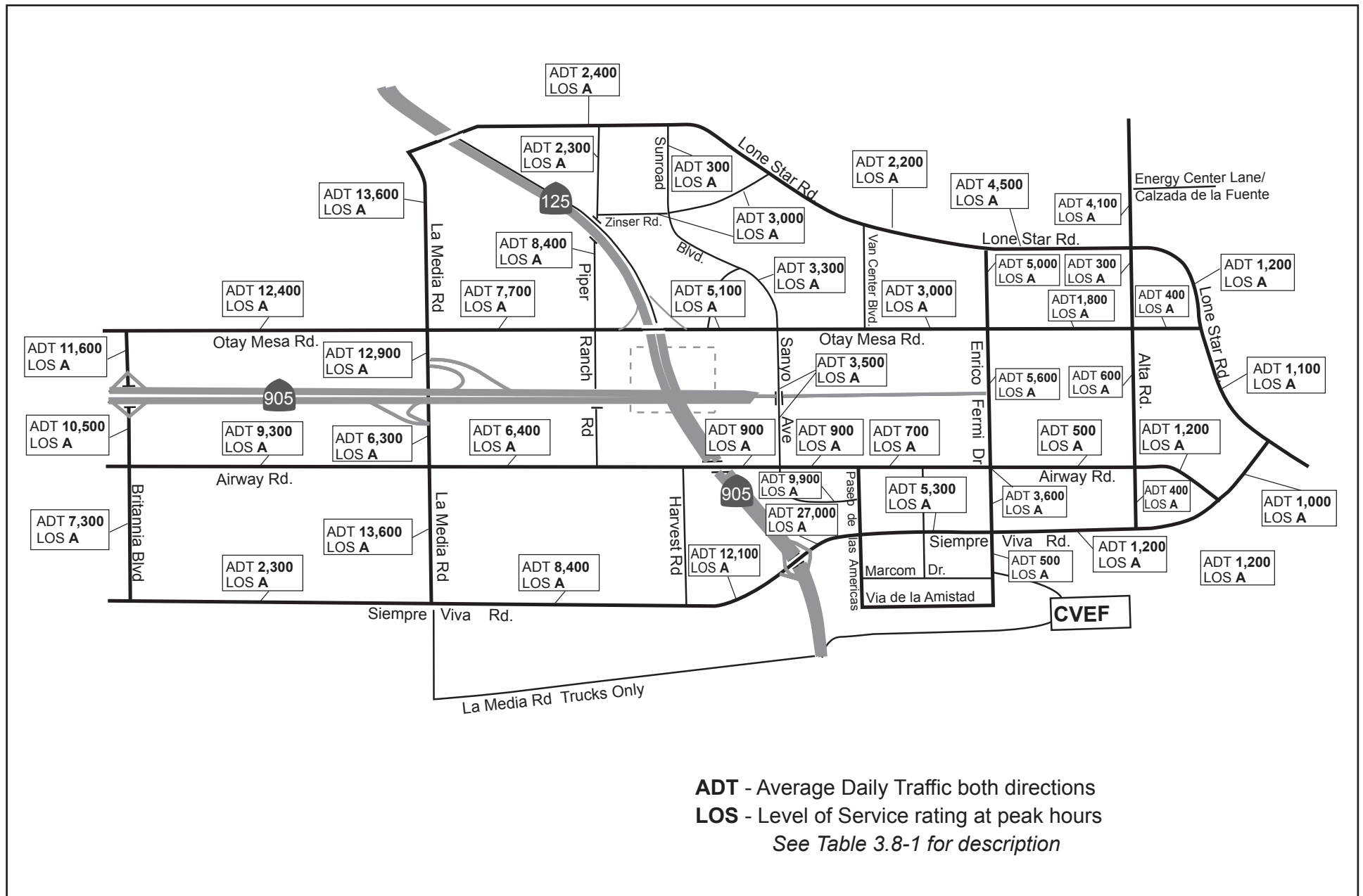
2035

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2015 and 2035 SR-11 Volumes and LOS - One Interchange Alternative

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

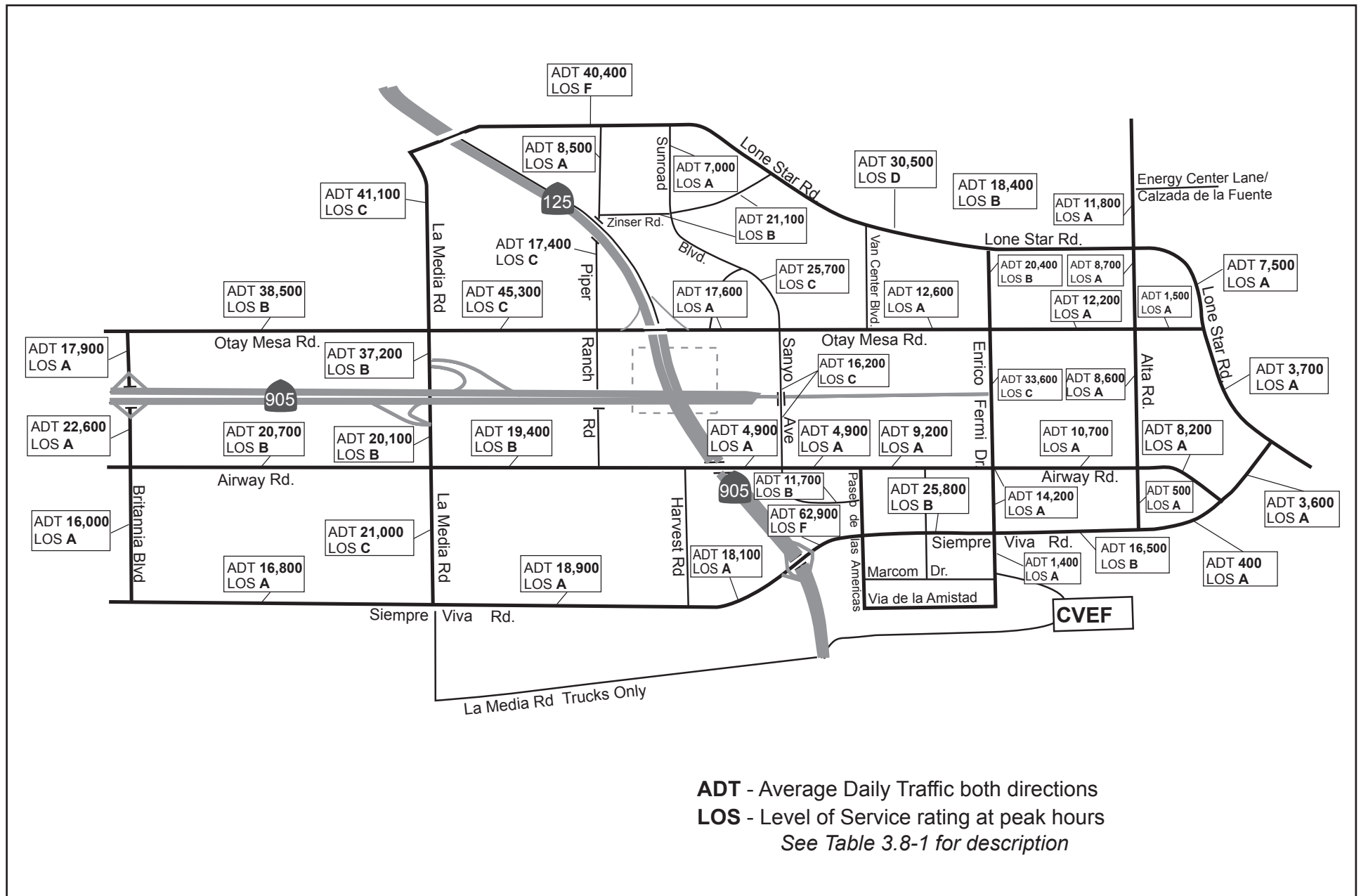
Figure 3.8-5



2015 ADT and LOS - No Build Alternative

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

Figure 3.8-7



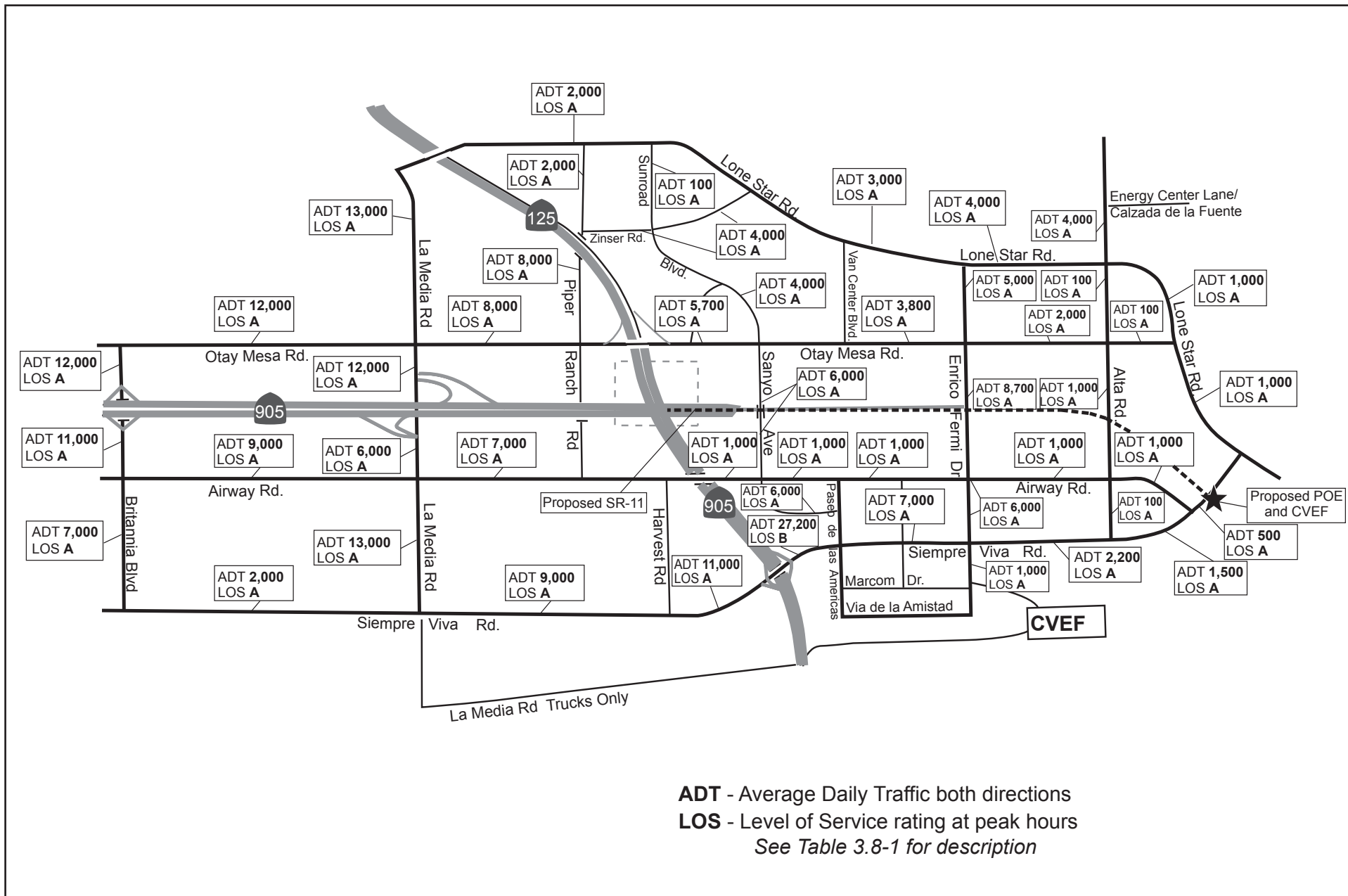
2035 ADT and LOS - No Build Alternative

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

Figure 3.8-8



Figure 3.8-9



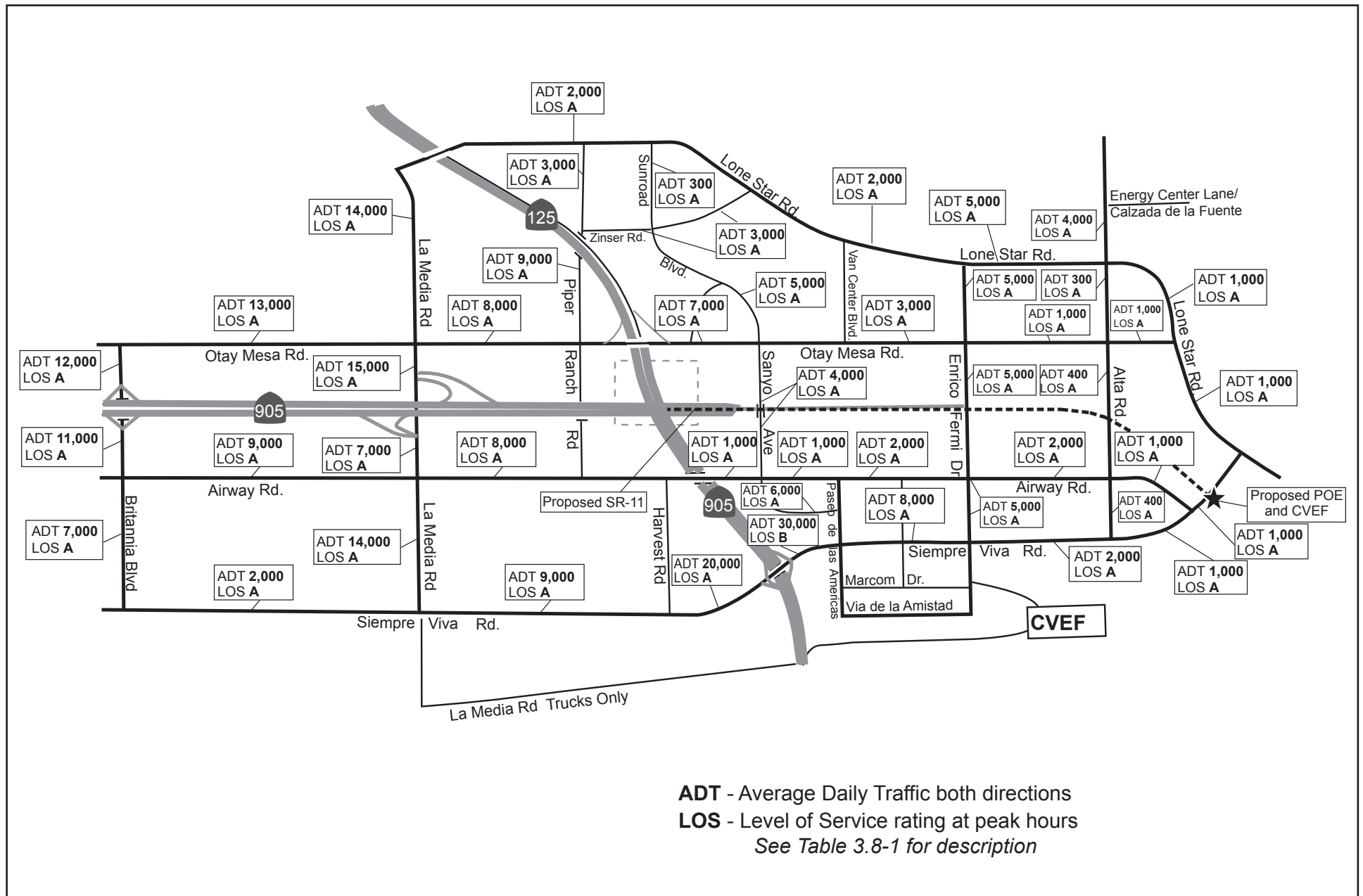
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2015 ADT and LOS - Two Interchange Alternative
 STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

Figure 3.8-10



Figure 3.8-11



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2015 ADT and LOS - No Interchange Alternative
 STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS
 Figure 3.8-12

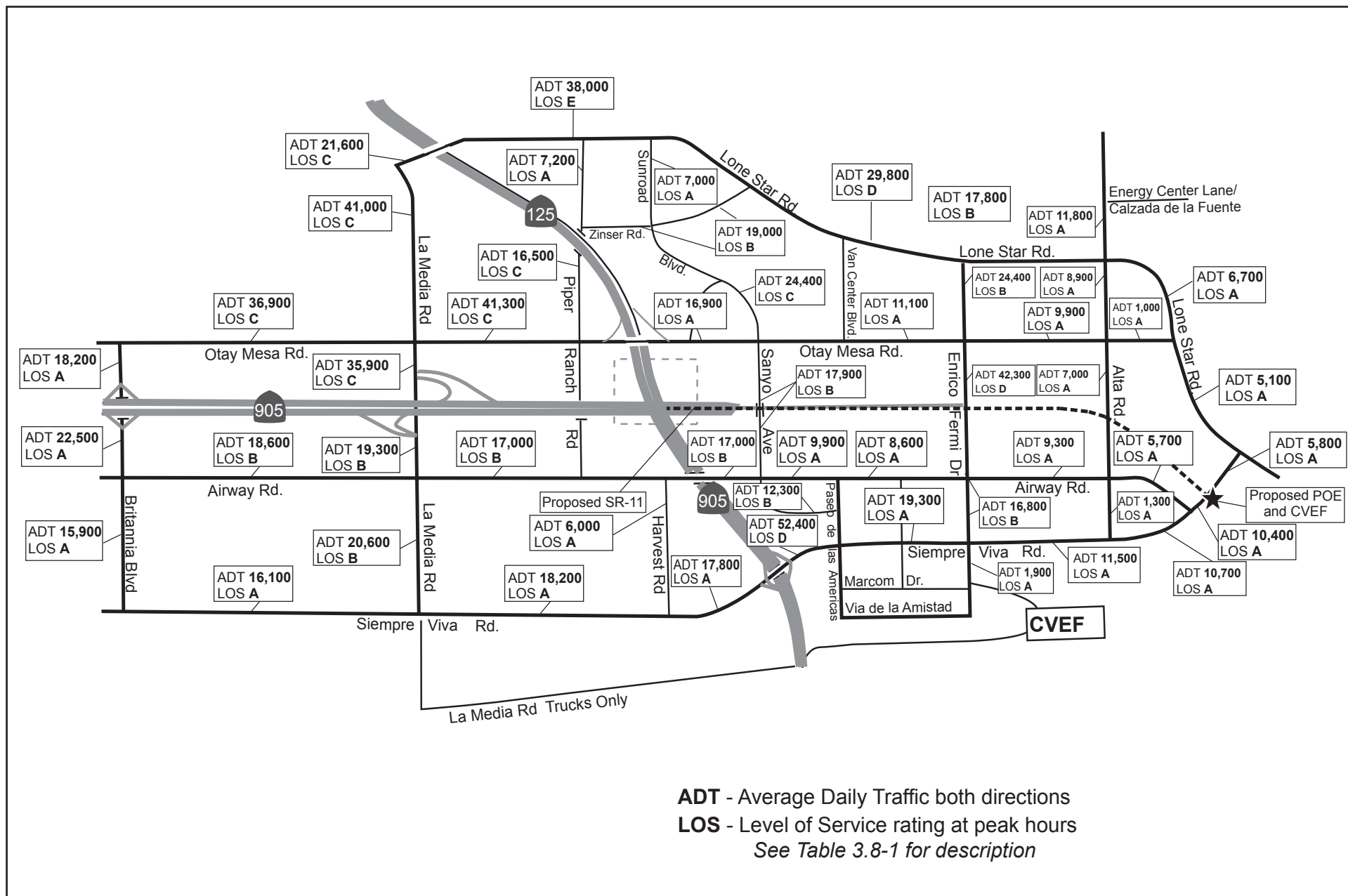


Figure 3.8-13



Figure 3.8-14



Figure 3.8-15

3.9 VISUAL/AESTHETICS

3.9.1 Regulatory Setting

NEPA establishes that the federal government use all practicable means to ensure all Americans safe, healthful, productive, and *aesthetically* (emphasis added) and culturally pleasing surroundings (42 USC 4331[b][2]). In its implementation of NEPA (23 USC 109[h]), FHWA directs that final decisions regarding projects are to be made in the best overall public interest taking into account adverse environmental impacts, including among others, the destruction or disruption of aesthetic values.

Likewise, CEQA establishes that it is the policy of the state to take all action necessary to provide the people of the state “with...enjoyment of *aesthetic*, natural, scenic and historic environmental qualities” (California Public Resources Code [PRC] Section 21001[b]). In addition, the California Scenic Highway Program is intended to protect and enhance California’s natural scenic beauty and to protect the social and economic values provided by the state’s scenic resources. A State Scenic Highway is any designated freeway, highway, road, or other public right-of-way that traverses an area of exceptional scenic quality. A scenic designation is determined by the local jurisdiction after consideration and evaluation of how much of the natural landscape a passing motorist sees and the extent to which visual intrusions (e.g., buildings, unsightly land uses, noise barriers) impact the “scenic corridor.” The state of California has adopted policies related to the protection of scenic corridors that guide planning and project development toward the use of context sensitive solutions to preserve scenic resources. No officially designated state scenic highways are located within the Otay Mesa area (Caltrans 2009a). There also are no County priority scenic routes in the area.

Visual resources have been evaluated in accordance with the FHWA *Visual Impact Assessment for Highway Projects* (FHWA 1981). This analysis provides the basis for conformance with each of the above regulations. Basic steps in the process include defining the project setting and viewshed, analyzing the visual character and quality of existing resources, predicting viewer response, identifying project-related impacts and mitigation to reduce adverse visual effects.

3.9.2 Affected Environment

This section is based on the project VIA prepared by HELIX (2010a). The visual setting, or regional landscape, provides a frame of reference, or baseline, for determination of project-related visual effects. The text below summarizes primary visual elements along the project site (which includes both the proposed SR-11 alignment and the SR-905 [under construction] alignment, as well as the POE, and CVEF), including identified scenic resources in the area, and also describes the analytic tools of the landscape unit and viewshed, as well as anticipated viewer sensitivity and key views.

Visual Setting

The proposed project is located on the relatively flat Otay Mesa west of the San Ysidro Mountains, and includes previously graded areas and/or developed sites along SR-905 and the western portion of proposed SR-11, as well as small hills and valleys varying in elevation by approximately 50 feet in the easternmost portion of the project. This eastern area also overlays portions of two ephemeral streambeds and one intermittent streambed. Elevations within the project limits range from approximately 490 feet above MSL at the far western extent to 760 feet above MSL in the far northeastern corner of the proposed POE, encompassing a portion of an abutting hill. The portion of SR-905 between SR-125 and Britannia Boulevard that would be modified by the proposed project is currently under construction.

The eastern portion of proposed SR-11 and the CVEF and POE sites contain blocks of undeveloped areas almost entirely vegetated with non-native (and small patches of native) grasses and traversed by multiple dirt roads and paths. Vegetation generally is low growing and brown most of the year, except in the springtime or following rain events, when it turns green and blooms with yellow or white flowers. These generally uniform, undeveloped areas have visual continuity with the surrounding undeveloped gentle hills and valleys on the mesa, which also are mainly vegetated with low-growing grasses. Some scattered, dark green trees near the topographic low spots accent the brown expanse of vegetation. The locations of photographs depicting the visual setting are shown on Figure 3.9-1, *Photo and Key View/Simulation Locations*.

The westernmost portion of proposed SR-11 would extend between existing buildings just east of Sanyo Avenue. These industrial complexes are typical of Otay Mesa development, consisting of large, low (generally two-story or smaller) structures, often with tilt-up concrete walls. Most buildings in the area are white or light gray with few details or variation, and are surrounded by parking lots. Few trees or landscaped areas exist within the parking lots or near the buildings, although a landscaped buffer consisting of a lawn-covered berm and evenly spaced trees borders Sanyo Avenue and the access roads. Figure 3.9-2, *Site Photographs 1 and 2*, illustrates typical buildings near the project site. Similar buildings, parking lots and sparse landscaped areas exist on either side of SR-905 (under construction) to the west of the SR-905/SR-125 Interchange.

This type of development is characteristic of Otay Mesa; the industrial lots extend westward and southward from the project site, with a few small developments to the north and ongoing development to the east. Additional land uses in the area include automobile and/or equipment yards and a municipal small-airplane airport (Brown Field). The project site overlays a portion of a temporary vehicle auction yard on the north (Photograph 3, Figure 3.9-3, *Site Photographs 3 and 4*). A power generating station at Otay Mesa Road and Harvest Road abuts the northern project boundary (Photograph 4, Figure 3.9-3), and another north of Airway Road, between Harvest Road and Sanyo Avenue, is located near the southern project boundary. A larger power plant is operating east of Alta Road, and two prison facilities are located approximately three miles north of proposed SR-11. Several private businesses and residential properties are also located in the vicinity. Three private residences are located on the north side of Old Otay Mesa Road, approximately midway between SR-125 and Alta Road. Figure 3.9-4, *Site Photograph 5*, illustrates a typical view of this cluster of residential buildings as seen from Otay Mesa Road; the buildings and dense ornamental trees abut the roadway and are surrounded by currently undeveloped lots.

The CVEF and POE site is located at the U.S - Mexico international border, which is visibly delineated by tall border fencing. Houses, industrial buildings, and other development within Mexico abut the border in this area. Structures within Mexico are visible both from the mesa on the U.S. side, and higher points in the surrounding area, such as the foothills east of the project site. On the U.S. side of the border, the CVEF and POE site are undeveloped, and support non-native grasslands typical of the area. The vividness and expansive scale of the grasslands is emphasized by their contrast with the visible development in Mexico. Figure 3.9-5, *Site Photographs 6a and 6b*, illustrate the primarily undeveloped nature of the CVEF and POE sites and a portion of eastern SR-11. Dirt roads transect the area. The vehicle auction yard and power plant are visible (Photograph 6a). The San Ysidro Mountains make up the background of the eastern portion of the panoramic view. More distant mountains in Mexico are visible farther south (right side of Photograph 6b). The border is discernable due to the change (intensification) in land uses to the south.

Figure 3.9-6, *Site Photograph 7*, is a panoramic picture taken from Otay Mountain Truck Trail, and provides an overview of the entire study area. As can be seen in this 2009 photograph, large portions of the study area are undeveloped, covered in low-growing grassy vegetation, and bisected with multiple dirt roads. The western portion of the site (to the right of the photograph) extends into the more developed

portion of Otay Mesa. As noted, the U.S. - Mexico border abuts the southern edge of the POE site, and is discernable from this viewpoint mostly by the change in land use. The vehicle auction yard, the power plant, one of the state prison facilities in the area, and other nearby development also are visible in this overview.

Scenic Resources

A San Diego County Resource Conservation Area (RCA) for Biologically Sensitive Lands Overlay is designated over most of the San Ysidro Mountains that lie to the north and east of the project site. The Otay Mountain Cooperative Land and Wildlife Management Area and the Bureau of Land Management (BLM) Otay Mountain Wilderness Area, National Wilderness Preservation System land also overlay areas to the east within the mountains. Adjacent to the BLM Otay Wilderness Area is the CDFG-owned Otay Mountain Ecological Reserve, another scenic resource, providing recreational opportunities including hunting and hiking. The Otay Mountain Truck Trail, which transects the mountains, is a graded, gravel-paved roadway mainly used by border patrol agents; some mountain bikers and off-road vehicle motorists also use this road. The trail provides access to and across the BLM land and wildlife conservation area at Otay Mountain. The foothills are visually dominant from the mesa, due to their greater topographic variation than usually seen across the mesa top. The hills appear to be generally uniform in color and texture when viewed from the mesa, with topographic form and line taking precedence over changes in color or texture related to vegetation. They also block views of mountains or canyons further to the east; the peak of Otay Mountain and the RCA and BLM areas are not visible from the vicinity of the project alternatives, including the Preferred Alternative.

The Otay River Valley, which comprises the northern edge of the Otay Mesa, is approximately 2.5 miles north and northwest of the project alternatives. Johnson Canyon and O'Neal Canyon are two canyons designated conservation/limited use areas in the San Diego County subregional plan. While notable topographic features, these canyons are downslope at some distance from the project site and as a result, are not visually accessible to an on-site viewer or from the immediately surrounding area. Besides these areas, the closest mapped public recreation areas include the Lower Otay County Park and the Otay County Open Space Preserve approximately six miles to the north of the project. These two San Diego County facilities are located within the Otay River Valley. Due to their distance from the project site and their lower elevation, these sites are not visible from the project site or the immediately surrounding area.

As stated above, no officially designated state scenic highways or County priority scenic routes are in the area.

Landscape Units

A landscape unit is a portion of the regional landscape and can be thought of as an outdoor room that exhibits a distinct visual character. A landscape unit will often correspond to a place or district that is commonly known among local viewers. The project alternatives, including the Preferred Alternative, are located within a single landscape unit that is generally defined by the San Ysidro Mountain foothills on the east, Tijuana River Valley and I-5 on the west, and Otay River Valley on the north. Visually, the landscape unit extends southward to hills and mountains in Mexico and includes development in Tijuana. Jurisdictionally, however, the landscape unit ends at the border.

Viewshed

A viewshed is a subset of a landscape unit and is comprised of all the surface areas visible from an observer's viewpoint. The viewshed is defined by the visual limits of the views from the proposed project, and also includes the locations of viewers with the potential to be affected by visual changes resulting from project features.

The project viewshed, shown in Figure 3.9-7, *Viewshed Map*, was delineated through computer-aided and field-verified analysis of the topography on site and in the surrounding area and does not consider physical obstructions that can limit the viewshed in local areas, such as buildings, small variations in topography, and vegetation. Additionally, beyond one mile, atmospheric conditions limit clarity and visually mute the details of topographic variation, highway facilities, and structures such as overcrossings or bridges and ramps. The viewshed shown in Figure 3.9-7 is based on the Two Interchange Alternative, which is the alternative occupying the greatest acreage. The One Interchange Alternative would involve more R/W at Alta Road, but less at Enrico Fermi Drive, but the viewshed would be similar. Most variations would occur within the previously approved SR-905/SR-125 Interchange R/W and/or the proposed SR-11 R/W; the exception would be the Siempre Viva Road Full Interchange Variation, which would require more R/W at this interchange than the baseline Two Interchange Alternative, but the viewshed would be similar. The Preferred Alternative is based on the Two Interchange Alternative with the SR-125 Connector Variation, with additional refinements; its viewshed would also be similar to that shown in Figure 3.9-7. If an alternative or variation with a smaller footprint is selected, the project may be visible from fewer areas than depicted in this graphic. For instance, compared to the Two Interchange Alternative, the POE would not extend as far eastward under the Preferred Alternative, so the project in this case may not be visible from the eastern edge of the Figure 3.9-7 viewshed.

The analyzed footprint is more than four miles long. Views from any one area toward the project can be assumed to be of the portion of the project closest to that point. For example, views from the areas near Britannia Boulevard and La Media Road would be of the westernmost portion of the project, rather than of project features east of SR-125, and vice versa. Within the U.S., a one-mile radius centered on the project site is marked on Figure 3.9-7 for reference purposes. Although the intense development on the Mexican side of the border in this area is visually dominant in views to the south from the project study area, this discussion focuses on areas within the U.S. and under Caltrans/local agency planning jurisdiction.

As indicated in Figure 3.9-7, the land use study area would be visible from much of the undeveloped area surrounding the project site and from some of the developed portions of the mesa that are farther from the study area, such as near Siempre Viva Road, the power plant, and the Donovan State Prison. The viewshed also indicates that the study area may be visible from portions of the major roads in the area, such as Otay Mesa Road and Alta Road. Small hills and berms bordering Otay Mesa Road, however, block views to the south along portions between Alta Road and Sanyo Avenue. Similarly, the north-south trending Alta Road varies in elevation enough to block extensive southward views from near the power plant.

Most of SR-905 and Otay Mesa north and south of SR-905 are highlighted as being within the viewshed due to the generally flat and gently varying topography of the area. Physical obstructions, such as buildings and landscaping, and an increasing distance, however, would restrict views of the study area to east-west oriented streets from this area. Traffic, atmospheric conditions, and local topographic variations also would restrict views from this area.

North and east of the study area, the viewshed generally is limited by the south- and west-facing slopes of the San Ysidro Mountain foothills. The varied topography limits visibility westward to the study area from most of the undeveloped areas of the mountains and foothills. The Otay Mountain Truck Trail, a gravel road used for recreational purposes, transects the San Ysidro Mountains in a generally east-west direction, and is located north and east of the project site; portions of the road provide views of the study area, as illustrated in Photograph 7, Figure 3.9-6 discussed above. It also may be possible to view the study area from some peaks and slopes farther to the north and east; however, these undeveloped areas have few access roads and generally are not heavily used for recreation.

As noted above, the project site is not visible from the southern edge of the Otay River Valley, or from the slopes of Johnson and O'Neal canyons. Intervening topography prohibits any views of the site from the County recreational facilities within the Otay River Valley.

Visual Character and Quality

Visual Character

Visual character is descriptive and non-evaluative, which means it is based on defined attributes that objectively are neither positive nor negative. This objective character includes both pattern elements such as form (e.g., mass), line, color and texture; as well as pattern character, including the dominance, scale, diversity or continuity between these elements. A change in visual character cannot be described as having good or bad attributes until it is compared with the viewer response to that change (i.e., if there is public preference for existing visual character and resistance to changes contrasting with that character, then those changes in the visual character may be evaluated as negative).

The visual environment of the eastern portion of the project site, the CVEF and POE site, and the immediate surrounding area not currently subject to development is characterized by the flat topography and low-growing and generally uniform vegetation, which provide little variation in terms of color or texture. The topography and vegetation become more varied to the east of the project site where the San Ysidro Mountains are visually dominant. The low hills stretching between the mountains and the mesa top are increasingly larger and more visually prominent from west to east. The canyons and Otay River Valley north and west of the project site are dominant landmarks in the area, although they descend below the mesa, and are therefore not visible from the project site.

The more central and western portions of the project site extend through developed areas of Otay Mesa that are visually characterized by dominant buildings, large trucks and other vehicles, and parking lots. The trees and landscaped areas that surround each developed lot provide some visual variety but generally are not dominant features. While notably different in scale and mass from undeveloped portions of the mesa, these uses are fairly visually consistent among themselves. Where developed lots lie adjacent to undeveloped lots, or where undeveloped lots are surrounded by developed areas in the outlying areas, the visual diversity is high.

The few residential lots in the area surrounding the project site are small in scale relative to the industrial development, and are separated by large areas of open space. These lots are not visually dominant elements within the landscape, but do contribute some variation of pattern elements (line and color) through such features as rows of trees edging a roadway or a small copse of trees associated with the dwelling. These can be notable in this otherwise very horizontal and xeric (i.e., extremely dry) landscape (refer to Photograph 5, Figure 3.9-4, discussed above).

Visual Quality

Visual quality can be evaluated by identifying the vividness, intactness and unity present in the viewshed, which can be defined as follows:

1. Vividness is the visual power or memorability of landscape components as they combine in distinctive visual patterns.
2. Intactness is the visual integrity of the natural and man-built landscape, and its freedom from encroaching elements. It can be present in well-kept urban and rural landscapes, as well as in natural settings.
3. Unity is the visual coherence and compositional harmony of the landscape considered as a whole. It frequently attests to the careful design of individual manmade components in the landscape.

The eastern portions of SR-11 and the CVEF and POE sites, comprised largely of undeveloped grasslands, are situated between the developed mesa and the San Ysidro Mountains. As noted above, development is beginning to expand eastward, creating some patchwork areas where a developed lot is surrounded by undeveloped grasslands or an undeveloped parcel is surrounded by development. Taken one parcel at a time, the grasslands are neither visually powerful nor memorable. Put together over a large area, however, the expanse of relatively flat areas is visually impressive and memorable as an open space area. The San Ysidro Mountains and foothills also are visually dominant and memorable and have high vividness. In contrast, the developed areas have low visual vividness; the buildings are neither unique nor memorable, and taken together they do not comprise a distinctive space. Generally, the openness of the landscape allows a viewer to observe these disparate elements at the same time, and the combination of the low vividness of the developed areas, the moderate vividness of the grasslands, and the high vividness of the mountain range results in a moderate level of vividness for the project site and the immediately surrounding area.

The undeveloped flat grasslands also demonstrate high visual intactness. These areas generally have high visual continuity, exhibiting little topographic diversity and low levels of change in scale, as well as very little variation in line, form, color, or texture. The mountains also have high visual intactness; they are free from buildings or other developed aspects that would otherwise distract from their visual dominance. Power lines and supporting structures, though tall when in the foreground of a view, are visually dwarfed by the dominant hills from most vantage points in the viewshed, and become small elements that do not distract from the open space surrounding them. The border to the south, beyond which developed areas east of Tijuana are visible, and the industrial areas of Otay Mesa to the west create visual boundaries to the grasslands. These industrial areas, though visually composed of diverse elements, are also highly intact; Otay Mesa has design guidelines that regulate the look and character of the buildings and landscapes. Though directly bordering each other, the distinct change from undeveloped to developed visual environments does not distract from the intactness of either, and the contrast tends to heighten the visually intact character of each--resulting in moderately high visual intactness overall.

The undeveloped areas within and surrounding the project site have high visual unity. Although the buildings and lot layouts of the industrial areas in the central and western portions of the site are visually similar to each other, the trees and landscaped areas, where present, contrast with the buildings. The industrial areas, therefore, have moderately high unity. The developed areas are not designed to integrate with the grassland or mountain areas. Seen together, the coherence of these components, and therefore their visual unity, is moderate. The project site includes both industrial lots and undeveloped grasslands with high unity. As a result, overall the project site has moderately high unity.

Taken together, the moderate level of vividness, moderately high intactness, and moderately high unity combine to suggest that the project site has moderately high visual quality.

Existing Viewers: Exposure and Sensitivity

Viewer response is composed of two elements: exposure and sensitivity. Viewer exposure is typically assessed by measuring the number of viewers exposed to the resource change, type of viewer activity, duration of the view, speed at which the viewer moves, etc. Viewer sensitivity is defined both as the viewers' concern for scenic quality and the viewers' response to change in the visual resources that make up the view. Different viewer groups have different view exposure (orientation or duration of view) as well as sensitivity to that view (e.g., in general terms residential viewers are usually more invested in views from their homes than an individual making a one-time business visit to an area would be in the same view).

Existing viewers of the proposed project alternatives mainly are motorists on local streets and workers and visitors to local businesses. The existing and projected numbers of motorists on each potentially affected roadway are detailed in Section 3.8 of this Final EIR/EIS, with the most traveled roads within the viewshed including Otay Mesa Road, Siempre Viva Road and La Media Road. Exposure of existing motorists on local roadways depends on the roadway on which they are traveling, and in which direction. For example, eastbound motorists on SR-905 near the planned SR-905/SR-125/SR-11 Interchange, the proposed SR-11/SR-905 connectors, and the proposed SR-905 improvements have direct views of the study area and potentially could experience high exposure. These areas are limited, however, and the length of time motorists would view the project area would be brief. Overall exposure for this group would be moderately low.

Patrons and employees of local businesses and industrial buildings in the project area may be motorists, but also may view the project area from their places of business. Their attention and awareness presumably is focused internally. Although they may be aware of views, especially if familiar with the surrounding area; their sensitivity is assumed to be moderate. Where views toward the project site are available, they could be of moderate duration, depending on the viewer's activity. For example, some lots may include break areas or parking lots from which the highway may be visible. Viewer exposure is moderate.

Existing local roadways near the western extent of the proposed project mostly extend between buildings and developed lots, and provide few views of the undeveloped areas within and near the study area; motorists on these roads have low exposure to the project site. Near the eastern extents of the study area (e.g., on Otay Mesa Road near its terminus, on Alta Road, Enrico Fermi Place, or the eastern extent of Airway Road), views to the extensive grassy, flat areas within the study area are more available, but the numbers of viewers drop.

Motorists' sensitivity similarly would be mixed. Most motorists on existing local roadways presumably are workers at the local businesses, power plant, and correctional facilities, or visitors to the correctional facilities and patrons of the businesses. Their attention likely is focused on their respective destinations, and while they may be appreciative of the views available from these roadways, they generally are not seeking a recreational experience. Viewer sensitivity also can be affected by the viewer's perception of the highway's appropriateness within a landscape. As most motorists would be using the new and improved roadways to access their business location or the proposed border crossing, it is expected that they would see the road as an appropriate and necessary element in the mesa landscape. As a result, it is expected that they would have low sensitivity.

Very few recreational motorists may be able to see the existing project site from the Otay Mountain Truck Trail, which provides access to the BLM preserved areas of the San Ysidro Mountains. Panoramic views of Otay Mesa are available from parts of this trail, and recreational users of this road could have high sensitivity. Border patrol agents, while focused on the view from this roadway, cannot be considered as having the same sensitivity as recreational motorists. While their speed of travel would be low, necessitated by the unpaved and winding condition of the road, user exposure from this roadway would be low, due to their low number (excluding the border patrol, less than 1,000 recreational drivers use the road per year) and the few overlook areas available on the roadway. Awareness of and sensitivity to views that include any of the build alternatives would be moderate; unless stopped at an overlook point viewers would be focused on the rugged roadway.

Excluding the Truck Trail, few pedestrians and bicyclists utilize the area surrounding the project site due to the large scale and industrial traffic mix. Existing uses are not of a type or scale to encourage pedestrian travel, with the result that the viewer group is small and has a low exposure to the project site. The proposed project may attract pedestrians, particularly those using public transit or long-term parking

near the border, but these viewers generally would be contained within the project site after development. Pedestrians and bicyclists may have more opportunity to view the project site and surrounding area due to their slow travel speeds, and would have a moderately high sensitivity to changes in the surrounding area and potential loss of views toward the nearby mountains. As with motorists, however, the pedestrians and bicyclists using the new POE would see the proposed project elements as an appropriate and necessary element in the mesa landscape, and as a result, it is expected that they would have low sensitivity.

Three residential properties are within the project viewshed. This small viewer group experiences long view exposure due to their stationary viewing angle. They are expected to have moderately high sensitivity, due to their familiarity with the area and their concern for view composition from their homes.

Key Views

Because it is not feasible to analyze all the views in which the project would be seen, several key viewpoints most clearly displaying the visual effects of the project have been selected. Key views represent typical views seen by the most viewers and the primary viewer groups that would potentially be affected by the project. As such, they provide focused analysis of a definable unit, but are representative of changes project-wide. Information provided about key views below is supported by more detailed discussion in the project VIA. Key view locations are depicted on Figure 3.9-1. Selected views include:

- South of the termini of Alta Road and Otay Mesa Road, looking south
- On the project site east of Alta Road, looking west at the proposed Enrico Fermi Drive Interchange
- On the project site near the future northwest edge of the POE, looking northwest at the proposed Siempre Viva Road Interchange
- At the end of Airway Road, looking east
- On Sanyo Avenue north of Airway Road and SR-905, looking north
- Within the proposed project R/W, east of Sanyo Avenue, west of Enrico Fermi Drive, north of Airway Road, and south of Otay Mesa Road, looking west

These six views were used as the basis for visual simulations that represent the proposed improvements. Following the key view descriptions, five additional key view points for which specific project analysis was undertaken are described. These locales include Enrico Fermi Drive, an additional location on Sanyo Avenue, Otay Mesa Road, and the proposed border entry point and toll road facilities.

Key View 1

Key View 1 (Figure 3.9-8, *Key View 1/Simulation 1*) was taken south of Otay Mesa Road from the unpaved portion of Alta Road, looking southeast toward the U.S. - Mexico border. The visual character of Key View 1 predominantly is undeveloped and mostly flat, with pattern elements being more simple than complex. The view encompasses curvilinear and fluid lines, but also rigid and rectilinear lines. The view generally is comprised of earth-toned colors. The scale of this view generally is open and expansive, with dominant but not encroaching elements such as low-lying vegetation and unpaved Alta Road.

The vividness of Key View 1 is moderate because the combination of the elements within the view does not create visual patterns with distinct visual power. The intactness of the view is moderately high; the unpaved road contrasts somewhat with the vegetated open space, yet it does not visibly encroach into the visible open space, or detract from the visual integrity of the expanse of vegetation. The unity of the view also is moderately high; the few elements composing the view generally are harmonious and have high visual coherence. Overall, Key View 1 has moderately high visual quality.

Key View 2

Key View 2 (Figure 3.9-9, *Key View 2/Simulation 2*) represents a point within the proposed SR-11 R/W between Alta Road and Enrico Fermi Drive. It represents a westward-facing view of the area where the proposed roadway would be. The existing view is almost entirely composed of an existing manufactured slope, on top of which is a fence and shipping containers. The view is primarily earth-toned. It contains geometric forms and lines, and the texture is somewhat irregular. The scale of the view generally is large, although smaller vegetation is visible. Diversity is low, because the view primarily is comprised of the embankment, with some small variation due to the vegetation, the fence and the shipping containers. Generally, the few elements within the view are consistent, and the continuity is relatively high. The view is not open and extensive because it is so close to the embankment; on the other hand, the relatively few elements are visually balanced.

There are no memorable elements or distinct visual patterns present, resulting in low vividness for this key view. Intactness and unity are moderately high. There are few elements, and although the shipping containers contrast with the slope, the slope and its strongly horizontal horizon line appear manufactured, and the geometric containers therefore do not visually encroach into the visual environment of the area. The composition of the few elements generally is symmetrical and coherent. Overall, Key View 2 has moderate visual quality.

Key View 3

Key View 3 (Figure 3.9-10, *Key View 3/Simulation 3*) was taken from the northwest edge of the proposed POE site and the southeastern extent of proposed SR-11. The view looks northwest across gently varied flat areas covered with low-growing vegetation.

The grass-vegetated, gentle slope in front of the viewer dominates the visual character of Key View 3. The view does not encompass complete visual forms, but what is visible generally is geometric, with curvilinear lines, earth-tone colors, and irregular textures. The scale of the view is large; the undeveloped areas appear extensive on all sides. Diversity is low, and continuity is high.

Although the visual character of Key View 3 is not highly vivid or memorable, the view is unique because unlike most areas in the viewshed, no development is visible. The expanse of open space represented by this view is vivid, with distinct visual power, especially when contrasted with local development. The intactness of the area is high; the vehicle tracks visible in the vegetation in front of the viewer and unpaved roads do not encroach into the area, but serve to highlight the undeveloped characteristics of the area. Similarly, the view and the open space areas have high unity, with high visual coherence. Overall, Key View 3 has high visual quality.

Key View 4

Key View 4 (Figure 3.9-11, *Key View 4/Simulation 4*) was taken from the east end of Airway Road, east of Enrico Fermi Drive, looking east. It encompasses an expansive view of the undeveloped areas of East Otay Mesa. The undeveloped, varied topography of the eastern edge of the Otay Mesa area makes up the visual environment of Key View 4.

Key visual pattern elements include the complex forms of the dominant mountains in the background. The undeveloped and relatively flat areas in the foreground have less variation of form than the mountains that comprise the background, yet the curves of the unpaved roads in the view reveal some variety of form. The mountains in the background also have dominant curvilinear and fluid lines. The colors within the view predominantly are natural greens, browns, blues, and purples; the development in Mexico, the only other

man-made element besides the unpaved roads, appears blue and purple in the haze of distance. The textures within the view generally are smooth due to the distance of the viewer from the main elements; the surfaces within the view, however, are more natural than hard, and textural variety is visible.

The scale of the visual environment of Key View 4 is large and monumental and the view is expansive and open. While not highly complex, it also is not monolithic. Pattern elements are consistent and harmonious, and the view generally is balanced between background and foreground elements. The open, natural character of the area is reinforced by the contrast with the extensive development on the Mexican side of the border.

The expansive flat areas and dominant mountains that are the main elements in this view are distinct components with visual power and memorability. The view has few encroaching elements and the elements in the view generally are visually coherent and the view is compositionally harmonious as a whole, although the contrasting road detracts slightly from the unity of the view as a whole. Overall, Key View 4 has high visual quality.

Key View 5

Key View 5 (Figure 3.9-12, *Key View 5/Simulation 5*) was taken from the center of Sanyo Avenue, north of Airway Road, looking north. The visual environment of Key View 5 generally is geometric and rectilinear. There are few building elements present in the view, yet most of the elements within the view are introduced rather than natural. Examples include the flat road, the manufactured slopes associated with business park and light industrial development, the commercial signs on the right the graded areas in the background. The view generally is composed of hard surfaces and smooth textures, including the surface of the road and sidewalks, the even surface of the graded areas in the background, and mowed lawn. Trees provide variety of form, line, color, and texture, and are prominent elements in the view that contrast with the smooth, manufactured surfaces in the view. Man-made elements are dominant.

The overall scale of the view is large, due mainly to the perspective of the roadway and the expanse visible to the left and in the background. The sidewalks and trees visible in the view are human-scale elements that render the view not quite monumental in scale. Key View 5 has diverse elements, including landscaping and commercial signage. These elements are not highly complex; neither are they highly harmonious. The undeveloped areas contrast with the developed slopes and landscaping, and with the smoothly-graded area in the background. The view is somewhat balanced, split between developed and undeveloped areas; however, the landscaped areas and the roadway are more dominant features.

The combination of elements comprising this view does not create a distinct visual pattern. The hills in the background are the most memorable elements, but are not dominant. Overall, vividness is moderately low. There are no encroaching elements within the view, and the developed and undeveloped areas are distinctly separated, with little visual coherence; intactness of the view is moderate. The elements are not harmoniously composed, and the unity of the view is moderately low. Overall, Key View 5 has moderately low visual quality.

Key View 6

Key View 6 (Figure 3.9-13, *Key View 6/Simulation 6*) was taken within proposed project R/W north of Airway Road, south of Otay Mesa Road, and east of Sanyo Avenue, looking west. The character of Key View 6 is geometric and symmetrical; dominant structures in the view are the boxy, white, light industrial buildings on the parcels in front of and below the viewer. The slope in the foreground and the manufactured slope to the viewer's left also are simple and smooth. Similarly, the view is composed of rectilinear and rigid lines. Trees and vegetation near the buildings somewhat soften the edges of the

paved areas and the structures, and the dark green trees extending through the center of the view provide a contrasting element to the developed lots on either side, along with the brown vegetation in the foreground which offers some textural variety.

The scale of Key View 6 generally is large; each of the elements that comprise the view is big. The scale of the view is limited by the foreground elements, however, which confine views to the periphery. Although the diversity of elements is not high, the compositional arrangement of elements is not highly harmonious. The view is generally open.

The view has no highly memorable elements and the buildings and open spaces do not combine to create highly memorable patterns. The arrangement of the elements is typical of the area. Large buildings and associated large parking lots are located next to undeveloped lots, with landscaping around the edges. The landscaping does not extend to all lots in the area, and although there is nothing that visually encroaches on any elements in the view, intactness is not high because of the mix of visible developed and undeveloped lots. There is visual coherence between and among the elements, and although the compositional harmony is not unique or memorable, it is unified by the similar type of development visible. As a result, the unity of the view is moderately high. Overall, Key View 6 has moderately low visual quality.

Additional Key Views

The preceding primary key views represent typical views seen by the most viewers and the primary viewer groups and represent those key views selected for visual simulations. Additional key views that represent potential changes to the visual environment are discussed below.

Enrico Fermi Drive (Key View 7)

Enrico Fermi Drive extends north-south and is the only north-south roadway that connects Otay Mesa Road and Airway Road between Sanyo Avenue and Alta Road. Enrico Fermi Drive slopes upward to a high point approximately half way between Otay Mesa Road and Airway Road. The existing visual environment primarily consists of a two-lane road through a mostly undeveloped area. The east side of the road is recently graded, and street trees and a sidewalk have been installed along the roadway (see Key View 7, Figure 3.9-14, *Key Views 7 and 8*).

Views along the road include the road and undeveloped areas on each side, as well as a high horizon line created by the hill over which Enrico Fermi Drive extends. Geometric forms and strong perspective lines are present, including the dark gray color and smooth texture of the roadway, and the green and brown earth-tones of the bordering vegetation. The diversity of the visual environment is relatively low, consisting mostly of the road and vegetation bordering it, with no dissonant elements. There are generally no prominent visual elements, and although the developed and undeveloped lots on each side of the roadway contrast, they are symmetrically arranged within the view. Peripheral views to the east and west are available from Enrico Fermi Drive, particularly near the high point, and viewers can see the mountains east of Otay Mesa, which are vivid features, but not dominant in northward and southward views.

The visual elements have visual coherence and are somewhat harmonious, although the inconsistent development patterns leave discontinuous open space areas. The visual integrity of the area is moderate for this reason, although there are no elements visually encroaching into the area. Despite the nearby vivid mountains in the east, northward and southward views along Enrico Fermi Drive have few memorable elements or distinct visual patterns. Overall, these views have moderate visual quality and character.

Light Industrial Areas Accessed via Sanyo Avenue (Key View 8)

Proposed SR-11 near the SR-905/SR-125/SR-11 Interchange extends between light industrial parcels developed with buildings, parking lots, auxiliary structures, and landscaping (visible in Key View 6, Figure 3.9-13, discussed above, and Key View 8, Figure 3.9-14). The parcels are accessed via driveways that intersect with Sanyo Avenue, and from Dornoch Court and Carnoustie Road. The driveway of the parcel immediately south of the proposed SR-11 R/W is visible on the right side of Key View 5, Figure 3.9-12.

The visual environment on these light industrial parcels is dominated by large, white or light gray, geometric buildings with rectilinear lines and smooth surfaces. The buildings are approximately 30 feet tall, with some taller features visible in some locations (such as the storage tanks on the south side of one building). Small trees are spaced regularly among the parking spaces in the parking lots. The western side of each parcel slopes down toward Sanyo Avenue and is landscaped with lawn and trees, and in some places dense shrubs also are planted along the upper edge of the slope. A drainage area is vegetated with dense green shrubs up to approximately eight feet tall, and supports some taller, dark green pine trees. Some taller trees also are located next to the sides of the buildings.

The buildings and parking lots comprise bulky visual elements within these parcels. The trees and shrubs lessen the visual scale of the buildings to some extent, but the overall visual environment is large-scale. The vegetation also provides variety and articulation where the buildings would otherwise be monolithic and monotonous. The vegetation, however, does not create a harmonious scene and the continuity of the visual environment within these lots is moderate. The buildings remain prominent features, and the visual environment is not highly balanced.

The area has little vividness or memorability; the buildings are standard light-industrial tilt-up concrete buildings with few distinguishing features, and the landscaping does not create distinct visual patterns. The parcels do have moderately high visual intactness as there are few other elements that encroach into the area. Because the vegetation does not combine with the structural elements to create a harmonious visual composition, overall the visual coherence and harmony of the area, and the resulting unity of this view, is moderately low.

Otay Mesa Road (Key View 9)

Otay Mesa Road is approximately one-quarter mile north of the project site. Some portions of the road are not within the project viewshed (Figure 3.9-7) due to topography that blocks views toward the south. Most viewers on Otay Mesa Road would be traveling east and west, with peripheral views to the south. Refer to Key View 9, Figure 3.9-15, *Key Views 9 and 10* for a view southward from Otay Mesa Road in the vicinity of Enrico Fermi Drive. This view also is representative of views available from the portions of the residential properties north of Otay Mesa Road. Visual character and quality along this stretch are similar to those described for Key View 1 and Enrico Fermi Drive, discussed above, which have moderately high and moderate visual quality and character, respectively.

CVEF and Border Entry at New POE (Key View 10)

The site of the proposed CVEF and POE currently consists of undeveloped land (see Key View 10, Figure 3.9-15). The area is mostly flat or has gentle topographic variations, and is covered with low-growing vegetation, rendering views expansive. The vivid San Ysidro Mountains and foothills are visually dominant. The existing double fence at the border is a dominant feature when looking south. Some of the large buildings in the densely developed area of east Tijuana, Mexico are visible through and

beyond the fence. The open, natural character of the site is reinforced by the contrast with the fence and extensive development in Mexico.

There currently are very few viewers in the area. The general public has little reason to explore the unpaved roads east of the developed areas of Otay Mesa. As a result, U.S. Border Patrol agents are the most common viewers present at this time. Refer to Key Views 1 and 3, discussed above, for information related to similar visual quality. These key views have moderately high and high visual quality and character, respectively.

Additional Visual Considerations

SR-905 Modifications to Accommodate SR-11 Connections.

The portion of SR-905 that would be modified west of the SR-905/SR-125/SR-11 Interchange extends between industrial, commercial, and institutional (Southwestern College satellite campus) land uses, and vacant lots that are aligned with their main access focused toward streets north and south of the R/W. The visual environment of this area is similar to other developed portions of Otay Mesa in that it mainly consists of large boxy buildings surrounded by parking lots, multiple vehicles, and sparse landscaping (refer to Key View 6, Figure 3.9-13 and Key View 8, Figure 3.9-14, discussed above). These key views have moderately low visual quality and character.

Toll Road Facilities

Toll-road facilities (e.g., toll verification equipment on overhead structures) would be located along the roadway at the proposed Siempre Viva Road Interchange (Key View 3, moderately high visual character and quality) and Enrico Fermi Drive Interchange (Key View 2, moderately low visual quality and low visual quality), as well as within the additional view from Enrico Fermi Drive (moderate visual quality and character). The reader is referred to text addressing those Key Views for existing conditions information related to visual quality and character.

Retaining Wall at Siempre Viva Road

A concrete retaining wall of approximately 415 feet in length would run between the eastbound and westbound passenger lanes, gradually rising from about 3 feet in height just north of the easternmost SR-11 toll plaza (north of the proposed POE) to approximately 20 feet high at the Siempre Viva Road overcrossing bridge. This wall would be located just west of Key View 3. The reader is referred to text addressing Key View 3 for existing conditions information related to visual quality and character.

Detention Basins

Several detention basins would be included within the proposed R/W. One would be located north of proposed SR-11, east of the industrial buildings at Sanyo Avenue (near the location of Key View 6). Three others would be located south of the highway - one west of Alta Road, one between Alta Road and the Siempre Viva Road Interchange, and one southwest of the Siempre Viva Road Interchange. A fifth basin potentially would be placed in the area between the passenger lanes and the commercial lanes, directly northwest of the Siempre Viva Road Interchange overcrossing. Representative information related to visual character and quality is described for Key View 1 (south of Alta Road with moderately high visual quality and moderate visual character), Key View 3 (the site of the POE with high visual quality and moderately high visual character), and Key View 6 (east of Sanyo Avenue with moderately low visual character and low visual quality).

3.9.3 Environmental Consequences

Using the Affected Environment discussion as a baseline, visual impacts are determined by comparing the existing visual environment to the post-construction visual environment and determining whether project-related physical changes would be incompatible or degrade existing visual resources. This is done by an objective assessment of visual resource change resulting from project implementation combined with anticipated viewer response to that change. Detailed discussion of predicted viewer response is provided in the project VIA.

Preferred Alternative and Draft EIR/EIS Build Alternatives

As discussed in Chapter 2.0 of this document, several alternatives and design variations are being evaluated for the proposed project. The following impact analysis focuses on the largest and potentially most impactful alternative being proposed. Discussion of the other alternatives follows.

As stated above, no officially designated state scenic highways or County priority scenic routes are in the area. The proposed project, therefore, would not affect any current scenic routes.

Preferred Alternative

Upon consideration of agency and public input received during the Draft EIR/EIS public review process, a Preferred Alternative was developed that is based on the Two Interchange Alternative with the SR-125 Connector Variation, which is described in the following section. New or changed features that were not evaluated in the VIA are described and analyzed below.

1. At the southeastern edge of the POE, the Preferred Alternative has been designed to reduce impacts to sensitive vegetation and steep slopes by moving the southeastern boundary to the west, compared to the Draft EIR/EIS build alternatives.
2. The staff access road from the CVEF to the Siempre Viva Road half interchange included in the Two Interchange Alternative would be upgraded to also allow northbound commercial vehicles to leave the CVEF and access Siempre Viva Road directly, without accessing SR-11. As a result, the Preferred Alternative in this area would represent something of a hybrid of the Two Interchange Alternative (with a half interchange at Siempre Viva Road) and the Siempre Viva Road Full Interchange Variation, both of which were analyzed in the Draft EIR/EIS. Unlike the full interchange variation, the Preferred Alternative design of this interchange would not include the two loop ramps allowing southbound access from Siempre Viva Road into the POE and the third loop ramp allowing northbound passenger-only traffic from the POE to access Siempre Viva Road. Compared to the Two Interchange Alternative, the westbound access to SR-11 from Siempre Viva Road under the Preferred Alternative would be located farther north, at the intersection of the commercial vehicle exit road from the CVEF to Siempre Viva Road. As a hybrid of the half and full interchange versions of the Siempre Viva Road Interchange, the Preferred Alternative's footprint would be smaller than the full interchange but larger than the half interchange.
3. In the Sanyo Avenue area, the easements on either side of the SR-11 alignment would be wider than those identified for the Two Interchange Alternative.
4. Small drainage easements would be added on the north and south sides of SR-11 just east of the Enrico Fermi Drive Interchange.

5. The SR-905/SR-125/SR-11 Interchange would differ slightly from that identified under the Two Interchange Alternative with the SR-125 Connector Variation. The southbound SR-125 to eastbound SR-11 connector and the southbound SR-125 to eastbound SR-905 connector would be redesigned, so that the SR-125 flyover would be smaller. In addition, the planned westbound off-ramp from SR-905 to La Media Road and the westbound SR-11 off-ramp to La Media Road would be slightly different from those identified under the Two Interchange Alternative with the SR-125 Connector Variation.
6. On the eastern edge of the SR-905/SR-125/SR-11 Interchange, a 69kV power line would be re-routed, placed on new, taller steel poles to allow vertical clearance over the SR-11 and SR-125 connectors below, and relocated on new foundations in permanent utility easements outside of the highway R/W.
7. A conceptual design has been identified for the relocation of the 30-inch high-pressure gas line that is currently located along the southern boundary of the POE site. The design shows the worst case scenario of relocating the gas line around the perimeter of the POE; a more direct route through the POE site may be identified in the future.
8. Additional conceptual design information has been developed regarding the potential locations and sizes of detention and/or retention basins.

The new and changed project features in the Preferred Alternative generally are all similar to or reduced in visual prominence, when compared to the Two Interchange Alternative with the SR-125 Connector Variation and the Siempre Viva Road Full Interchange Variation, previously evaluated in the VIA and Draft EIR/EIS. The only exception is the raised height and relocation of the 69 kV power lines and two power poles. The described visual impacts for the Two Interchange Alternative, SR-125 Connector Variation and Siempre Viva Road Full Interchange Variation, therefore would also apply to the Preferred Alternative (refer to the analysis below). Additional moderate visual impacts would result from the 69kV power line and steel poles which were not previously evaluated for visual impacts. The power line crossing above SR-11 would result in a moderate visual impact and the tall steel poles would introduce new vertical elements that would moderately detract from the overall visual quality in the area.

Two Interchange Alternative

Currently developed areas with local roadways and undeveloped open space would have a new highway with associated interchanges, walls and grading, and a CVEF and POE with buildings, roadways, and associated facilities. Project implementation would result in noticeable changes between existing and post-project views. Changes to the visual environment, as well as the overall visual effect/aesthetics of the project, are discussed in the following analysis. Photo simulations illustrate the engineering elements of the project so the reader can track the discussion of the proposed change to the visual elements (scale, dominance, etc.) without having those elements obscured by screening vegetation. Photo simulations of structures do not reflect their final design, and are for visual example only. Project planning currently includes highway planting for erosion control purposes such as irrigated project slopes hydroseeded with drought tolerant shrubs and ground cover to provide soil stability and reduce runoff. Further landscape design would be developed to incorporate any necessary mitigation measures resulting from project impacts, and is anticipated to continue themes and aesthetic characteristics established for the SR-905 corridor.

Key View 1

Proposed project features visible in Key View 1 are illustrated in Simulation 1, Figure 3.9-8. The most visible portion of SR-11 would be the manufactured slopes (up to 20 feet tall) and associated planting on

either side of the roadway. The proposed CVEF and POE would be located southeast of the location from which the picture was taken, and some portions of some of the buildings in the CVEF and the northeastern portion of the POE would be visible from Key View 1.

The proposed project would introduce highly contrasting elements into a view that currently is undeveloped land and open space; the level of change to the visual resources of the area would be moderately high. The viewers of the area, though few in number, would have a moderate level of response. The resulting visual impact to Key View 1 would be moderately high.

Key View 2

The proposed project as seen from a point within the proposed SR-11 R/W slightly west (into the visible slope) of the existing Key View 2 photograph is simulated in Simulation 2, Figure 3.9-9. The Two Interchange Alternative would introduce proposed SR-11, manufactured slopes approximately 18 to 25 feet high, the proposed Enrico Fermi Drive overcrossing and entrance and exit ramps, and would remove existing natural and introduced elements.

The Two Interchange Alternative would change the visual environment of the area represented by this key view. Nonetheless, the visible features of the Two Interchange Alternative, though different in composition from existing conditions, would have similar character and quality. The change between the existing and proposed view would be moderately low. Viewers of this area would have a moderate response to change in the visual environment. The resulting visual impact to Key View 2 would be moderately low.

Key View 3

The proposed project would replace the open space visible in Key View 3 with highway and interchange features (see Simulation 3, Figure 3.9-10). Key View 3 corresponds to a northbound lane in the proposed SR-11 alignment and would include highway lanes, the proposed Siempre Viva Road Interchange and overcrossing, and a loop ramp.

Proposed project features that would be visible in Key View 3 would create a moderately high change to the visual character of the area, but the resulting visual quality of the new features would be similar to existing conditions. Combining the changes to visual character and visual quality results in a moderate level of change. Viewers would have a moderate response. The resulting visual impact to Key View 3 would be moderate.

Key View 4

The elements of the proposed project that would be visible in Key View 4 would be in the middle-ground of the view, rather than the immediate foreground. Where SR-11 would curve from an east-west alignment to extend southeastward toward the proposed POE, a portion of SR-11 would be visible in Key View 4. The Siempre Viva Road Interchange would be visible in the center of the view, in front of the viewer, and portions of the CVEF and POE would be visible on the right side of the view. These elements are depicted in Simulation 4, Figure 3.9-11.

The proposed project elements, particularly the structural elements in the CVEF and POE, the interchange structures, and the visible portion of the grading for the roadway, would highly contrast with the surrounding currently undeveloped area. Introduction of these features would cause a moderately high level of change to the existing visual resources. The viewers in the area, though few in number, would

have a moderate level of response to changes in views. The resulting visual impact to Key View 4 would be moderately high.

Key View 5

Proposed SR-11 would extend between lots immediately abutting Sanyo Avenue, and would cross over Sanyo Avenue. Due to the difference in elevation, the roadway would be supported to the west of Sanyo Avenue by slopes facing north and south. The undercrossing structure and slopes supporting the roadway would be visible from Key View 5, as illustrated in Simulation 5, Figure 3.9-12. Walls supporting proposed SR-11 east of Sanyo Avenue would not be visible from Key View 5.

The proposed project roadway, overcrossing, and slopes would have features similar to those currently existing, and although the new elements would increase the scale of the view and encroach on the visual environment of Sanyo Avenue, introduction of these features would cause a moderately low level of change to the existing visual resources. The viewers in the area would have a moderate level of response to changes in the views. The resulting visual impact to Key View 5 would be moderate.

Key View 6

The new roadway is simulated in Figure 3.9-13. The surface of the road would extend to the left and right of the viewer, as well as in front and away from the viewer; it would be at an elevation above the parking lots, slightly below the top of the buildings, and approximately the same as the top of the trees visible between the buildings in the existing key view.

The proposed project would replace views of existing undeveloped lots and vegetation growing between existing buildings with a roadway and associated features. Although the proposed roadway as seen from Key View 6 would have low visual quality and memorability, and would contrast with and encroach on the surrounding area, the existing view does not have high visual quality. The resulting change to the visual character and quality of Key View 6 would be moderate. Viewers of Key View 6 have a moderately high response to changes in the visual environment. The resulting visual impact to Key View 6 would be moderate.

Additional Key Views

Enrico Fermi Drive (Key View 7). Refer to Key View 7, Figure 3.9-14. The proposed project includes an overcrossing at Enrico Fermi Drive (Enrico Fermi Drive would cross over SR-11). The Two Interchange Alternative would have on- and off-ramps extending from the overcrossing to each side of the highway. Proposed SR-11 would cross under Enrico Fermi Drive at approximately the existing highest point along Enrico Fermi Drive. From north and south of the project site, Enrico Fermi Drive would appear to continue uninterrupted in front of the viewer (the elevation of the roadway may be slightly lower, but the change would not be highly discernable). The junction of the proposed interchange ramps with Enrico Fermi Drive would be the most visible aspect of the interchange. Viewers on Enrico Fermi Drive would see the intersection signals or signs, and the top of the proposed ramps. The ramps would slope downward on either side of Enrico Fermi Drive in the peripheral view. The top of the slopes on the opposite side of the freeway would be visible on either side of the overcrossing. The proposed features would not block views to the mountains in the east, and would not extend above the horizon line.

The visual quality of the area around Enrico Fermi Drive would be similar to the existing visual quality. Viewers in this area generally would be motorists on Enrico Fermi Drive. Viewer exposure and sensitivity would be moderately low. New highway features would be large in scale and potentially dominant, but would not be highly visible. Changes to views along Enrico Fermi Drive would be

minimal. The low level of change to the visual environment near Enrico Fermi Drive in combination with the moderately low viewer response would suggest that the proposed project would create a moderately low visual impact in this area.

Light Industrial Areas Accessed Via Sanyo Avenue (Key View 8). Proposed SR-11 near the east side of the SR-905/SR-125/SR-11 Interchange would extend between light industrial parcels which are developed with buildings, parking lots, auxiliary structures, and landscaping. Proposed SR-11 would narrow to minimize the footprint that would overlap these parcels. The surface of the roadway would be higher in elevation than the surrounding lots and would be supported by retaining walls varying from approximately 16 to 26 feet high, beginning immediately east of Sanyo Avenue and extending approximately 1,250 feet to the east. The proposed retaining walls would cause the greatest amount of change to the visual environment of the parcel east of Sanyo Avenue and south of Carnoustie Road, illustrated in Key View 8 Figure 3.9-14. The visual quality of the parcel would be low, and the change from the existing visual environment would be high. The viewers of the proposed project and retaining wall that are present in this area would be workers in the buildings and patrons of the businesses, including truck drivers accessing the warehouse loading bays at the back of each of these buildings. Viewers in the area have a moderate exposure and sensitivity.

The proposed project would introduce features that would cause a high level of change to the visual character and quality of the visual environment of the light industrial parcels near Sanyo Avenue, particularly through the removal of vegetation and the introduction of a large retaining wall face. The viewers in the area would have a moderate response to changes in the area. The resulting visual impact would be moderately high.

SR-905 Modifications to Accommodate SR-11 Connections. The current design of SR-905 (under construction) overlaps a portion of Harvest Road between Airway Road and Otay Mesa Road. The approved alignment is planned to extend midway between Airway Road and Otay Mesa Road, westward from Harvest Road. The approved alignment also includes a connection to SR-125. Proposed SR-11 would include connections to approved SR-905 and modifications to the approved alignment to accommodate those connections (refer to Figure 2-3, *Comparative Overview of the Draft EIR/EIS Build Alternatives*, and Figures 2-10a and 2-10b, *Major Project Features West of SR-905/SR-125/SR-11 Interchange [All Build Alternatives]* in Chapter 2.0). Additionally, the portion of Harvest Road south of proposed SR-11 and north of SR-905 would no longer be used. An off-ramp to La Media Road from the SR-11 connector also would be added on the northwestern quadrant of the interchange. These additions would be similar in appearance to the proposed SR-905/SR-125/SR-11 Interchange, and most of the modifications to accommodate SR-11 connections would not cause noticeable change.

Some of the modifications to approved SR-905 west of the interchange would occur in the highway median. The addition of more pavement in the center of the highway would not increase the visual prominence or potential impact of the highway, and there would not be noticeable changes to the design of the highway when viewed from the businesses north and south of the R/W. Less area would be available for planting in the median; however, this change would be only slightly noticeable to viewers traveling along the highway because some unpaved areas would remain visible in the median.

Other modifications to SR-905 would include the widening of the eastbound side of SR-905, between La Media Road and the SR-11 connector by up to 12 feet, and the widening of the westbound side of SR-905 in the same area by up to 24 feet. In addition, the southern (eastbound) connector would follow the approved off-ramp alignment for some of its length, but would curve approximately 110 feet further south, between SR-905 stations 627+00 and 641+00. These modifications would be similar in appearance to the approved SR-905 alignment, although they would introduce more pavement and reduce the landscaped areas. The difference would be most noticeable to viewers traveling along the highway,

and less so for patrons and employees of nearby businesses. Overall, the modifications would increase the change to the visual environment caused by approved SR-905. This change would not be mitigable due to the loss of area available for highway planting. The change would have a moderate visual impact.

The portions of Southwestern College that could require a noise attenuation barrier are outdoor sports fields abutting the SR-905 R/W. The fields provide generally open southward views from the highway toward the buildings on the college campus. South and northward views are more limited west of the college where the R/W extends between light industrial parcels. These areas consist of large, geometric buildings surrounded by expanses of pavement and minimal landscaping. An undeveloped lot is located immediately north of Southwestern College, on the other side of the SR-905 R/W, and provides extensive northward views. The parcel east of the undeveloped lot is a commercial area with a variety of elements such as vehicles, buildings, landscaping, and signs.

The potential 10-foot-high noise attenuation barrier would be placed at the edge of the southern shoulder of SR-905 along the Southwestern College property. The barrier would be approximately 591 feet long. If constructed, the barrier would be a tall, geometric element that would be visually unique in the area. It would be located closer to the road than any other structure in the vicinity, and would restrict southward views from SR-905. This large-scale element would cause a moderately high level of change in the visual environment of SR-905 near Southwestern College.

SR-905 supports a high volume of traffic, indicating that viewer exposure in this area would be high. Viewers' sensitivity would be moderately low; the area is developed, although some extensive views are available, including views of the mountains east of Otay Mesa. The moderately high level of change caused by the potential noise attenuation barrier in combination with the viewers' high exposure and moderately low sensitivity suggests that the noise attenuation barrier would have a moderately high visual impact.

Otay Mesa Road (Key View 9). Proposed SR-11 generally would be lower than the existing topography, and the most visible feature of the proposed project from Otay Mesa Road would be the top of the slopes on the south side of SR-11 (primarily visible as a new horizontal line to the south). West of Sanyo Avenue, SR-11 would be elevated above the neighboring parcels. The slopes north of SR-11 would face Otay Mesa Road in this area, and would be visible as new manufactured slopes planted with groundcovers and shrubs for erosion control. The new roadway would not extend above the horizon line, and would not be a dominant feature in southward views from Otay Mesa Road.

The proposed retaining walls east of Sanyo Avenue would not be visible from Otay Mesa Road, as the existing buildings would block views toward the wall. None of the visible features of the proposed project would be dominant or cause a high level of change in the visual environment of the road. The resulting visual impact would be low.

The proposed CVEF and POE would be visible from the eastern end of Otay Mesa Road where it terminates at Alta Road. The views from this area would be similar to those discussed in the evaluation of Key View 1, except the viewer would be slightly farther from the proposed features. The proposed project would have a moderately high impact on the visual environment of Key View 1; the impact from the eastern end of Otay Mesa Road would be moderately high. Refer to Key View 9, Figure 3.9-15.

CVEF and Border Entry at New POE (Key View 10). The existing site of the proposed CVEF and POE currently consists of undeveloped land east of Otay Mesa, with very few viewers. Refer to Key View 10, Figure 3.9-15. The proposed CVEF and POE would be viewed by many more people when completed, however, and would be the first thing visible upon entering the U.S. from Mexico at the proposed crossing. Although the detailed design of the new POE and CVEF is currently being developed as part of the PDS being prepared by GSA, the conceptual design indicates that elements of the CVEF and POE

would not be wholly harmonious or coherent. The diverse elements generally would be geometric, rectilinear and rigid, gray or neutral toned with few naturally colored accents, and would have smooth or manufactured surfaces, as opposed to softened with natural materials or plants. The combination of these elements would create a complex, often dissonant visual environment with few dominant features. The diverse elements would have moderately low intactness and visual integrity due to the low unity and coherence. Vividness of the facility would vary depending on a viewer's experience, although the visual elements of the site would not create distinct visual patterns. The visual experience is not expected to be highly memorable beyond a somewhat overall "chaotic nature," resulting from cars positioning in lines and staff moving between them. Overall, the visual quality of the CVEF and POE would be low.

The mountains to the east would be visible between buildings and facilities, but their dominance and vividness would be lessened. The change to the visual character and quality of the CVEF and POE site would be high. Currently there are few viewers present, however, and most are not focused on the existing view. The resulting impact to the visual environment of the CVEF and POE site would be moderately high.

Additional Aesthetic Features

Toll Road Facilities. Proposed SR-11 would include automatic toll verification equipment and a toll administration building and parking lot at the northeastern corner of the POE site, near the Siempre Viva Road Interchange. The toll verification equipment would be placed on overhead structures constructed of large steel columns and approximately the same height as roadway overcrossing structures (refer to Figure 2-18 in Chapter 2.0). The toll administration building and parking lot would be visually similar to (and not highly distinguishable from) the POE facilities. Depending on the placement of the automatic toll verification structures, they may be visible from the surrounding area, particularly where proposed SR-11 would be at the same elevation as or higher than the surrounding area; e.g., at the eastern or western ends of the proposed alignment. Although they would be narrow, their height may draw attention to the roadway. They would be visually associated with the roadway, however, and would contribute only incrementally to the level of post-project visual change to the surrounding area. The resulting visual impact would be moderately low.

Retaining Wall at Siempre Viva Road. Due to its length and ultimate height, the proposed retaining wall would be a visually dominant, hard-surface, gray, large-scale element that would have low visual continuity with the surrounding area.

Detention Basins. The project detention basins would be rectilinear or curvilinear areas graded to a lower elevation than the proposed roadway and surrounding grades. Basin slopes would be of a uniform 2:1 steepness. Because the basins would be lower than the surrounding grades, they generally would not be visible from surrounding areas, such as Alta Road (see Key View 1, Figure 3.9-8), Airway Road (see Key View 4, Figure 3.9-11 and Key View 7, Figure 3.9-14), or Otay Mesa Road (see Key View 9, Figure 3.9-15). The basins may be visible, however, from proposed SR-11. Motorists and passengers on the new roadway would see basin slopes and, from some points, may see the bottom of the basins. These views of the basins would be peripheral to travelers' main line of sight. The basins would not blend with the generally undeveloped grasslands abutting the project, however, because although the basins would be hydroseeded with ground cover and shrubs for erosion control, they would retain uniform slopes. The resulting visual impact would be moderate.

Off-site Lonestar and Johnson Canyon biological mitigation sites. Off-site biological mitigation at these two sites would not be expected to result in adverse visual impacts. The purpose of these sites is to support native habitat and species, and the biological preservation of these sites would also represent a visual benefit, by preserving and enhancing existing views of native vegetation.

TSM/TDM Measures Incorporated into Build Alternatives

The proposed variations regarding TSM/TDM features common to all build alternatives may include visible facilities such as ramp metering and auxiliary lanes, as well as installation of cameras, monitoring facilities, and changeable message signs. Generally, these visual elements would be small and would not increase the level of change created by construction of the proposed project. The changeable message signs may be the most visible elements of this variation. The signs generally would be directed at the lanes of proposed SR-11, and while they may be visible at an oblique angle from areas outside the proposed R/W, they would not result in a high level of change. The resulting visual impact would be low.

Temporary Construction Period Impacts

The proposed project would be built in one phase over an approximate two- to three-year construction period. During that time, the construction of the proposed project would disrupt the visual character of the project area. Visible indications of construction on the roadways would contrast with existing conditions due to the introduction of new dominant elements, including newly cut or filled slopes, retaining walls, raw soil, stockpiled dirt and rocks and bridge formwork, signs, construction period fencing, construction equipment, and night lighting. Other visual disruptions may include detours and local street closures, with signs, equipment, and other visual indicators. Temporary visual disruptions could also occur at the proposed off-site Johnson Canyon and Lonestar biological mitigation sites for the project, where it is expected that up to a five-acre area could be disturbed to accommodate habitat creation and restoration efforts. While relatively temporary in nature and ultimately addressed through project design, construction would create a high level of change to the visual environment. The resulting visual impact would be high, but short-term.

One Interchange Alternative

Visual impacts of the One Interchange Alternative would be similar to those discussed for the Two Interchange Alternative. The interchange at Alta Road under the One Interchange Alternative would include two loop-style ramps and two diamond-style ramps; all the ramps would be on the eastern side of the overcrossing structure. This interchange mostly would be visible from Alta Road, as represented by Key View 1. Viewers at Key View 1 would see the overcrossing of Alta Road over SR-11, similar to that shown in Figure 3.9-8, as well as some portion of the ramps to the west of Alta Road. The ramps, like the roadway, generally would be at a lower elevation than the surrounding area, although the intersection of the ramps and Alta Road would be at the same elevation at Alta Road. The ramps would not cause a higher level of change to the visual environment of the area than SR-11 without the interchange and ramps at Alta Road discussed above.

The One Interchange Alternative would include a similar retaining wall to the wall proposed for the Two Interchange Alternative near the light industrial areas accessed off of Sanyo Avenue. The One Interchange Alternative would have one less auxiliary lane than the Two Interchange Alternative, and the retaining wall would therefore be 50 feet from the buildings, rather than 38 feet, assuming a 22-foot median. Although farther away, this wall would cause a high level of change to the visual character and quality of the visual environment of the light industrial parcels near Sanyo Avenue. The viewers in the area would have a moderate response to changes in the area, and the resulting visual impact would be moderately high.

No Interchange Alternative

Visual impacts of the No Interchange Alternative would be similar to those discussed for the Two Interchange Alternative. Under the No Interchange Alternative, no interchanges or associated ramps

would be constructed along SR-11. Similar to the other alternatives, SR-11 would have an undercrossing structure at Sanyo Avenue, and overcrossings at Enrico Fermi Drive, Alta Road, and Siempre Viva Road (at the northeastern corner of the POE). The design of the SR-905/SR-125/SR-11 Interchange, Otay Mesa East POE (including the potential future transit center site), and CVEF site would be the same under this alternative as those described above for the Two Interchange and One Interchange alternatives. The No Interchange Alternative would have impacts similar to those discussed above for the Two Interchange Alternative, with slightly less visual change to views represented by Key View 2.

Similar to the One Interchange Alternative, the No Interchange Alternative with a 22-foot median would include a retaining wall placed 50 feet from the buildings within the light industrial areas accessed off of Sanyo Avenue. The wall would cause a high level of change to the visual character and quality of the visual environment of the light industrial parcels near Sanyo Avenue. The viewers in the area would have a moderate response to changes in the area, and the resulting visual impact would be moderately high.

Variations on the Draft EIR/EIS Build Alternatives

No Toll Variation

The No Toll Variation would involve SR-11 operating as a freeway instead of a toll highway. The principal design difference under this variation would be the lack of toll-related structures such as toll administration facilities. This would slightly reduce the visual impact of the proposed SR-11 because the tall, overhead structures would not be included and the toll administration building near the Siempre Viva Road Interchange would not be built. Overall, this variation would have the same or slightly lower visual impacts as the Draft EIR/EIS baseline build alternatives.

46-foot Median Variation

The 46-foot Median Variation could apply to any of the Draft EIR/EIS build alternatives. Under the Two Interchange Alternative, the wider roadway would require a retaining wall east of Sanyo Avenue of the same height as would be required for the 22-foot median variation evaluated throughout the discussion above. The wall under the 46-foot Median Variation, however, would be placed in close proximity to the existing building north of the proposed R/W and east of Sanyo Avenue. It would require the relocation of the building's driveway and the tanks at the southeast corner of the building (these are visible in the center of Key View 6, Figure 3.9-13). The proposed retaining wall would be placed adjacent to (approximately 26 feet from) the building entrance. It would be a visually dominant, hard-surface, gray, large-scale element that would have no visual continuity with the surrounding area. It would encroach on the visual environment of the building and surrounding parcel, which would, as a result, have no visual unity or intactness. The wall may be visually memorable and therefore vivid, due to its large scale and placement, but the visual quality of the area would be adversely impacted. The wall would be in the immediate foreground for viewers in the area east of Sanyo Avenue; their awareness attention would be focused on the view of the wall, due to its highly visual placement and scale. The proposed variation on the Two Interchange Alternative would have a high visual impact.

The 46-foot Median Variation applied to the One Interchange and No Interchange Alternative also would require placement of the retaining wall closer to the building than with the proposed 22-foot median; however, these alternatives would require one less lane in each direction along SR-11 between Enrico Fermi Drive and the SR-905/SR-125/SR-11 Interchange. The wall, therefore, would not be placed as close to the existing building as under the same variation for the Two Interchange Alternative. It would be at a location similar to the Two Interchange Alternative with a 22-foot median (approximately 38 feet from the closest building; evaluated above in the Additional Views section) and would have a similar visual impact; i.e., the wall would cause a high level of change to the visual character and quality of the

visual environment of the light industrial parcels near Sanyo Avenue. Viewers in the area would have a moderate response to changes, and the resulting visual impact would be moderately high.

SR-905/SR-125/SR-11 Interchange Variations

The SR-905/SR-125/SR-11 Interchange ramp structures would be added to the previously approved interchange in this location, expanding upon a visual environment that is already planned to include multiple highway lanes and large concrete ramp structures. The interchange is located near the center of the proposed project alignment, within or near the more developed, urban areas of Otay Mesa. The addition of connectors and ramps for either the SR-125 Connector or the SR-905/SR-125/SR-11 Full Interchange variation would have similar visual characteristics as the existing structures, and would not adversely affect the visual quality of the surrounding urban area beyond the impacts already discussed. The proposed and previously approved ramps would be the tallest project features; they would be similar in height or slightly less than the height of the nearby industrial buildings. There are no roads or developed areas directly west of the proposed interchange site. The closest viewers west of the interchange would be on La Media Road or portions of Otay Mesa Road and Airway Road, and would be approximately 1,500 feet or farther away from the interchange (unless traveling on the proposed or approved roadway itself). Viewers would see the interchange structures in eastward-looking views, along with existing industrial buildings on Airway Road, Otay Mesa Road, and (further in the distance) Sanyo Avenue. The ramps and interchange structures would extend above the flat mesa and across views of the mountains (as do the existing buildings), but would not entirely block the mountains or extend higher than the horizon line created by the mountains. This moderate level of change combined with the low numbers of viewers would suggest that the ramp and interchange structures would cause a moderately low level of change to eastward views from west of the interchange.

SR-125 Connector Variation. The addition of ramps would result in visual character similar to the approved structures, and would not additionally affect the visual quality of the surrounding urban area. This variation, therefore, would cause a low level of change, and have a low visual impact.

SR-905/SR-125/SR-11 Full Interchange Variation. The addition of the connectors under the SR-905/ SR-125/SR-11 Full Interchange Variation includes a retaining wall that would be approximately 15 to 26 feet high and 150 feet long at the southeastern corner of the interchange, facing southeast. The wall would be part of the support structure for the westbound SR-905 to eastbound SR-11 connection, which would be elevated. Just west of the wall, the connection would consist of a bridge structure. The wall would be placed east of existing Harvest Road. This portion of Harvest Road would no longer be used after construction of the interchange; therefore there would be no future views to the wall from that road.

The wall would be located approximately 300 feet northwest of an existing power generation plant located between Harvest Road and Sanyo Avenue, and accessed via Sanyo Avenue. There are relatively few viewers at that location, and their attention presumably is focused inward, toward their place of business. Between the sparsely placed trees surrounding the power plant facility, the viewers at that location could see the wall as a portion of the larger interchange.

The wall would be located approximately 1,200 feet, or almost one quarter mile, west of Sanyo Avenue. Viewers on Sanyo Avenue would view the wall peripherally, and as part of the larger interchange and highway that would be introduced into the area (refer to the discussion of Key View 5, above).

The addition of the wall and the connector would not affect the overall visual character of the approved interchange, and would not additionally affect the visual quality of the surrounding area. The wall and ramps proposed by this variation, therefore, would cause a low level of change, and have a low visual impact.

Siempre Viva Road Full Interchange Variation. This variation would only apply to the Two Interchange Alternative, and would construct a full interchange at SR-11/Siempre Viva Road rather than the half interchange described under the baseline Two Interchange Alternative. The full interchange design would result in an overall wider highway footprint in the area. The number of structures, ramps, areas of pavement, and signage also would increase with the expansion of the highway footprint and the addition of structures to create a full interchange.

Although larger in scale and potentially less visually unified than the proposed baseline half interchange, the addition of loop-style ramps and facilities as proposed in the Siempre Viva Road Full Interchange Variation would have a similar visual character as the half interchange described under the baseline Two Interchange Alternative (refer to Key View 3). The new geometric, diverse and complex features would be large, and the overall view would appear monumental. The new elements, however, would all be visually related to the new highway and would have visual continuity with the highway. Project elements would contrast with the surrounding area; however, the surrounding area would no longer be visible, and the highway and interchange would comprise the entire view. That view would be much less open, and the new view elements would be large and dominant. This would result in a moderately high change to the visual character of the area. The new elements also would change the visual quality, but to a lesser extent because the resulting quality of the view would be comprised entirely of the new highway and interchange elements and the change would be moderately low.

The low number of existing viewers in this area have moderate exposure and sensitivity (refer to Key View 3 for a discussion of existing viewers in the area). The change to visual resources, therefore, as a combination of the change to the visual character and the change to the visual quality, would be moderate. In combination with the moderate viewer response, this moderate change to visual resources would result in a moderate visual impact. The full interchange at Siempre Viva Road, therefore, would be visually similar to the baseline half interchange at this location.

No Build Alternative

The No Build Alternative would result in implementation of local access ramps to/from Enrico Fermi Drive through the Sanyo Avenue area as part of the approved SR-905 project, as opposed to the above-described alternatives. Under the No Build Alternative, these local access ramps between SR-905 and Enrico Fermi Drive (including the elevated alignment east of Sanyo Avenue) still would be implemented, but the ramps would terminate at Enrico Fermi Drive. The moderately high changes to the visual character of the grassland areas near the eastern end of the built alternatives would not occur. The proposed undercrossing at Sanyo Avenue would be similar to that evaluated in Figures 3.9-12 and 3.9-13, and would have a similar moderate impact. Retaining walls supporting the extension east of Sanyo Avenue would be similar to those discussed above under Additional Views: Light Industrial Areas Accessed via Sanyo Avenue. The walls would cause a moderately high change to the visual environment of the light industrial areas east of Sanyo Avenue. Over time, as the area develops with primarily industrial uses in conformance with the EOMSP, the overall visual effect of the No Build Alternative would not differ substantially from the build alternatives; the area would be built out and would take on an industrial appearance. Although SR-11 would not be built, other local roadways would be constructed to serve the planned industrial uses in the area. An SR-11 alignment and CVEF and POE site may be reserved for longer term implementation, in conformance with the EOMSP.

3.9.4 Avoidance, Minimization, and/or Mitigation Measures

Preferred Alternative and Draft EIR/EIS Build Alternatives and Variations

Project landscaping would generally follow standard Caltrans design guidance, with additional measures as needed to address the specific circumstances of the proposed project. Implementation of the following measures would reduce visual impacts identified as low, moderate, moderately high, or high for the Preferred Alternative or any of the other build alternatives.

Highway Planting

V-HP-1: SR-11 Landscape Concept Plan. A landscape concept plan would be developed in consultation with the District 11 Landscape Architect, local community planning groups, City staff, County staff, and the Caltrans Project Development Team. The SR-11 Landscape Concept Plan would incorporate the measures listed below to reduce visual impacts. The Landscape Concept Plan would identify highway planting and non-living (mulches, rock blankets and other materials) landscape features that define the visual environment and articulate the landscape theme for SR-11. This measure would reduce impacts addressed in the discussions of Key Views 1, 2, 3, 4, and 5, as well as impacts seen from Enrico Fermi Drive, visual effects resulting from the POE, and the retaining wall between the POE and the Siempre Viva Road Interchange. It also would contribute to reducing the visual impact of the Siempre Viva Road Full Interchange Variation and the Preferred Alternative.

V-HP-2: To reduce impacts discussed in the discussions of Key Views 1, 2, 3, 4, and 5, as well as impacts seen from Enrico Fermi Drive, visual effects resulting from the POE, from the Siempre Viva Road Full Interchange Variation and the Preferred Alternative; the project would receive drought tolerant, low maintenance landscaping that is compatible with the appearance of the adjacent vegetative community and sustainable horticultural practices. Such landscaping will be compatible with Caltrans standard practices, which specify planting or seeding graded slopes with native species where feasible. All planted areas would receive irrigation. This measure would reduce impacts addressed in Key Views 1, 2, 3, 4, and 5, as well as impacts seen from Enrico Fermi Drive, and visual effects resulting from the POE, as well as from the Siempre Viva Road Full Interchange Variation and the Preferred Alternative.

V-HP-3: To reduce visual impacts in areas of the project characterized by ornamental landscaping (including those visible in Key Views 1, 2, 3, 4, and 5, as well as impacts seen from Enrico Fermi Drive, visual effects resulting from the POE, and impacts resulting from the Siempre Viva Road Full Interchange Variation), roadway landscaping that includes trees, shrubs, and groundcover would be installed.

V-HP-4: To reduce impacts in less developed areas within the limits of disturbance (eastern portion), such as those addressed in the discussion of Key View 4 and visual effects resulting from the POE, landscaping with trees and shrubs would be planted and mulch would be spread in planting areas. Areas of native species would include temporary irrigation systems (for at least five growing seasons) to aid in plant establishment and supplement deficient natural precipitation. This measure would reduce impacts addressed in Key View 4 and visual effects resulting from the POE.

Retaining Walls

V-RW-1: Architectural Surface Treatment. Architectural features, textures and colors would be used to mitigate the appearance of retaining wall surfaces and deter graffiti. Walls would incorporate architectural features such as pilasters and caps to provide shadow lines, provide relief from monolithic appearance, and reduce their apparent scale. The architectural surface treatment would follow a highway -wide theme as identified in the SR-11 Landscape Concept Plan (developed in consultation with

Caltrans District 11 Landscape Architecture) and utilize/adapt architectural features of the adjacent SR-905 project for continuity. This measure would reduce visual effects resulting from architectural features, such as the retaining wall between the POE and the Siempre Viva Road Interchange and the retaining walls in the Sanyo Avenue area under the proposed alternatives (particularly the 46-foot Median Variation).

V-RW-2: Retaining Wall/Barrier Planting Pocket. In areas where retaining walls must be placed in close proximity to and above the traveled way, space would be reserved between the wall and the safety barrier to include a planting pocket to reduce the impact of the visible height of the wall, up to six feet wide, with the concurrence of Caltrans District 11 Landscape Architecture and where feasible. Refer to Figure 3.9-16, *Conceptual Mitigation Measures*, for an example cross-section of a planting pocket between a barrier and retaining wall.

V-RW-3: Terraced Retaining Walls. Where site conditions permit, retaining walls over 15 feet in height would be divided into two separate structures sufficiently offset from one another to create a flat landscape planting area between the two. Refer to Figure 3.9-16 for an example cross-section of terraced retaining walls. This measure would reduce visual impacts addressed in the discussion of Key View 3, and those resulting from structures included in the Siempre Viva Road Full Interchange Variation and the Preferred Alternative.

V-RW-4: Mid-Slope Retaining Walls. Retaining walls would be located at mid-slope wherever possible to provide adequate area for landscape screening between the wall and the highway. See the cross-section in Figure 3.9-17, *Conceptual Mitigation Measures*, for an example of a retaining wall placed mid-slope. This measure would reduce visual impacts addressed in the discussion of Key View 3, and those resulting from structures included in the Siempre Viva Road Full Interchange Variation and the Preferred Alternative.

V-RW-5: Plantable Retaining Walls. Retaining walls that follow the contours of the topography and maintain a constant elevation at the top of wall would be used where appropriate. This type of wall would be visually compatible with surrounding terrain and provide room at the base for a landscape screening buffer. Figure 3.9-17 depicts an example plan and elevation of a terrain-contoured retaining wall. This measure would reduce visual impacts addressed in the discussion of Key View 3, and those resulting from structures included in the Siempre Viva Road Full Interchange Variation and the Preferred Alternative.

V-RW-6: Plantable Retaining Walls. Where Caltrans standard design crib walls may be recommended, MSE walls that utilize a stacking tray design, such as Evergreen walls, may be used to provide a landscaped surface that would blend with the surrounding landscape and reduce the potential visual impact of crib walls.

Overcrossing, Undercrossing and/or Bridge Structures

V-S-1: Structure design would be enhanced with architectural features and be consistent with design themes developed and identified in the SR-11 Landscape Concept Plan. Pedestrian lighting, widened sidewalks (five and one half feet to eight feet width), bicycle lanes, and other urban amenities on local street portions of structures would be provided to be consistent with local community values and goals, with the concurrence of Caltrans District 11 Landscape Architecture. This measure would reduce visual impacts resulting from structures addressed in the discussion of Key Views 2, 3, and 5, and those visible from Enrico Fermi Drive, as well as the proposed retaining wall between the POE and Siempre Viva Road Interchange, and included in the Siempre Viva Road Full Interchange Variation and the Preferred Alternative.

V-S-2: To reduce visual impacts of slope paving, such as discussed in relation to Key View 5, slope paving at undercrossings and overcrossings would be enhanced with texture to deter graffiti. Paving texture and color would be consistent with materials used on SR-905.

V-S-3: To reduce visual impacts of fences/barriers, such as protective fences/barriers along the sides of proposed SR-11 interchange ramps and elevated crossings, any solid, screening fences used on structures would be carefully coordinated with bridge aesthetics and architectural elements, with the concurrence of Caltrans District 11 Landscape Architecture and where feasible.

Median Barriers and Edge Barriers

V-MB-1: To preserve desirable views and reduce the visual scale of the highway facility, such as is visible in Key View 6, concrete median barriers, if used, would be sized appropriately to address safety concerns related to truck usage of inside lanes. Barriers would be colored and textured according to an approved SR-11 Landscape Concept Plan.

Manufactured Slopes/Grading

V-G-1: Slopes would be graded 2:1 or flatter to support highway planting and/or non-living landscape materials such as rock mulches as appropriate. Grading would utilize techniques such as slope rounding, slope sculpting, and variable gradients to approximate the appearance of natural topography. Per Caltrans policy, embankment slopes steeper than 4:1 would require an approved design exception.

Lighting and Signage

V-LS-1: Lighting and mileage/directional signs would be designed and coordinated comprehensively and as a complete package, either as free-standing elements or in conjunction with over/undercrossing structures and architectural features to create a unified design theme and clear driver information.

V-LS-2: Existing highway lighting and signage design themes identified for SR-905 would be continued along SR-11.

V-LS-3: Pedestrian lighting on all overcrossings would be uniform and conform to the SR-11 design theme.

V-LS-4: Soffit lighting would be provided on all undercrossings with pedestrian facilities.

V-LS-5: Electrical and signal equipment at ramp termini would be placed in visually unobtrusive locations.

Access Control Fences

V-AC-1: Where possible, access control fencing would be placed in visually unobtrusive locations of interchanges and bridges (e.g., near the edge of the R/W). It would be coated with black vinyl where appropriate.

V-AC-2: Retaining walls near R/W boundaries would be placed in such a way that they become access control, and an additional access control fence would not be needed. The “dead” spaces that occur between walls and fences would be avoided if at all possible by combining walls with fences.

Drainage and Water Quality Facilities

V-WQ-1: Concrete interceptor ditches would not be placed at the toe of slopes adjacent to pedestrian use areas. Alternatives such as subterranean drainage placed below finish grade or a planted geo-reinforced drainage surface would also be used with the concurrence of Caltrans District 11 Landscape Architecture and where feasible.

V-WQ-2: Concrete drainage devices located in non-landscaped areas would be colored (integral color concrete or by staining) to match the surrounding soil color.

V-WQ-3: Soft surface alternatives to concrete ditches and rock slope protection would be used wherever possible.

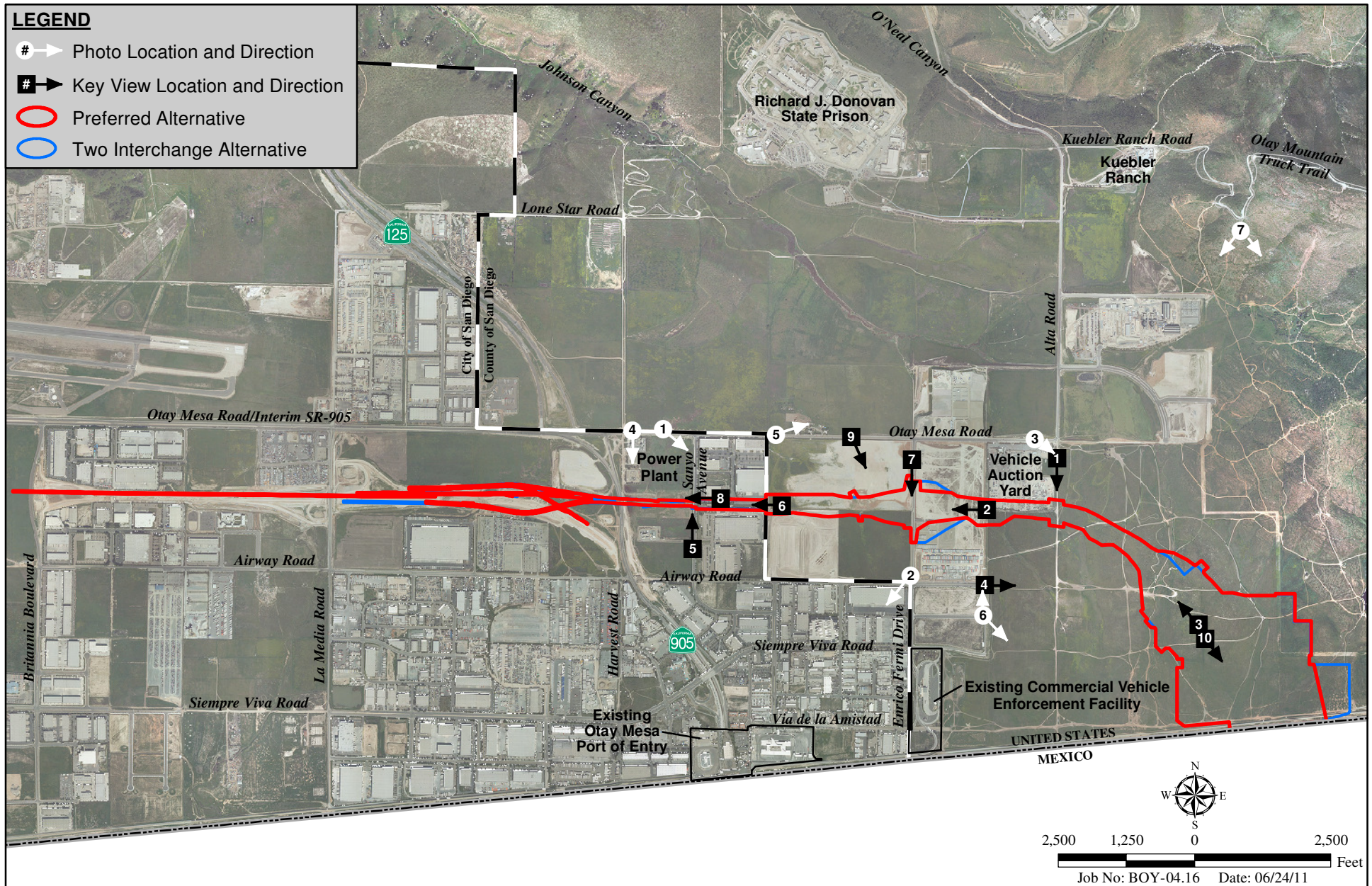
V-WQ-4: Detention basins and bio-swales in landscaped areas would be planted with visually and functionally compatible native or ornamental ground cover as appropriate, and shaped to mimic natural ponds and/or vernal pools in the area, where feasible. Final design of detention basins would be determined in consultation with Caltrans District 11 Landscape Architecture.

Power Poles

V-PP-1: New power poles finishes would be treated to fit in with viewshed elements and to reduce glare and reflection from the base steel finish with the concurrence of Caltrans District 11 Landscape Architecture.

No Build Alternative

No impacts were identified for the No Build Alternative. No project action would occur under the No Build Alternative; therefore, no associated avoidance, minimization, or mitigation measures would be required.



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Photo and Key View/Simulation Locations

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

Figure 3.9-1



Photograph 1*: View northeast to business park/light industrial development along Sanyo Avenue, north of project site



Photograph 2*: View southwest to business park/light industrial building and undeveloped lot at Enrico Fermi Place and Airway Road, south of project site

*Refer to Figure 3.9-1 for photo location and direction.

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Site Photographs 1 and 2

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

Figure 3.9-2



Photograph 3*: View southwest to auto auction yard at Otay Mesa Road and Alta Road, at the northeastern edge of the project study area



Photograph 4*: View southeast to power-generating station at Otay Mesa Road and Harvest Road, abutting the northwestern edge of the project study area

*Refer to Figure 3.9-1 for photo location and direction.

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Site Photographs 3 and 4

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

Figure 3.9-3



Photograph 5*: View northeast to residential lot north of Otay Mesa Road,
between Sanyo Avenue and Enrico Fermi Drive

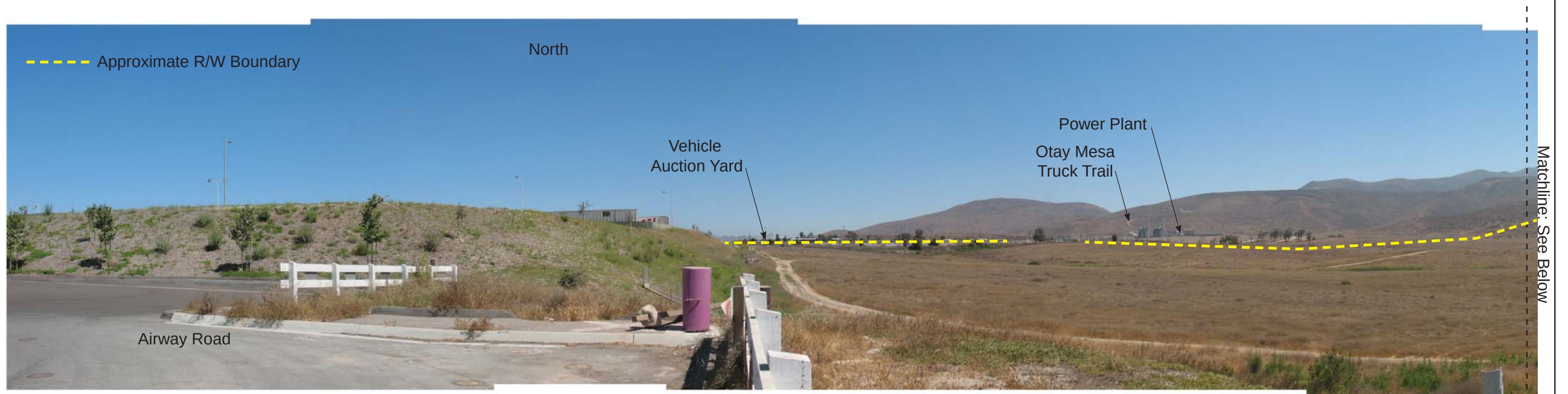
*Refer to Figure 3.9-1 for photo location and direction.

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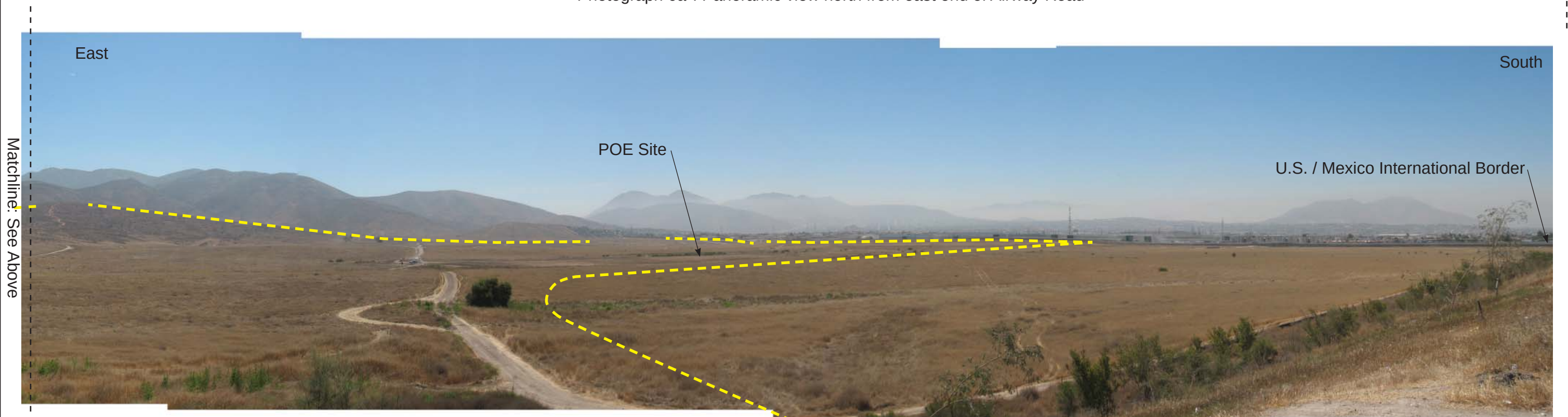
Site Photograph 5

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

Figure 3.9-4



Photograph 6a*: Panoramic view north from east end of Airway Road



Photograph 6b*: Panoramic view east and south from east end of Airway Road

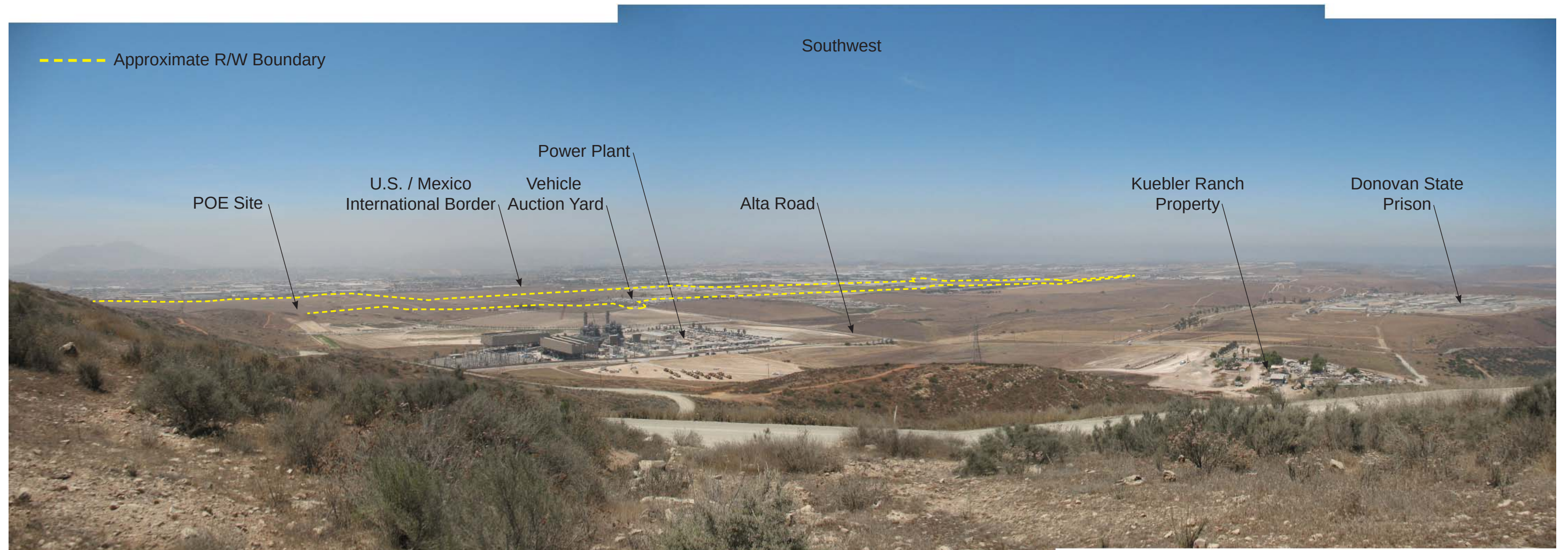
*Refer to Figure 3.9-1 for photo location and direction.

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Site Photographs 6a and 6b

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

Figure 3.9-5



Photograph 7*: Panoramic view from Otay Mountain Truck Trail

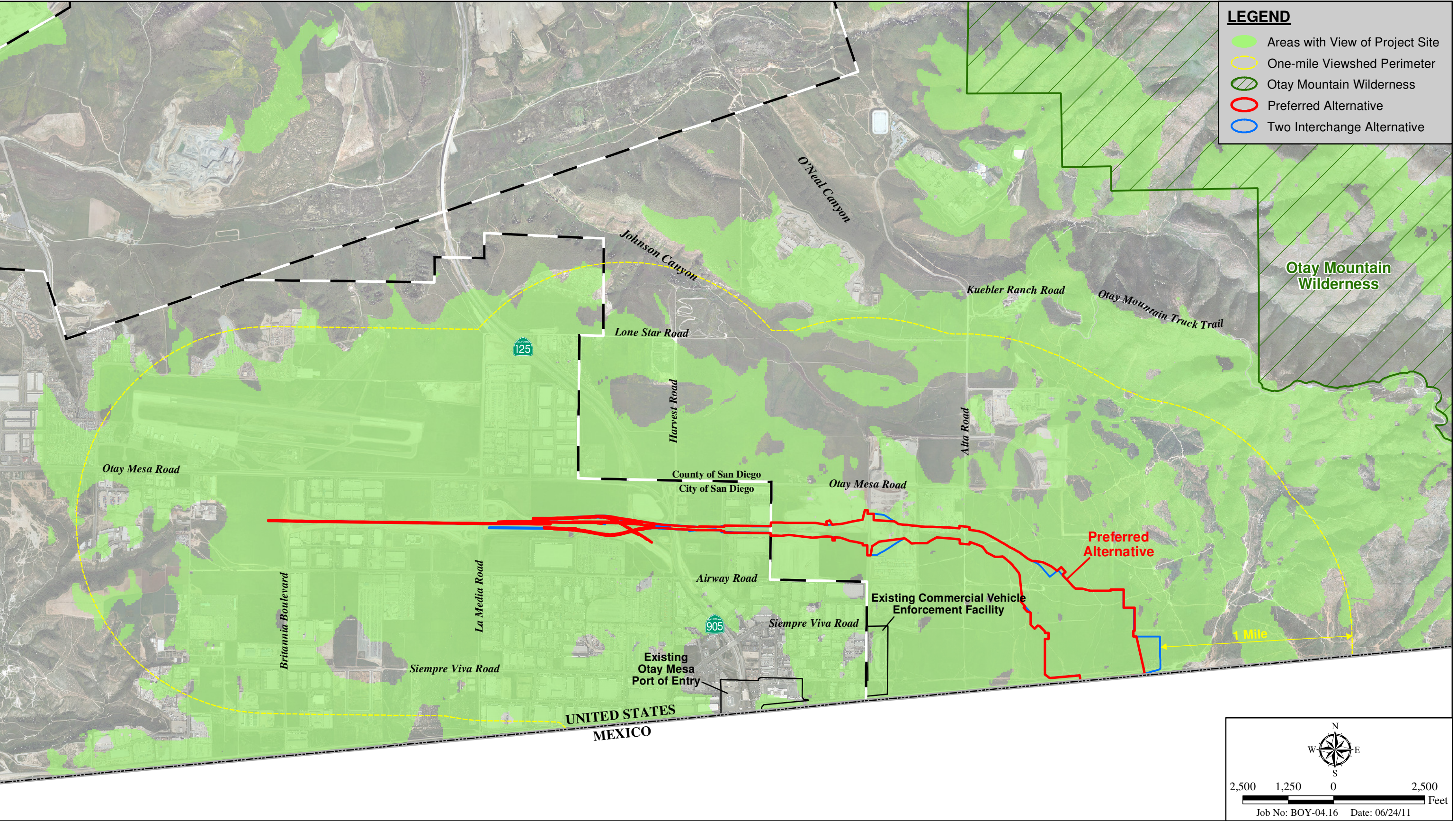
*Refer to Figure 3.9-1 for photo location and direction.

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Site Photograph 7

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

Figure 3.9-6



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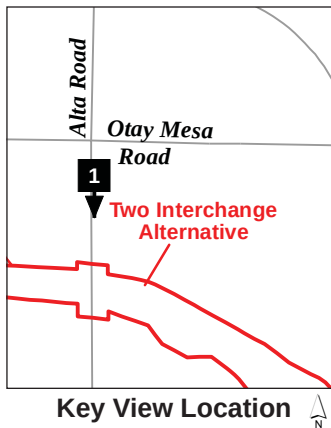
Viewshed Map

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II VISUAL IMPACT ASSESSMENT

Figure 3.9-7



Key View 1:
Existing Conditions



Proposed
SR-11

Simulation 1: Southward view to SR-11 from extension of Alta Road

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Photo simulations of the structures do not reflect their
final design and are for visual example only

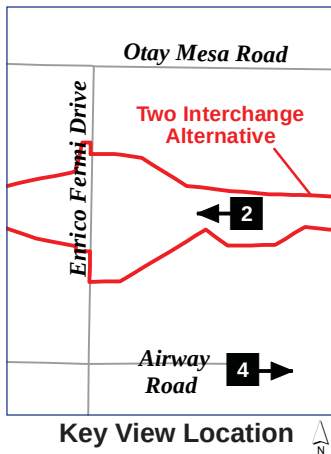
Key View 1/Simulation 1

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

Figure 3.9-8



Key View 2:
Existing Conditions



Simulation 2: Westward view along proposed alignment, east of Enrico Fermi Drive

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Photo simulations of the structures do not reflect their final design and are for visual example only

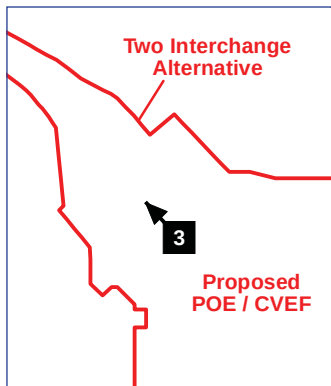
Key View 2/Simulation 2

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

Figure 3.9-9



Key View 3:
Existing Conditions



Key View Location



Simulation 3: Northwest view toward Siempre Viva Road overcrossing from SR-11/POE transition

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Photo simulations of the structures do not reflect their final design and are for visual example only

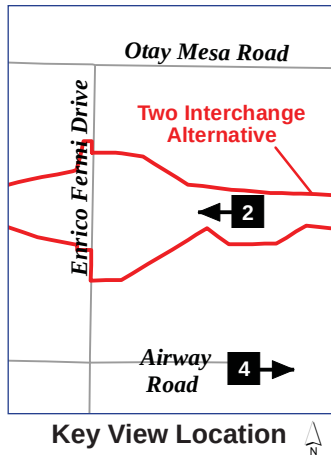
Key View 3/Simulation 3

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

Figure 3.9-10



Key View 4:
Existing Conditions



Simulation 4: Eastward view toward proposed POE from end of Airway Road

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Photo simulations of the structures do not reflect their final design and are for visual example only

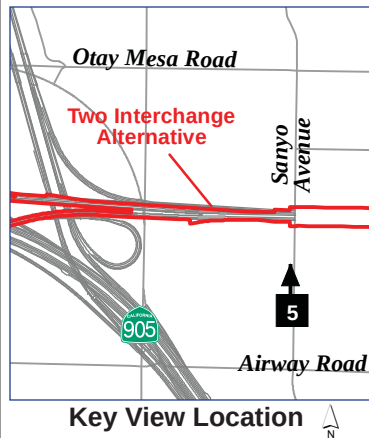
Key View 4/Simulation 4

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

Figure 3.9-11



Key View 5:
Existing Conditions



Simulation 5: Northward view toward SR-11 overcrossing from Sanyo Avenue

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Photo simulations of the structures do not reflect their final design and are for visual example only

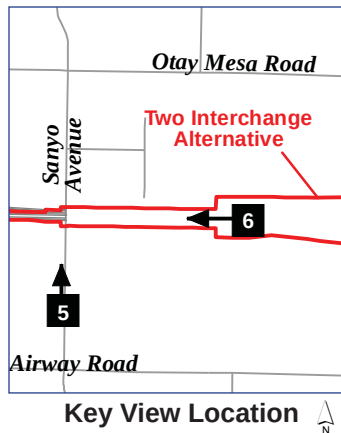
Key View 5/Simulation 5

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

Figure 3.9-12



Key View 6
Existing Conditions



Simulation 6: Westward view along proposed alignment, east of Sanyo Avenue

Key View 6/Simulation 6

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

Figure 3.9-13



Key View 7*: Enrico Fermi Drive

View looking south on Enrico Fermi Drive, between Otay Mesa Road and Airway Road



Key View 8*: Light Industrial Areas Accessed via Sanyo Avenue

View west from buildings east of Sanyo Avenue, adjacent to and north of the proposed alignment

*Refer to Figure 3.9-1 for photo location and direction.

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Key Views 7 and 8

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

Figure 3.9-14



Key View 9*: Otay Mesa Road
View south from Otay Mesa Road to new development along Enrcio Fermi Drive



Key View 10*: CVEF and Border Entry at New POE
View south to the area proposed for the Port of Entry

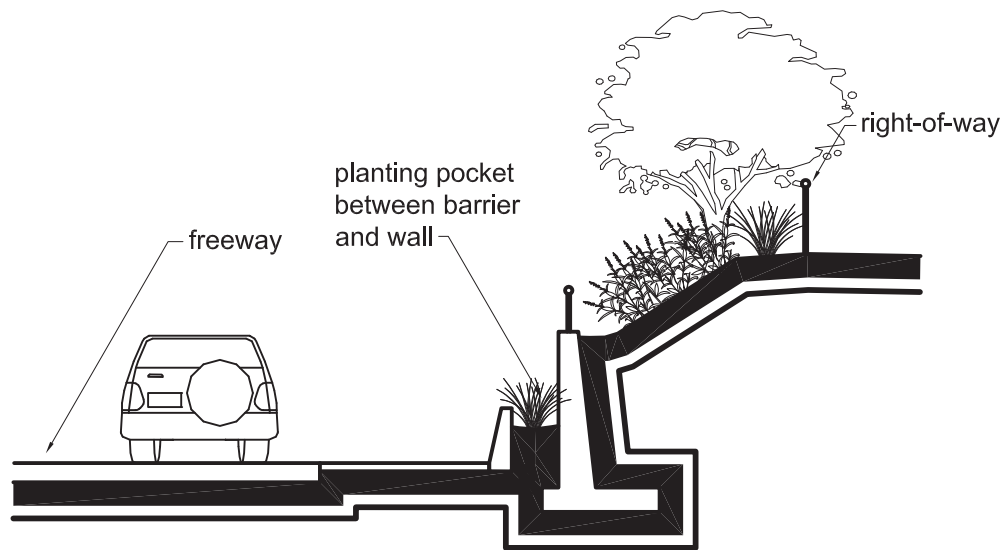
*Refer to Figure 3.9-1 for photo location and direction.

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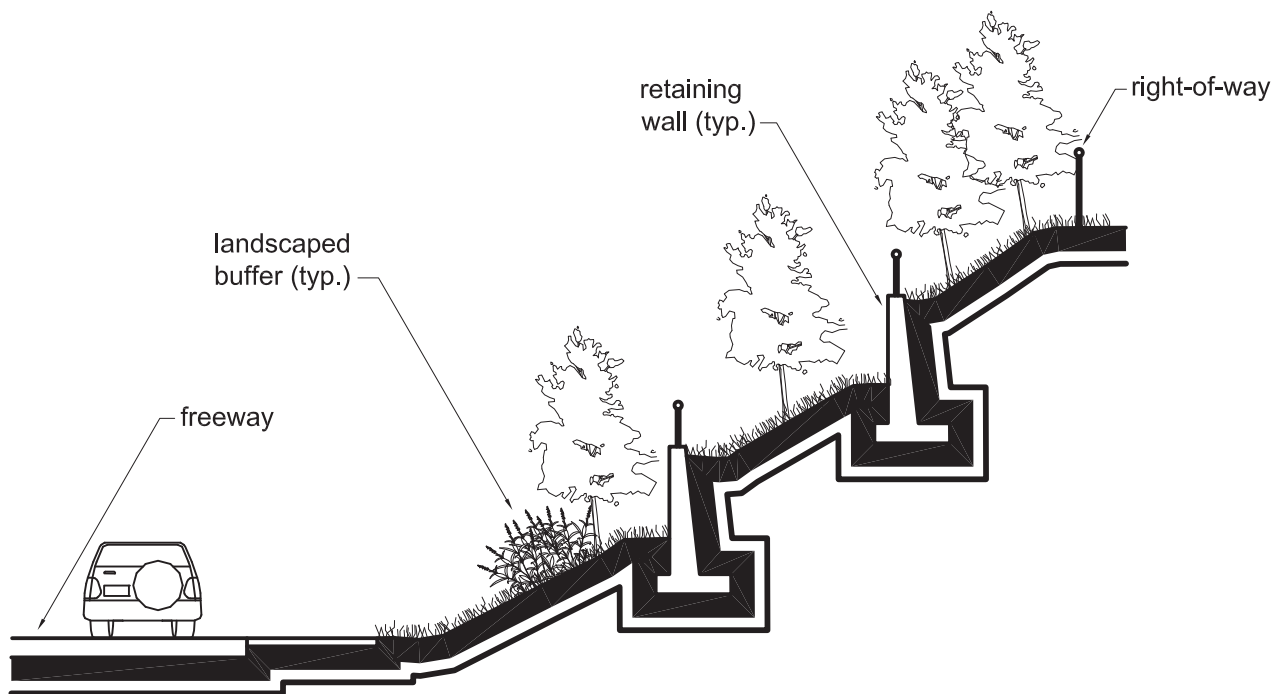
Key Views 9 and 10

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

Figure 3.9-15



Cross-section RW-2:
Retaining Wall - Barrier Planting Pocket



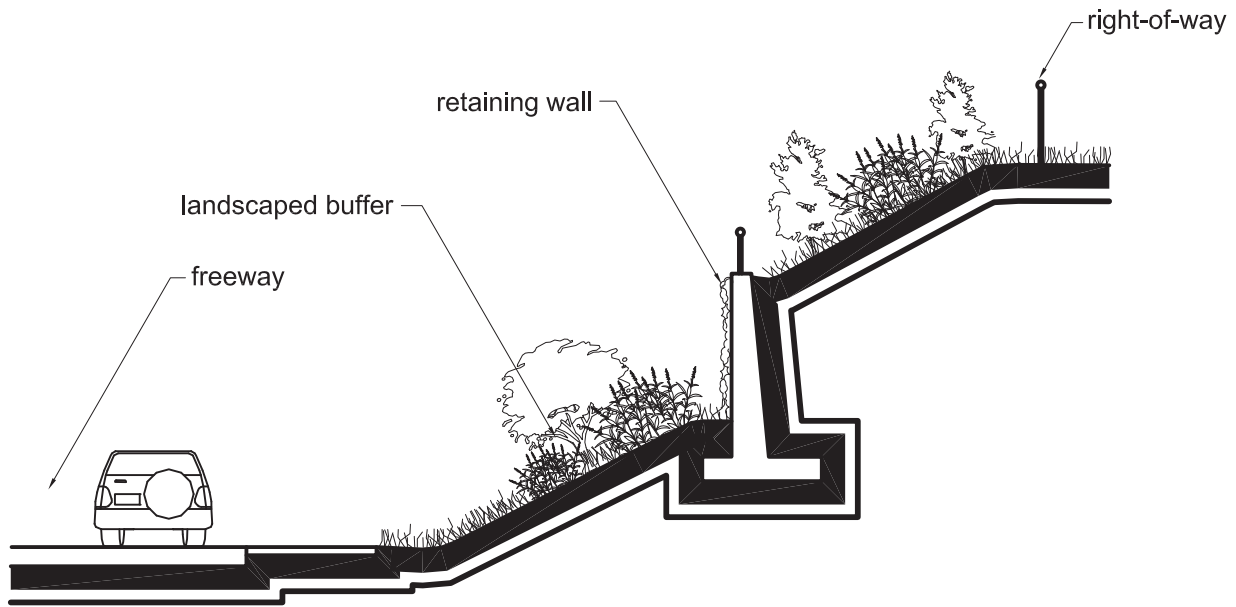
Cross-section RW3:
Terraced Retaining Walls

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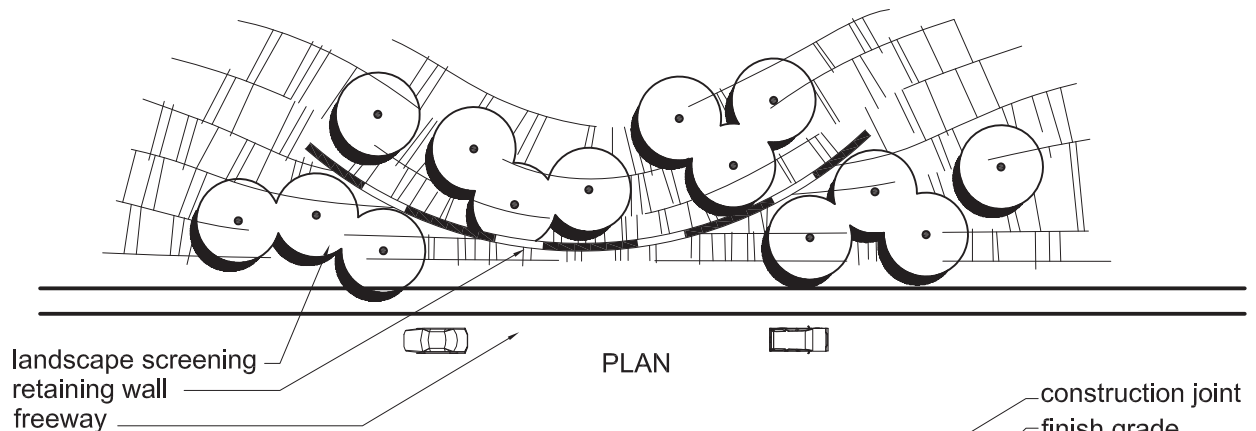
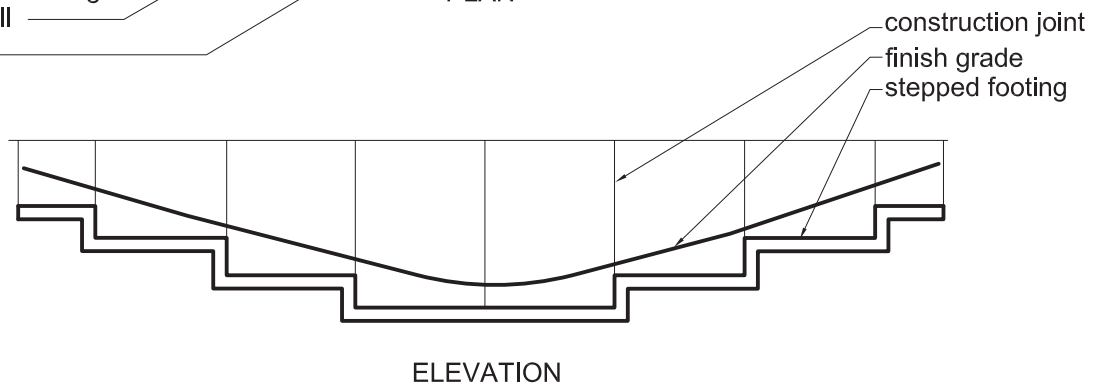
Conceptual Mitigation Measures

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

Figure 3.9-16



Cross-section RW4:
Mid-slope Retaining Wall



RW5: Terrain Contoured Retaining Wall

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Conceptual Mitigation Measures

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

Figure 3.9-17

3.10 CULTURAL RESOURCES

3.10.1 Regulatory Setting

“Cultural Resources,” as used in this document, refer to all “built environment” resources (structures, bridges, railroads, water conveyance systems, etc.), culturally important resources, and archaeological resources (both prehistoric and historic), regardless of significance. Laws and regulations dealing with cultural resources include:

The National Historic Preservation Act of 1966, as amended (NHPA), sets forth national policy and procedures regarding historic properties, defined as districts, sites, buildings, structures, and objects included in or eligible for the National Register of Historic Places (NRHP). Section 106 of NHPA requires federal agencies to take into account the effects of their undertakings on such properties and to allow the Advisory Council on Historic Preservation the opportunity to comment on those undertakings, following regulations issued by the Advisory Council on Historic Preservation (36 CFR 800). On January 1, 2004, a Section 106 Programmatic Agreement (PA) between the Advisory Council, FHWA, State Historic Preservation Officer (SHPO), and Caltrans went into effect for Caltrans projects, both state and local, with FHWA involvement. The PA implements the Advisory Council’s regulations, 36 CFR 800, streamlining the Section 106 process and assigning certain responsibilities to Caltrans. However, the Section 106 responsibilities of the current proposed project are not assigned to Caltrans because it is an “international highway project”, as defined in Part 3.3.2 of the NEPA Pilot Program MOU. As such, FHWA retains the ultimate Section 106 responsibilities under the current proposed project.

“Historical Resources” are considered under CEQA Section 21084.1 and State CEQA Guidelines Section 15064.5, as well as PRC Section 5024.1, which established the California Register of Historical Resources (CRHR). PRC Section 5024 requires state agencies to identify and protect state-owned resources that meet NRHP listing criteria. It further specifically requires Caltrans to inventory state-owned structures in its rights-of-way. “Historical resources” is the CEQA equivalent to NHPA’s “historic properties.” CEQA Section 21083.2 and State CEQA Guidelines Section 15064.5 also require consideration of unique archaeological resources. PRC Sections 5024(f) and 5024.5 require state agencies to provide notice to and consult with the SHPO before altering, transferring, relocating, or demolishing state-owned historical resources that are listed on or are eligible for inclusion in the National Register or are registered or eligible for registration as California Historical Landmarks.

3.10.2 Affected Environment

SR-11 and POE/CVEF Project Areas

This Tier II Cultural Resources discussion relies in part on studies previously conducted in Otay Mesa.

- Cultural resources studies prepared for the SR-905 EIS/EIR encompassed the western portion of the project area from Britannia Boulevard to the future extension of Enrico Fermi Drive.
- The *Cultural Resource Survey and Extended Phase I Test Program for the Future State Route 11 and East Otay Mesa Port of Entry Project* report prepared for the SR-11/Otay Mesa East POE (Kyle Consulting 2001) analyzed potential impacts associated with the Phase I Western SR-11 Corridor and Central SR-11 Corridor from Enrico Fermi Drive east to the U.S. - Mexico border.
- A subsequent cultural resources survey was conducted to address an expanded project area adjacent to portions of the western Phase I program area boundary. The *First Addendum Archaeological Survey for State Route 11 and the East Otay Mesa Port of Entry* report, dated October 2007, was completed for Phase I of the SR-11/Otay Mesa East POE (Kyle Consulting 2007).

- Additionally, an Historical Properties Survey Report (HPSR) was completed (Caltrans 2008b). The response by the SHPO, dated April 24, 2008 concurs with Caltrans' findings of No Historic Properties Affected (SHPO 2008; refer to Appendix I). A similar SHPO letter, dated November 22, 1999 (SHPO 1999; refer to Appendix I), concurs with Caltrans' findings of No Historic Properties Affected regarding the approved SR-905 project.
- Two supplemental HPSRs for the proposed SR-11/POE project were completed in 2009 (Caltrans 2009b) and 2010 (Caltrans 2010a), evaluating additional areas associated with project implementation. These supplemental HPSRs are provided in the cultural resources technical study supporting this Final EIR/EIS.
- A third supplemental HPSR was completed in 2011 for the Lonestar biological mitigation site (Caltrans 2011d), and a fourth supplemental HPSR was completed in 2011 for the Johnson Canyon biological mitigation site (Caltrans 2011e). These supplemental HPSRs are provided in the cultural resources technical study supporting this Final EIR/EIS.

The Phase I Area of Potential Effect (APE) consisted of some 700 acres on a relatively level mesa that has historically been used for agriculture. The Tier II APE was established as an area including proposed future R/W for SR-11 and associated improvements to SR-905, Otay Mesa East POE, CVEF, utility relocations, biological mitigation sites, and all proposed easements. The western portion of the Tier II APE (between SR-125 and Britannia Boulevard) is encompassed within the SR-905 R/W that is currently under construction. A segment in the eastern area of the Tier II APE has been developed with an industrial park (east of Sanyo Avenue). The remainder of the APE to the east of this developed area is generally undeveloped, with a series of dirt roads cutting through the area. As the Tier II APE is smaller and generally contained by that of Phase I, most of the area has previously been studied and did not necessitate a second cultural resources study. To incorporate those portions of the Tier II APE that exist outside the previously-covered APE, two supplemental HPSRs have been completed. The first supplemental HPSR (Caltrans 2009b) for Tier II includes the area near the northwest side of the proposed POE site. The second supplemental HPSR addresses the portion of the APE that is within the existing R/W for the SR-125/SR-905 Interchange and SR-905 (Caltrans 2010a). Information from the Phase I reports and the Phase I and supplemental Tier II HPSRs is summarized in this section of the Final EIR/EIS.

Cultural resources work for the entire project has consisted of background records searches at appropriate archives to determine what sites had been previously recorded within the project study footprint, and what other surveys and excavations had been conducted in the greater Otay Mesa region.

Native American consultation completed for this project included a request to the California Native American Heritage Commission for completion of a record search of its Sacred Lands File for the project area during Phase I. Consultation with local Native American tribes was recommended and a list of Native American contacts was provided. Letters describing the project and a map of the study area were mailed to the contacts and follow-up telephone calls were made. None of the Native American representatives contacted expressed concerns regarding the proposed project. Detailed information regarding consultation with Native American Tribes can be found in the Phase I PEIR/PEIS.

Archaeological resources within the study footprint consist of very sparse, highly disturbed surface scatters of prehistoric lithics, including what archaeologists call flakes, cores, and the shatter that is created when cores are struck by hammerstones to produce flakes. It appears that prehistoric mesa activities centered primarily upon the extraction of good quality material for future stone tool production off the mesa; but extraction also occurred for the expedient manufacture of multi-purpose tools that may have been used once or during one seasonal stay on the mesa and then discarded. These sites have been

highly disrupted by dry farming activities on the mesa over the last 150 years that removed, intermixed and spread prehistoric materials away from their original contexts and created new fractured rocks interspersed with prehistoric materials. The resulting disturbance pattern for these sites is that the artifacts are widely scattered over large areas and no longer exhibit any patterning related to how they were originally created and deposited by local Native Americans. The archaeological record observable today is a very poor reflection of what existed prehistorically. Additionally, these mesa-top sites lack suitable materials for radiocarbon dating, or even diagnostic artifacts allowing investigators to place the sites within San Diego County's 10,000-year-old Prehistoric Era. This makes the sites, with few exceptions, poorly suited for further research (Caltrans 2008b).

After extensive testing of surface scatters in Otay Mesa, an agreement was reached with the SHPO to test only those sites that carried the potential to provide information important in history or prehistory. Sites that did not have the requisite attributes would not be subjected to further investigation beyond their initial recordation. Of the recorded sites in the Phase I APE for SR-11 and the eastern portion of the SR-905 APE that would be affected by the SR-11 project, most were surface scatter sites. Those that underwent additional subsurface testing did not contain subsurface deposits, diagnostic artifacts, or Native American remains or concerns. All sites recorded within the APE were deemed ineligible for listing in the NRHP or the CRHR. The SHPO concurred with this finding for the SR-11 Phase I APE on April 24, 2008 and for the SR-905 project (including the areas that would be affected by the SR-11 project) on November 22, 1999 (see Appendix I). A second supplemental HPSR for the SR-11 project was processed to confirm this finding (Caltrans 2010a).

The supplemental APE discussed in the first supplemental HPSR encompasses portions of two Otay Mesa scatter sites. Both sites were previously determined to be ineligible for listing in the NRHP or CRHR as an outcome of the Section 106 processing for the Tier I environmental document. Accordingly, a finding of No Historic Properties Affected has been determined.

During construction, buried artifacts have been encountered associated with P-37-015988, which represents the former grounds of the St. John's Lutheran Church and cemetery. The church formally closed during the Great Depression, and the building was subsequently torn down in 1940 and reused to build other structures on Otay Mesa. In 1970, the burials from the church cemetery were relocated to Glen Abbey Memorial Park in Bonita and reinterred. The coffins were left in the ground. During early grading for SR-905 one empty coffin was found. The remaining coffin locations were surveyed and mapped, and monitoring was conducted during construction at the SR-905 and Britannia Blvd. interchange. The SHPO concurred in 1999 that this site was not eligible for inclusion on the National Register. As noted above, the SR-11 improvements between SR-125 and Britannia Boulevard would all occur within the existing SR-905 R/W. This area is currently undergoing substantial construction and disturbance, and the addition of lanes to accommodate the SR-11 project would not encounter additional buried resources. Accordingly, the second supplemental HPSR finds that there would be no effect to cultural resources from these additional improvements to SR-905.

Johnson Canyon Biological Mitigation Site

The *Fourth Supplemental Historic Property Survey Report: Johnson Canyon Mitigation Site* (Caltrans 2011e) addressed the Johnson Canyon biological mitigation site associated with the SR-11/POE project. It documented five cultural resources sites within the Area of Direct Impacts, which includes the proposed habitat enhancement area along Johnson Canyon Creek and three cable barrier installation locations, plus three environmentally sensitive areas (ESAs) for CA-SDI-10155H (loci A and a portion of B).

The findings of this HPSR are as follows:

- P-37-031947 is exempt from evaluation because it is an isolated artifact.
- The extended portion of CA-SDI-12337 within Caltrans property was determined to be ineligible for the National Register of Historic Places in accordance with the Management Plan for Otay Mesa Prehistoric Resources (Gallegos et al. 1998). The original portion of CA-SDI-12337 was previously determined to be ineligible for the National Register of Historic Places (SHPO concurrence in 1995).
- CA-SDI-10155H (Loci A and a portion of B) shall be considered eligible for inclusion in the National Register without conducting subsurface testing or surface collection within the APE, for which the establishment of an ESA will protect the sites from any potential effects, in accordance with Section 106 PA Stipulation VIII.C.

Additional Native American consultation was not conducted for the current study of the Johnson Canyon biological mitigation site. Native American consultation was initiated for a previous study of the same area, and no concerns were expressed. The Native American Heritage Commission was not contacted for the current study. The Commission was consulted for a previous study of the same area, and no Sacred Lands were identified within the study area.

In a letter dated September 14, 2011, the SHPO, in regards to the Section 106 PA, confirmed concurrence with Caltrans' finding in the HPSR of No Adverse Effects with Standard Conditions, Environmentally Sensitive Area for the Johnson Canyon Biological Mitigation Site (SHPO 2011b). The findings and the SHPO concurrence considered both the fourth HPSR and the *Management Plan for Otay Mesa Prehistoric Resources* (Management Plan) (Gallegos & Associates 1998). Specifically, the SHPO letter concurred that the extended portion of CA-SDI-12337 within Caltrans property is ineligible for the National Register of Historic Places, and the original portion of CA-SDI-12337 was previously determined ineligible for the National Register of Historic Places. The SHPO also concurred with Caltrans' efforts to avoid impacts to Loci A and a portion of B of CA-SDI-10155H in an ESA.

Lonestar Biological Mitigation Site

The *Third Historic Property Survey Report: Lonestar Mitigation Site* (Caltrans 2011d) addressed the Lonestar mitigation site associated with proposed biological mitigation for the SR-11/POE project. It documented 12 archeological sites within the Lonestar APE, all of which are within the Area of Direct Impacts.

One of those 12 sites, CA-SDI-14,250H, a sparse trash scatter, has been determined exempt under Attachment 4 of the PA. Sites CA-SDI-11,210, -11,214, -11,215/11216, -17,100, -17,101, and -17,102 are sparse lithic scatters. Based on research, including testing of several large sparse lithic scatters on the Otay Mesa, the scatters have been determined extremely unlikely to have subsurface components and limited in their ability to answer research questions for the region. The Otay Mesa has been characterized as a "smear" of sparse lithic scatters across the entire surface, with differentiation coming from additional components in limited locations. Based on the context presented in the Management Plan and descriptions in the HPSR, Caltrans has determined all six sparse lithic scatters not eligible for the NRHP. Caltrans has also determined that the prehistoric components of CA-SDI-11,217/H, -11,218/H, -11,219/H, and -14,210/H, which all consist of lithic scatters as described above, are not eligible (SHPO 2011).

The historic components of CA-SDI-11,217/H, -11,218/H, and 11,219/H consist of surface refuse scatters associated with agriculture and homesteading in the vicinity. Backhoe trenches were dug for the purposes of identifying subsurface components of these sites; no subsurface components were located. Caltrans

has determined that the historic components of these three sites are not eligible. The historic component of site CA-SDI-14,210/H and historic site CA-SDI-11,221/H will be protected through the establishment of an ESA and as such have not been fully evaluated and will be treated as eligible for the purposes of this undertaking. Native America consultation was initiated with letters sent January 12, 2011. No comments have been received to date.

In a letter dated April 7, 2011, the SHPO, in regard to the Section 106 PA, confirmed concurrence with the Caltrans' finding in the HPSR of No Adverse Effects with Standard Conditions, Environmentally Sensitive Area (ESA) for the Lonestar biological mitigation Site (SHPO 2011a; refer to Appendix I of this EIR/EIS). The findings and the SHPO concurrence considered both the third HPSR and the Management Plan (Gallegos & Associates 1998). Specifically, the SHPO letter stated concurrence that sites CA-SDI-11,210, -11,214, -11,215/11,216, -11,217/H, -11,218/H, -11,219/H, -17,100, -17,101, and -17,102 are not eligible for the NRHP, and that the prehistoric component of site CA-SDI-14,210/H is a non-contributor to the site's potential eligibility.

Standard Provisions

Regardless of whether significant historical or archaeological properties have been identified, the following provisions addressing the discovery of cultural materials or human remains are included as part of the project:

- If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and significance of the find.
- If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall cease in any area or nearby area suspected to overlie remains, and the County Coroner will be contacted. Pursuant to PRC Section 5097.98, if the remains are thought to be Native American, the coroner will notify the Native American Heritage Commission (NAHC) who will then notify the Most Likely Descendent (MLD). At this time, the person who discovered the remains will contact the District Environmental Branch so that they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable.

3.10.3 Environmental Consequences

Preferred Alternative and Draft EIR/EIS Build Alternatives

SR-11 and POE/CVEF Project Areas

The following analysis of potential cultural resources impacts is applicable to the Preferred Alternative and all of the other build alternatives. All of the potential alternatives and variations would affect similar areas, with the type and nature of associated impacts therefore the same. While the precise areas affected could vary slightly among the various alternatives and variations, the level of impact and associated requirements to address these potential effects would be the same.

Based on the extent of the project APE, the proposed SR-11 and POE/CVEF project areas could potentially disturb nine recorded archaeological sites, which are composed of very sparse lithic scatters. Because the sparse lithic scatters and P-37-015988 are not considered historic properties for the purposes of NHPA, nor historical resources or unique archaeological resources for the purposes of CEQA, no direct or indirect impacts to important cultural resources would occur as a result of implementation of the Preferred

Alternative or any of the other build alternatives or variations. Subsurface testing at those sites that might have further research potential did not reveal the presence of cultural resources beneath the ground surface. Furthermore, because of the geological history of this area, which includes ancient soils that have formed in place from underlying bedrock, pre-dating by millions of years any human presence on Otay Mesa, unanticipated discoveries during construction are not likely.

Lonestar Biological Mitigation Site

Based on the extent of the Lonestar mitigation site APE, the proposed SR-11 and POE/CVEF project areas could potentially disturb 12 recorded archaeological and/or historical sites. Ten of these sites were determined not to be historic properties for the purposes of NHPA, nor are they historical resources or unique archaeological resources for the purposes of CEQA. The SHPO concurred with Caltrans' efforts to avoid impacts to the historic component of CA-SDI-14,210/H and all of site CA-SDI-11,221/H in an ESA, and with Caltrans' finding of No Adverse Effects with Standard Conditions – ESA (SHPO 2011a). Therefore, no direct or indirect impacts to important cultural resources at the Lonestar biological mitigation site are anticipated to occur.

Johnson Canyon Biological Mitigation Site

The proposed project activities, including the removal of non-native plants and the replacement with native plants, and installation of three cable barriers to prevent off-road vehicular activities, could potentially disturb five recorded sites. One site was determined to be exempt from evaluation, two were determined to be ineligible for the National Register of Historic Places, and two loci of a site were determined eligible to be considered for inclusion in the National Register without conducting subsurface testing or surface collection. For the loci, the establishment of an ESA will protect the sites from any potential effects. The SHPO concurred with Caltrans' efforts to avoid impacts to Loci A and a portion of B of CA-SDI-10155H in an ESA, and with Caltrans' finding of No Adverse Effects with Standard Conditions – ESA (SHPO 2011b; refer to Appendix I of this EIR/EIS). Therefore, no direct or indirect impacts to important cultural resources at the Johnson Canyon biological mitigation site are anticipated to occur.

No Build Alternative

Under the No Build Alternative, the described development actions for the build alternatives and variations would not occur, and no associated impacts to cultural resources would result.

3.10.4 Avoidance, Minimization, and/or Mitigation Measures

Preferred Alternative and Draft EIR/EIS Build Alternatives

Unanticipated subsurface discoveries during construction are not likely. Relocation of known human remains from the historic church property at P-37-015988 has occurred. During hundreds of archaeological investigations on Otay Mesa over the last 50 years, no unanticipated human remains have been discovered. As mentioned above, the geologic history of the mesa is completely unsuitable for the presence of accumulated soil deposits. In such a context the presence of buried cultural resources within soils that are tens of millions of years old is not possible. Furthermore, it is unlikely that the SR-11 project would uncover historic resources within the existing SR-905 R/W that would not have been found during the current SR-905 construction. In addition to the standard provisions listed in Section 3.10.2, the following actions to avoid, minimize or mitigate impacts to any unknown resources that might be encountered during construction serve as precautionary measures:

- Site CA-SDI-10155H (Loci A and a portion of B) at the Johnson Canyon biological mitigation site would be protected through retention within an ESA.

- The historic component of site CA-SDI-14210/H and historic site CA-SDI-11221/H at the Lonestar biological mitigation site would be protected through their retention within an ESA. Archeological components that may be associated with these sites have not been fully evaluated and shall be treated as eligible should future ground-breaking activities be proposed within the established ESA.
- ESAs will be depicted on all project plans and completely avoided by project activities. ESA fences will be installed prior to any construction activities.

No Build Alternative

No impacts were identified for the No Build Alternative. No project action would occur under the No Build Alternative; therefore, no associated avoidance, minimization or mitigation measures would be required.

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PHYSICAL ENVIRONMENT

3.11 HYDROLOGY AND FLOODPLAIN

3.11.1 Regulatory Setting

International Boundary and Water Commission

The IBWC is a bi-national organization that oversees projects along the U.S. - Mexico Border with the potential to generate impacts involving political, economic, environmental or infrastructure issues. The IBWC jurisdiction extends 60 feet north from the international border, with the principal mission of the agency to provide solutions for issues related to the application of U.S.-Mexico treaties, including hydrology and flood control. Portions of the proposed POE facilities extend into the IBWC jurisdictional area and are subject to associated regulatory oversight. While none of the proposed SR-11 and CVEF facilities are located within the noted 60-foot zone, treated and detained runoff from the project area would be discharged into watersheds that eventually enter IBWC jurisdiction. The IBWC guidelines identify a number of hydrologic and hydraulic requirements for projects within or potentially affecting their jurisdiction, including assessment of applicable soil characteristics (e.g., infiltration rates), drainage conditions, flow regulation, and drainage facility maintenance. Additional detail on IBWC requirements is provided in the project Hydrology and Hydraulic reports referenced below in Section 3.11.2.

Executive Order 11988

EO 11988 (Floodplain Management) directs all federal agencies to refrain from conducting, supporting, or allowing actions in floodplains unless it is the only practicable alternative. FHWA requirements for compliance are outlined in 23 CFR 650 Subpart A.

In order to comply with these requirements, the following must be analyzed:

- The practicability of alternatives to any longitudinal encroachments
- Risks of the action
- Impacts on natural and beneficial floodplain values
- Support of incompatible floodplain development
- Measures to minimize floodplain impacts and to preserve/restore any beneficial floodplain values impacted by the project

The base floodplain is defined as “the area subject to flooding by the flood or tide having a one percent chance of being exceeded in any given year.” An encroachment is defined as “an action within the limits of the base floodplain.”

Caltrans Standards

Caltrans standards related to hydrology and floodplain issues include applicable sections of the HDM (Caltrans 2007a). These guidelines identify a number of criteria related to hydrologic and floodplain issues, including topics such as roadway drainage, storm frequency/magnitude, design discharge, cross drainage, and storm drain/facility design.

3.11.2 Affected Environment

A Hydrology & Hydraulics Report was prepared as part of the Tier II engineering and environmental evaluation of the SR-11 and CVEF design alternatives, with a separate study prepared for the POE site (AECOM 2010a and 2010b). Both of these analyses incorporate applicable information from the Preliminary Existing Condition Hydrology Calculations Report prepared during the Phase I project evaluation (Boyle 2007). The Phase I report analyzed existing hydrologic conditions in the SR-11 corridor, with associated data used for applicable calculations in the current Tier II reports (e.g., peak discharge rates and related culvert sizing). In addition, a Hydrogeologic Site Assessment/Storm Water Data Report (HSA/SWDR) was prepared for the project to assess subsurface and groundwater conditions in the eastern portion of the study area (i.e., approximately east of Alta Road, Caltrans 2009c). The HSA/SWDR was intended to “[c]onvey information relevant to the design of the proposed detention basins to be constructed within the limits of the proposed extension, and to provide general subsurface hydrologic site conditions...”, and included site reconnaissance, review of pertinent background documents, exploratory drilling, installation of piezometers, percolation testing, and related hydrogeologic analyses. The results of the noted investigations are summarized below along with other applicable data.

The study area identified for project-related hydrologic issues (hydrology study area) encompasses approximately 1,624 acres, and includes the Preferred Alternative, the three Draft EIR/EIS build alternatives and associated variations, and applicable watersheds (Figure 3.11-1, *Project Area Drainage Map*). Specifically, this includes portions of the project area where proposed development would result in the construction of new impervious surfaces or other activities potentially generating hydrologic or hydraulic effects. Based on these criteria, the hydrology study area includes the following specific locations: (1) the entire POE project site and related watersheds, for both the Draft EIR/EIS and Preferred Alternative POE designs; (2) the SR-11 Preferred Alternative and Draft EIR/EIS build alternative alignments and related variations east of the SR-905/SR-125/SR-11 Interchange, along with associated watershed areas; (3) proposed ramp additions/modifications and related watershed areas associated with the SR-905/SR-125/SR-11 Interchange; and (4) the proposed lane widening along SR-905 that extends approximately 0.7 mile west of the SR-905/SR-125/SR-11 Interchange. The hydrology study area does not include the proposed SR-905 median modifications extending approximately between the SR-905/SR-125/SR-11 Interchange and Britannia Boulevard, as this median was already proposed to be completely paved (and was previously addressed as part of the SR-905 analysis). Accordingly, the proposed design modifications to this facility would not result in any associated hydrologic or hydraulic effects.

A Location Hydraulic Study (LHS) was not prepared for the Tier II project, based on a determination during the Phase I evaluation that all proposed facilities would be located outside of mapped floodplain boundaries. This conclusion is also applicable to the identified Tier II hydrology study area, with the SR-11/CVEF corridor and POE site located within areas designated as Zone X by the Federal Emergency Management Agency (FEMA). Zone X includes areas determined to be outside the mapped 500- and 100-year floodplain boundaries, as described below under Floodplain Characteristics (refer also to Appendix J of this Final EIR/EIS).

In addition to the study area described above, project development involves two anticipated biological resources mitigation sites, the Lonestar and Johnson Canyon sites. The Johnson Canyon site consists of a single parcel located within the canyon, while the Lonestar site encompasses three separate parcels (i.e., the Lonestar North, Lonestar South and Lonestar Ridge West parcels, refer to Figure 3.23-1, *Critical Habitat/Impacts*). Proposed restoration activities at the two mitigation sites would entail approximately 172 acres of habitat preservation and enhancement activities (e.g., weeding and replanting), as well as up to approximately 5 acres of minor (surficial) grading to prepare appropriate areas (within the Lonestar

Ridge West Parcel} for habitat restoration and/or enhancement (with no grading proposed at the Johnson Canyon site or the Lonestar North and South parcels). Accordingly, the proposed habitat mitigation sites are assessed in the following analysis.

Watershed and Drainage Characteristics

The hydrology study area is within the Tijuana Hydrologic Unit (HU), one of 11 major drainage areas designated in the 1994 Regional Water Quality Control Board (RWQCB) Water Quality Control Plan for the San Diego Basin (Basin Plan; 1994, including amendments through April 2007). The Tijuana HU is a triangular-shaped area of approximately 470 square miles, and extends generally from the Laguna Mountains and Campo on the east to Imperial Beach on the west. The Tijuana HU is divided into a number of hydrologic areas (HAs) and subareas based on local drainage characteristics, with the hydrology study area located in the Water Tanks hydrologic subarea of the Tijuana Valley HA (Figure 3.11-2, *Project Location within Local Hydrologic Designations*). The Water Tanks hydrologic subarea includes approximately 9,580 acres and encompasses the hydrology study area and all associated watersheds north of the international border. The Tijuana River is the principal surface water feature in the Tijuana HU, with a number of smaller tributary drainages also present. Specifically, the Water Tanks hydrologic subarea in the hydrology study area and vicinity is drained primarily by a number of small to moderate size swales and canyons flowing south and/or west. Average annual precipitation varies from approximately 10 inches at the western end of the study area to 14 inches in the easternmost areas, with the majority of this rainfall (approximately 85 percent) occurring during the period of December through March (AECOM 2010a; weather.com 2009).

Surface drainage within the hydrology study area occurs as concentrated (confined) flow in several unnamed swales and canyon drainages, and as unconfined (sheet) flow. General drainage patterns within the study area and vicinity are depicted on Figure 3.11-1. As shown on this figure, drainage south of the POE site flows west between the two existing border containment fences, and eventually joins the existing drainages to the east that flow south under the border fences. Detailed descriptions of on- and off-site flow patterns and directions are provided in the project Hydrology and Hydraulics reports (AECOM 2010a and 2010b). Flows south of the border continue generally south and potentially enter the Tijuana River, although the status of surface water diversions/withdrawals in Mexico is unknown. Flows in the river continue generally west for approximately 8 to 10 miles before reaching the Pacific Ocean via the Tijuana Estuary. The westernmost approximately five-mile stretch of the Tijuana River is located on the U.S. side of the border, entering the U.S near the community of San Ysidro.

Much of the eastern and central portions of the hydrology study area are undeveloped, and encompass native habitats along with areas previously disturbed by activities such as agriculture and grading (refer to Figure 3.11-1). Existing development in the eastern and central areas includes portions of a power plant site, a vehicle auction yard, several truck parking/freight storage sites, other commercial/industrial uses, and a number of paved/unpaved roads. The western portion of the hydrology study area (approximately west of Sanyo Avenue) includes more extensive disturbed and/or developed sites, with specific facilities including two small power plants; numerous commercial and industrial properties; portions of existing/developing SR-905, and the proposed SR-905/SR-125/SR-11 Interchange; and other paved roadways. Existing drainage facilities within the study area encompass storm drain systems related to local development, as well as a number of culverts extending under the international border fence.

The Lonestar and Johnson Canyon biological mitigation sites are located within the Otay Valley HA of the Otay HU (Figure 3.11-2). The Otay HU includes approximately 160 square miles within the watershed of the Otay River and related tributaries. All drainage associated with the mitigation sites flows north to the Otay River via overland flow, Johnson Canyon and several smaller unnamed canyons. Flows in the river continue generally west for approximately eight miles before entering the southern end of San Diego Bay.

Floodplain Characteristics

The hydrology study area and vicinity have been mapped for flood hazards by FEMA, and as previously indicated, is designated as Zone X, or areas determined to be outside the 500- and 100-year floodplains (FEMA 2002 and 1997a through 1997c). The closest mapped 100-year floodplain is located approximately one-half mile north along Johnson Canyon Creek. A letter from the San Diego County Department of Public Works (DPW) was received by Caltrans during the Phase I analysis to document the noted floodplain conditions, with this letter concluding that the project did "[n]ot require a Floodplain Impact assessment." (County 2007b; refer to Appendix J). The Tier II project area is similar to the noted Phase I site and is located outside of mapped floodplain boundaries, with the referenced conclusions regarding floodplain analysis therefore still applicable. The DPW letter also includes information regarding flood control standards for local development projects, essentially requiring that development sites within the East Otay Mesa area provide local or regional detention basins to regulate off-site discharge. These requirements are addressed below in Section 3.11.3 under the discussion of "Runoff."

The Johnson Canyon site and Lonestar South Parcel are located within or adjacent to a mapped 100-year floodplain in Johnson Canyon. The Lonestar North and Lonestar Ridge West parcels are located in areas designated as Zone X (FEMA 1997a). As described below in Section 3.11.3, an LHS will be conducted at a later date for applicable portions of the Johnson Canyon site and Lonestar South parcel (i.e., areas within the mapped floodplain), as part of a separate project analysis for the biological mitigation sites.

Groundwater

No regional groundwater basins are mapped within the hydrology study area and immediate vicinity. The closest major aquifers include the Otay Valley and Lower Tijuana River basins, located approximately 1.5 miles north and 3 miles west, respectively, at their closest points (California Department of Water Resources [DWR] 2003, SDCWA 1997). Historical data from these sources identify groundwater depths of between approximately 350 and 485 feet in several locations west of the study area (DWR 1986). Six borings were drilled to depths of between 26.5 and 130 feet in the eastern portion of the study area (east of Alta Road) as part of the project HSA/SWDR (Caltrans 2009c). No groundwater was encountered in these borings, with the referenced report concluding that "[i]t is very unlikely that significant groundwater exists in the Otay Formation..." and "No groundwater was logged within the Santiago Peak Volcanic bedrock, to the maximum extent of...exploratory borings." As described in Section 3.13, *Geology/Soils/Seismic/Topography*, the Otay Formation is mapped in much of the eastern hydrology study area (likely underlying the entire area at depth), and is underlain by the Santiago Peak Volcanics. Based on the above information, permanent shallow groundwater is generally not expected to occur in this area.

The Johnson Canyon and Lonestar mitigation sites are located in close proximity to the mapped areal extent of the Otay Valley Groundwater Basin (DWR 2003). While no known shallow groundwater basins or aquifers occur within the mitigation sites, one or more of these areas may encompass shallow groundwater due to their location relative to Otay Valley and within or adjacent to local canyons.

3.11.3 Environmental Consequences

Preferred Alternative and Draft EIR/EIS Build Alternatives and Variations

The following analysis of potential hydrologic and floodplain impacts is applicable to the Preferred Alternative and all three Draft EIR/EIS build alternatives, with or without the associated variations, as well as the Johnson Canyon and Lonestar mitigation sites. Specifically, all of the potential alternatives and variations encompass similar facility types and locations, with these and other noted areas exhibiting

generally similar hydrologic and floodplain conditions (except for the mitigation areas within/adjacent to Johnson Canyon). Accordingly, while the specific locations and extent of project hydrology and floodplain impacts would vary slightly among the build alternatives, variations, and sites, the overall type and nature of these impacts would be essentially the same. For conditions where specific differences among the alternatives/sites may affect hydrology and floodplain considerations, the differences are called out as appropriate.

Applicable hydrologic/hydraulic and implementation characteristics of the identified biological mitigation sites are summarized below:

Mitigation Site	In Floodplain?	Grading Proposed?
Johnson Canyon	Yes	No
Lonestar Ridge West Parcel	No	Yes; Surficial (5 acres)
Lonestar North Parcel	No	No
Lonestar South Parcel	Yes	No

Watershed and Drainage

Drainage Patterns and Directions

The proposed design under all project alternatives and associated variations would include constructing a number of new storm drain facilities and/or extending existing/proposed structures where applicable. As a result, project-related storm flows would be accommodated within the proposed project storm drain system, and associated overall drainage patterns and directions would not change. Specifically, runoff within the hydrology study area, including on-site flows generated within the project alignment and off-site flows routed through the project alignment via proposed cross drains (culverts), would continue to drain generally to the south and west as previously described.

Proposed activities at the Johnson Canyon and Lonestar mitigation sites would consist primarily of preserving/enhancing existing habitat areas, with no associated impacts to current drainage patterns or directions. Specifically, proposed habitat restoration/enhancement would not entail the construction of any structures, impervious surfaces or other facilities that would affect drainage patterns or directions. Proposed grading associated with these efforts at the Lonestar Ridge West Parcel would generally be minor and surficial in nature, and would be intended to maintain, rather than alter, existing drainage patterns to provide appropriate hydrologic conditions that support native habitat communities. No grading would occur at the Johnson Canyon Mitigation site or the Lonestar North/South parcels. Accordingly, all flows from the described mitigation areas would continue to drain north to the Otay River after implementation of habitat restoration and enhancement activities.

Runoff

SR-11 Corridor/CVEF Drainage Facilities. On-site flows within the SR-11 corridor would be conveyed via a series of inlets, pipes, channels/ditches and basins. Preliminary basin locations are shown on Figures 2-13a through 2-13d for the Preferred Alternative, and on Figures 2-14a through 2-14d, 2-15, 2-16a through 2-16d, and 2-17a through 2-17d for the Draft EIR/EIS build alternatives and variations. Final drainage facilities will be determined during the project design phase, and will be based on the feasibility and reasonability of meeting regulatory standards (including local agency standards). The preliminary basin sizes identified in the associated technical report (AECOM 2010a) are based on the assumption that all associated regulatory criteria can be met.

The proposed basins would be capable of providing detention, retention/infiltration, and/or water quality treatment capacity, and would encompass one or both of the following features to address associated requirements (depending on final design): (1) subsurface soil treatments (i.e., to facilitate infiltration); and/or (2) paved bottoms to facilitate maintenance. If, during the project design phase, it is determined that infiltration basins are necessary and can meet current regulatory standards, a basin bottom that facilitates infiltration would be implemented. Additional discussion of SR-11 hydrology and hydraulics is provided in the SR-11/CVEF Hydrology/Hydraulics Study (AECOM 2010a), with water quality applications discussed in Section 3.12 of this Final EIR/EIS, *Water Quality and Storm Water Runoff*.

Drainage within the proposed CVEF site would be collected and conveyed via a system of facilities including inlets, pipes, channels/ditches, and basins. Runoff from locations such as rooftops and paved parking areas would be directed to one or more proposed basins wherever feasible and reasonable, with these basins providing flow regulation pursuant to applicable criteria. Final drainage facilities will be determined during the project design phase, and will be based on the feasibility and reasonability of meeting regulatory criteria, as noted for SR-11. The preliminary basins identified in the Hydrology and Hydraulics Report are based on the assumption that all associated regulatory criteria can be met, and are sized to provide detention, retention/infiltration and/or water quality treatment capacity. All basins would incorporate some or all of the design features identified above for the SR-11 corridor. Additional discussion of the on-site CVEF drainage system design is provided in the SR-11/CVEF Hydrology/Hydraulics study (AECOM 2010a).

Preliminary drainage facility design for the SR-11 corridor/CVEF in the eastern portion of the hydrology study area is based on Caltrans methodologies and the HDM (Caltrans 2007a), and incorporates City and County of San Diego storm water management policies for the Otay Mesa area where feasible and reasonable. Detention basins would regulate post-development flows such that discharge from the hydrology study area would be equal to or less than existing flows, and may also provide water quality treatment (refer to Section 3.12). All proposed facilities associated with on-site drainage would be designed to accommodate 25-year storm event¹ flow rates, pursuant to Caltrans guidelines. In addition, all applicable project-related drainage outlets would include energy dissipation structures to reduce post-development flow velocities pursuant to Caltrans guidelines.

Off-site flows associated with the portion of the SR-11 corridor east of Sanyo Avenue and the CVEF site would be conveyed through (beneath) the roadway facilities via cross drains, with these flows to be kept separate from the described on-site drainage system where feasible. Five cross drain structures are proposed for the Preferred Alternative and Draft EIR/EIS build alternatives within the SR-11 corridor/CVEF, as summarized in Table 3.11-1, *Proposed Cross Drain Facilities in the Eastern Portion of the Study Area*. All proposed cross drains would be designed to accommodate a 100-year storm event, and would include appropriate energy dissipation structures pursuant to Caltrans guidelines. Drainage easements are proposed at the upstream end of the cross drain structures to accommodate associated potential ponding beyond the edge of the R/W.

Drainage easements would also be provided at the downstream ends of the cross drains if determined necessary during the project design phase. Additional discussion of off-site hydrology/hydraulics is provided in the preliminary SR-11/CVEF Hydrology/Hydraulics Study (AECOM 2010a), as well as the Existing Conditions Hydrology Report prepared for the Phase I project PEIR/PEIS (Boyle 2007).

¹ A 25-year storm is defined as an event with a four percent chance of occurring in any given year, while a 100-year storm is an event with a one percent chance of occurring in any given year.

**Table 3.11-1
PROPOSED CROSS DRAIN FACILITIES IN THE EASTERN PORTION
OF THE STUDY AREA**

Location ¹	Length (feet)	Design Parameters
69+00	226 to 272 ²	24-inch Circular RCP
95+50 to 95+90 ³	195 to 571 ⁴	36-inch Circular RCP
110+00	326	48-inch Circular RCP
128+00	1,150 to 1,200 ⁵	4-by 8-foot Double Box ⁶
CVEF	515 to 694 ⁷	4-by 6-foot Double Box ⁸
POE (Center) ⁹	1,845	4-by 6-foot Double Box ⁸
POE (East) ⁹	1,430	4-by 6-foot Double Box ⁸

¹ Station Number locations are depicted on Figures 2-13a through 2-13d for the Preferred Alternative, 2-14a through 2-14d, 2-15, 2-16a through 2-16d, and 2-17a through 2-17d for the Draft EIR/EIS build alternatives and variations. Proposed locations for the Preferred Alternative would be the same as those shown, or as specifically identified.

² Proposed lengths would be 226 feet for the No Interchange and One Interchange alternatives, and 272 feet for the Two Interchange and Preferred alternatives.

³ The cross drain location would be at Station 95+90 for the No Interchange, Two Interchange, and Preferred alternatives; and at Station 95+50 for the One Interchange Alternative.

⁴ Proposed lengths would be 195 feet for the No Interchange Alternative, 571 feet for the One Interchange Alternative, and 292 feet for the Two Interchange and Preferred alternatives.

⁵ The cross drain length would be 1,200 feet for the Preferred Alternative, and 1,150 feet for all other alternatives.

⁶ This facility would encompass two adjacent 4-foot by 8-foot box culverts.

⁷ The cross drain length would be 515 feet for the Preferred Alternative, and 694 feet for all other alternatives.

⁸ This facility would encompass two adjacent 4-foot by 6-foot box culverts.

⁹ The listed POE cross drains are for the Preferred Alternative only, as associated design information was not available at the time the Draft EIR/EIS was completed.

RCP = reinforced concrete pipe

Source: AECOM (2010a, Caltrans 2011a)

Flows within the portion of the SR-11 corridor located west of Sanyo Avenue would be conveyed into a series of inlets, outlets, pipes, basins and culverts similar in nature to those described above for the proposed SR-11 corridor in the eastern portion of the hydrology study area. Specifically, all on-site drainage facilities in the western portion of this study area would be designed to accommodate a 25-year storm event, while off-site facilities would be designed to accommodate a 100-year storm event (per Caltrans standards). The proposed basins would provide flow regulation such that post-project discharge would be equal to or less than existing discharge, and may also provide water quality treatment (refer to Section 3.12). Based on the relatively limited extent of proposed facilities in the western portion of the study area, it is anticipated that modifications to the previously approved SR-905 drainage systems (if required) would generally be minor in nature, and that all associated facilities would be located within the existing SR-905 R/W or other areas cleared under the SR-905 project.

Implementation of proposed habitat restoration/enhancement activities at the Johnson Canyon and Lonestar mitigation sites would not impact existing runoff conditions, for similar reasons as noted above under the discussion of Drainage Patterns and Directions. Specifically, no impervious surfaces or substantial compaction would result, with subsequent runoff rates and amounts to be essentially identical to existing conditions.

POE Drainage Facilities. Since circulation of the Draft EIR/EIS, the PDS (GSA 2011) has been completed; this document contains a revised POE/CVEF conceptual design (including conceptual drainage facilities design) that would apply to any of the build alternatives, including the Preferred Alternative. As described in the PDS, drainage within the proposed POE site would be collected and

conveyed via a system of facilities including inlets, pipes, channels/ditches, and culverts. In addition, runoff from locations such as rooftops and paved parking areas would be directed to one or more proposed basins wherever feasible, with these basins providing flow regulation pursuant to applicable criteria. All drainage from the POE site would ultimately discharge to the south within the adjacent federal land that is protected by the U.S. Border Patrol.. Conceptual drainage facilities associated with the POE site (as updated per the PDS) are depicted on Figure 2-21, *Preferred Alternative Conceptual Layout of the Otay Mesa East POE and CVEF*, of this Final EIR/EIS. These drainage facilities are conceptual in nature, and would be subject to additional environmental review if the ultimate design varies from the assumptions made in the associated technical studies.

Floodplain

As outlined above in Sections 3.11.2 and 3.11.3, no project-related encroachment into mapped 100-year floodplains would occur under the Preferred Alternative, any of the other build alternatives and associated variations, or the restoration activities at the Lonestar Ridge West and Lonestar North parcels. Accordingly, no impacts related to floodplain encroachment would result from associated project implementation activities.

The Johnson Canyon site and Lone Star South parcel biological mitigation areas are located in a mapped floodplain, as previously noted. Proposed restoration activities at these sites would consist predominantly of weed removal and revegetation with native species, and would not include grading or installation of impervious surfaces/obstructions such as buildings or pavement. Based on the location of these two sites within the mapped floodplain, however, an associated LHS for the proposed mitigation activities will be prepared at a later date as part of a separate project analysis.

Groundwater

Implementation of: (1) the Preferred Alternative or other build alternatives; (2) the associated variations; and (3) the Johnson Canyon/Lonestar mitigation activities, would not involve the extraction of groundwater for purposes such as consumption or irrigation, and no associated impacts would result. The project would entail the construction of impervious surfaces that would slightly reduce local infiltration/recharge capacity, although this reduction would be minor in nature due to the relatively small area involved (i.e., approximately two percent of the 9,580-acre Water Tanks hydrologic subarea), as well as the fact that permanent shallow groundwater is generally absent in the project vicinity (as described in Section 3.11.2). Perched groundwater requiring extraction and disposal to accommodate project construction could potentially be encountered under any of the build alternatives (with such conditions not anticipated from the described habitat mitigation activities, due to the surficial nature of associated earthwork at the Lonestar Ridge West mitigation parcel). Related dewatering operations would not adversely affect groundwater reservoirs, however, based on the following considerations: (1) construction-related dewatering, if required, would be minor and short-term in nature, and would therefore not result in adverse effects such as aquifer drawdown; and (2) any extracted groundwater would likely be treated (if required) and discharged on site, and would therefore contribute to local aquifer recharge (i.e., through on-site infiltration). Construction dewatering, if required, would also be subject to applicable NPDES and Caltrans requirements related to water quality concerns, as described in Section 3.12.

No Build Alternative

Under the No Build Alternative, the described development actions for the three build alternatives and variations would not occur, and associated hydrology and floodplain impacts would result.

3.11.4 Avoidance, Minimization, and/or Mitigation Measures

Preferred Alternative and Draft EIR/EIS Build Alternatives and Variations

Based on the discussions provided above in Section 3.11.3, implementation of the Preferred Alternative or any of the Draft EIR/EIS build alternatives, with or without the potential variations, would potentially result in a number of hydrology and hydraulic impacts. No hydrologic impacts would result from the Johnson Canyon/Lonestar mitigation activities, based on the nature of associated actions (i.e., habitat preservation, restoration and/or enhancement). Per the discussion of floodplains in Section 3.11.3, no associated impacts would result from project implementation under any of the build alternatives or related activities, as well as the Lonestar Ridge West and Lonestar North biological mitigation parcels. Because all or part of the Johnson Canyon site and Lone Star South parcel biological mitigation areas are located within a mapped floodplain, an associated LHS will be conducted for the proposed mitigation activities at a later date as part of a separate project analysis. A number of avoidance and minimization measures related to hydrologic and hydraulic issues have been identified for the Preferred Alternative and all of the Draft EIR/EIS build alternatives, including the use of appropriate drainage facilities such as inlets, pipes, channels/ditches, basins and cross drains. Final drainage facilities will be determined during the project design phase, as part of detailed hydrology/hydraulic reports to be prepared based on final project design. Specifically, such analyses encompass appropriate design, sizing, and location of proposed storm drain facilities, as well as continued consultation with applicable federal, state, and local agencies regarding issues including watershed development, storm drain design/capacity, and regulatory conformance. Implementation of the applicable conclusions and recommendations/ requirements identified in the detailed project hydrology/hydraulic reports would avoid or effectively minimize all potential impacts related to hydrology and floodplain issues.

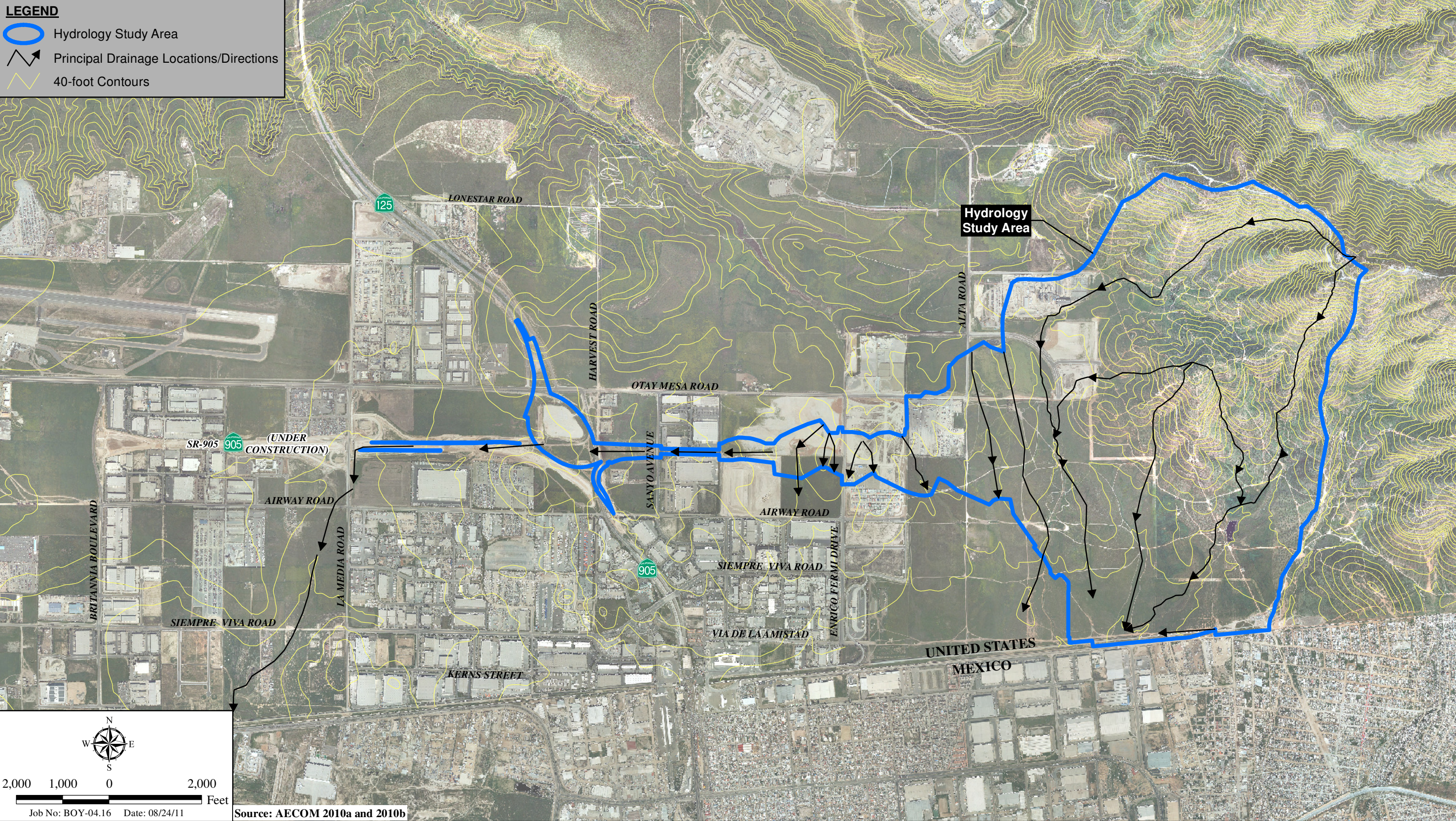
No Build Alternative

No impacts were identified for the No Build Alternative. No project action would occur under the No Build Alternative; therefore, no associated avoidance, minimization or mitigation measures would be required.

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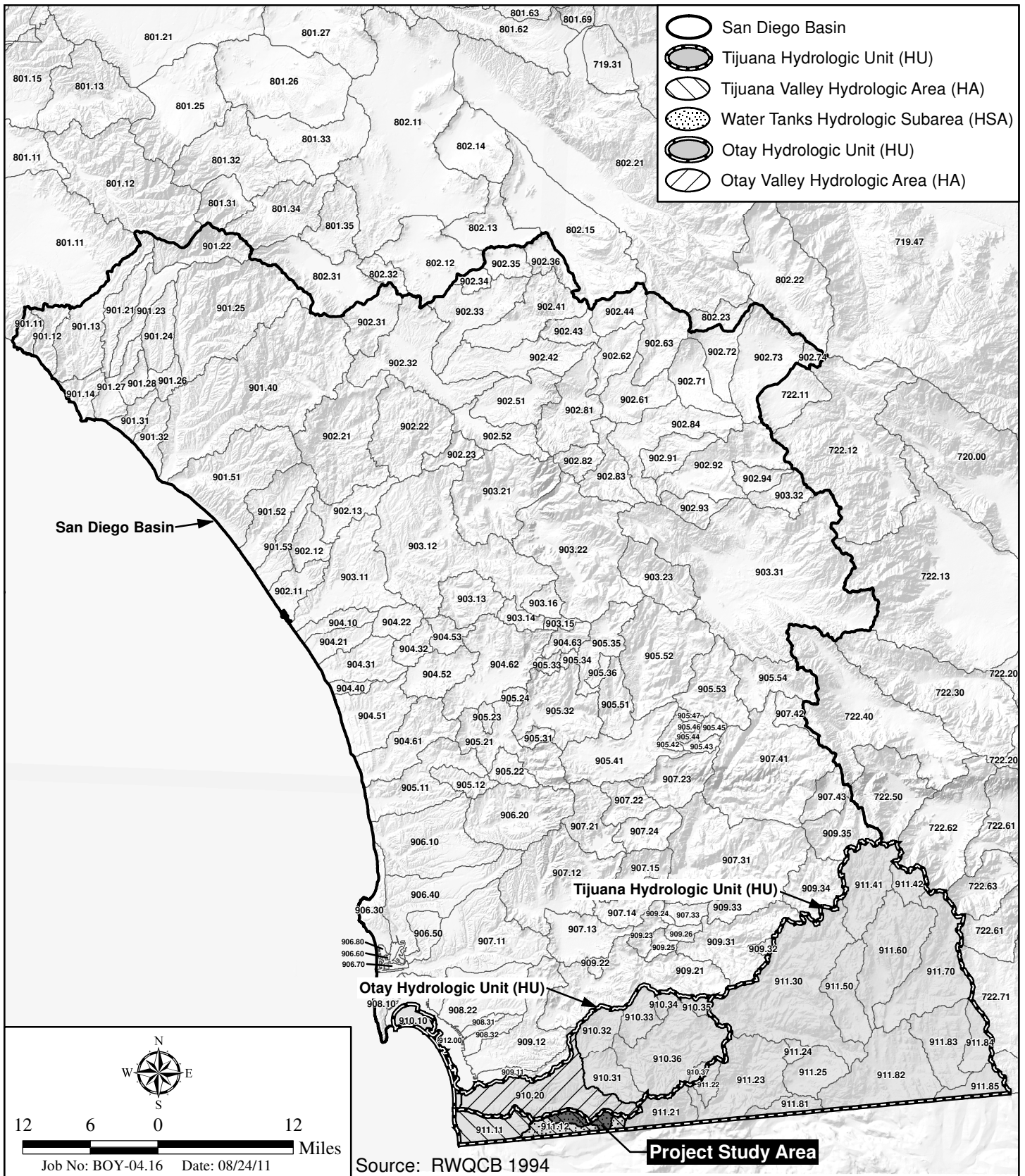
LEGEND

-  Hydrology Study Area
-  Principal Drainage Locations/Directions
-  40-foot Contours



Project Area Drainage Map

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS



Project Location within Local Hydrologic Designations

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

Figure 3.11-2

3.12 WATER QUALITY AND STORM WATER RUNOFF

3.12.1 Regulatory Setting

The project is subject to a number of regulatory requirements related to water quality, as outlined below. These guidelines are intended to prevent or reduce adverse effects related to water quality through efforts such as preventing or minimizing the generation of sediment- and other contaminant-laden runoff, as well as treating runoff to remove sediment and other contaminants prior to off-site discharge.

International Boundary and Water Commission

The IBWC is a bi-national organization that oversees projects along the U.S. - Mexico Border with the potential to generate impacts related to issues including environmental concerns. With respect to water quality, IBWC guidelines identify requirements including "[t]he prevention of pollution; and meeting applicable environmental laws, regulations and other pertinent requirements." For the proposed project, this would entail designing the storm drain system to ensure that there is no net increase in post development flows from the project site, as well as conforming with appropriate elements of the federal CWA and related requirements as outlined below.

Federal Requirements: Clean Water Act

In 1972, Congress amended the Federal Water Pollution Control Act, making the addition of pollutants to the waters of the U.S. from any point source unlawful, unless the discharge is in compliance with an NPDES permit. Known today as the CWA, Congress has amended it several times. In the 1987 amendments, Congress directed dischargers of storm water from municipal and industrial/construction point sources to comply with the NPDES permit scheme.. Important CWA sections are:

- Sections 303 and 304 require states to promulgate water quality standards, criteria, and guidelines.
- Section 401 requires an applicant for a federal license or permit to conduct any activity, which may result in a discharge to waters of the U.S., to obtain certification from the State that the discharge will comply with other provisions of the act (most frequently required in tandem with a Section 404 permit request, see below).
- Section 402 establishes the NPDES, a permitting system for the discharge (except for dredge or fill material) of any pollutant into waters of the U.S.. The RWQCB administers this permitting program in California. Section 402(p) requires permits for discharges of storm water from industrial/construction and municipal separate storm sewer systems (MS4s).
- Section 404 establishes a permit program for the discharge of dredge or fill material into waters of the United States. This permit program is administered by the USACE.

The objective of the CWA is “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.”

USACE issues two types of 404 permits: Standard and General permits. There are two types of General permits, Regional permits and Nationwide permits. Regional permits are issued for a general category of activities when they are similar in nature and cause minimal environmental effect. Nationwide permits are issued to authorize a variety of minor project activities with no more than minimal effects.

There are two types of Standard permits: Individual permits and Letters of Permission. Ordinarily, projects that do not meet the criteria for a Nationwide Permit may be permitted under one of USACE's Standard permits. For Standard permits, the USACE decision to approve is based on compliance with EPA's Section 404 (b)(1) Guidelines (EPA CFR 40 Part 230), and whether permit approval is in the public interest. The 404(b)(1) Guidelines were developed by the EPA in conjunction with USACE, and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative which would have less adverse effects. The Guidelines state that USACE may not issue a permit if there is a least environmentally damaging practicable alternative (LEDPA) to the proposed discharge that would have less effects on waters of the U.S., and not have any other significant adverse environmental consequences. Per Guidelines, documentation is needed that a sequence of avoidance, minimization, and compensation measures has been followed, in that order. The Guidelines also restrict permitting activities that violate water quality or toxic effluent standards, jeopardize the continued existence of listed species, violate marine sanctuary protections, or cause "significant degradation" to waters of the U.S. In addition every permit from the USACE, even if not subject to the 404(b)(1) Guidelines, must meet general requirements (see 33 CFR 320.4). A discussion of the LEDPA determination, if any, for the document is included in the Wetlands and Other Waters section.

State Requirements: Porter-Cologne Water Quality Control Act

California's Porter-Cologne Act, enacted in 1969, provides the legal basis for water quality regulation within California. This Act requires a "Report of Waste Discharge" for any discharge of waste (in a liquid, solid, or gaseous state) to land or surface waters that may impair beneficial uses for surface and/or groundwater of the State. It predates the CWA and regulates discharges to waters of the State. Waters of the State include Waters of the U.S. and certain other waters, such as groundwater and surface waters that are not considered Waters of the U.S. Additionally, it prohibits discharges of "waste" as defined and this definition is broader than the CWA definition of "pollutant". Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements (WDRs) and may be required even when the discharge is already permitted or exempt under the CWA.

The State Water Resources Control Board (SWRCB) and RWQCBs are responsible for establishing the water quality standards (objectives and beneficial uses) required by the CWA, and regulating discharges to ensure compliance with the water quality standards. Details regarding water quality standards in a project area are contained in the applicable RWQCB Basin Plan. States designate beneficial uses for all water body segments, and then set criteria necessary to protect these uses. Consequently, the water quality standards developed for particular water segments are based on the designated use and vary depending on such use. In addition, each state identifies waters failing to meet standards for specific pollutants, which are then state-listed in accordance with CWA Section 303(d). If a state determines that waters are impaired for one or more constituents and the standards cannot be met through point source controls, the CWA requires the establishment of Total Maximum Daily Loads (TMDLs). TMDLs specify allowable pollutant loads from all sources (point, non-point, and natural) for a given watershed.

State Water Resources Control Board and Regional Water Quality Control Boards

The SWRCB administers water rights, water pollution control, and water quality functions throughout the state. RWQCBs are responsible for protecting beneficial uses of water resources within their regional jurisdiction using planning, permitting, and enforcement authorities to meet this responsibility.

NPDES Program

Municipal Separate Storm Sewer Systems

Section 402(p) of the CWA requires the issuance of NPDES permits for five categories of storm water dischargers, including MS4s. The EPA defines an MS4 as any conveyance or system of conveyances (roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels, and storm drains) owned or operated by a state, city, town, county, or other public body having jurisdiction over storm water, that are designed or used for collecting or conveying storm water. The SWRCB has identified Caltrans as an owner/operator of an MS4. This permit covers all Caltrans rights-of-way, properties, facilities, and activities in the state. The SWRCB or the RWQCB issues NPDES permits for five years, and permit requirements remain active until a new permit has been adopted.

Caltrans's MS4 Permit, under revision at the time of this update, contains three basic requirements:

1. Caltrans must comply with the requirements of the Construction General Permit (see below);
2. Caltrans must implement a year-round program in all parts of the State to effectively control storm water and non-storm water discharges; and
3. Caltrans storm water discharges must meet water quality standards through implementation of permanent and temporary (construction) BMPs and other measures.

To comply with the permit, Caltrans developed the Statewide Storm Water Management Plan (SWMP) to address storm water pollution controls related to highway planning, design, construction, and maintenance activities throughout California. The SWMP assigns responsibilities within Caltrans for implementing storm water management procedures and practices, as well as training, public education and participation, monitoring and research, program evaluation, and reporting activities. The SWMP also describes the minimum procedures and practices Caltrans uses to reduce pollutants in storm water and non-storm water discharges. It outlines procedures and responsibilities for protecting water quality, including the selection and implementation of BMPs. The proposed project would be programmed to follow the guidelines and procedures outlined in the latest SWMP to address storm water runoff.

Incorporated within the SWMP is the SWDR and its associated checklists. The SWDR documents the relevant storm water design decisions made regarding project compliance with the MS4 NPDES permit. The preliminary information in the SWDR prepared during the Project Initiation Document (PID) phase will be reviewed, updated, confirmed, and if required, revised in the SWDR prepared for the later phases of the project. The information contained in the SWDR may be used to make more informed decisions regarding the selection of BMPs and/or recommended avoidance, minimization, or mitigation measures to address water quality impacts.

Construction General Permit

Construction General Permit Order No. 2009-009-DWQ was adopted on September 2, 2009 and became effective on July 1, 2010. The permit regulates storm water discharges from construction sites which result in a Disturbed Soil Area (DSA) of one acre or greater, and/or are smaller sites that are part of a larger common plan of development. By law, all storm water discharges associated with construction activity where clearing, grading, and excavation results in soil disturbance of at least one acre must comply with the provisions of the Construction General Permit. Construction activity that results in soil disturbances of less than one acre is subject to this Construction General Permit if there is potential for significant water quality impairment resulting from the activity as determined by the RWQCB. Operators of regulated construction sites are required to develop storm water pollution prevention plans (SWPPPs); to implement sediment, erosion, and pollution prevention control measures; and to obtain coverage under the Construction General Permit.

The 2009 Construction General Permit separates projects into Risk Levels 1, 2, or 3. Risk levels are determined during the planning and design phases, and are based on potential erosion and transport to receiving waters. Requirements apply according to the Risk Level determined. For example, a Risk Level 3 (highest risk) project would require compulsory storm water runoff pH and turbidity monitoring, and aquatic biological assessments before and after construction during specified seasonal windows. For all projects subject to the permit, applicants are required to develop and implement an effective SWPPP. In accordance with Caltrans' Standard Specifications, a Water Pollution Control Plan (WPCP) is necessary for projects with DSA of less than one acre.

Section 401 Permitting

Under Section 401 of the CWA, any project requiring a federal license or permit that may result in a discharge to a water body must obtain a 401 Certification, which certifies that the project will be in compliance with State water quality standards. The most common federal permits triggering 401 Certification are CWA Section 404 permits issued by USACE. The 401 permit certifications are obtained from the appropriate RWQCB, dependent on the project location, and are required before USACE issues a 404 permit.

In some cases the RWQCB may have specific concerns with discharges associated with a project. As a result, the RWQCB may issue a set of requirements known as WDRs under the State Water Code that define activities, such as the inclusion of specific features, effluent limitations, monitoring, and plan submittals that are to be implemented for protecting or benefiting water quality. WDRs can be issued to address both permanent and temporary discharges of a project.

3.12.2 Affected Environment

A Water Quality Report dated November 2010 was prepared for the proposed project, including the three SR-11 alignment alternatives (and associated variations), the POE and the CVEF site (AECOM 2010c). The results of this study are summarized below along with other applicable data. The following analysis is based on an approximately 537-acre study area for water quality and storm water runoff issues (study area), which includes the project R/W and/or disturbance limits for the Preferred Alternative and other build alternatives. Specifically, the water quality and storm water runoff study area is the same as the combined study area depicted on Figure 3.13-1, *General Geology Map*, under Geology/Soils/Seismic/Topography issues. In addition to the described study area, the following analysis also includes the proposed Johnson Canyon and Lonestar habitat mitigation sites, which would include approximately 177 acres of proposed mitigation activities located approximately 1.5 miles north of study area.

Drainage and Topographic Characteristics

As described in Section 3.11, the study area is located within the Tijuana Valley HA and the Water Tanks Hydrologic Subarea, both of which are subdivisions of the Tijuana HU (refer to Figure 3.11-2, *Project Location within Local Hydrologic Designations*). Surface drainage within the study area occurs as both concentrated (confined) flow in existing storm drains and natural drainage courses, and as unconfined (sheet) flow in areas such as vegetated slopes, graded sites, and streets. Drainage within the study area is predominantly intermittent and flows generally to the south and west, with all associated flows ultimately discharging to the Tijuana River and potentially reaching the Tijuana Estuary and adjacent Pacific Ocean shoreline. The Johnson Canyon and Lonestar biological mitigation sites are located within the Otay Valley HA of the Otay HU, with associated drainage flowing north to the Otay River via overland flow, Johnson Canyon and several smaller unnamed canyons. Flows in the river continue generally west and ultimately enter the southern end of San Diego Bay.

Topography in the study area consists of gently undulating hills and mesas, with on-site elevations ranging from approximately 640 feet above MSL along the northeastern boundary of the study area, to 490 feet above MSL near the southern boundary of the POE site. Topography in the vicinity of the biological mitigation sites is characterized by Johnson Canyon, several smaller unnamed canyons, and adjacent uplands and mesas. Associated elevations range from approximately 340 to 510 feet above MSL.

Soils and Erosion Potentials

Native soils within the build alternative corridors and mitigation areas are associated primarily with the Diablo, Huerhuero, Olivenhain, Salinas and Stockpen soil series, as mapped by the U.S. Soil Conservation Service (USSCS 1973). Specifically, the POE and the easternmost portion of the SR-11 corridor (approximately east of Siempre Viva Road) encompass Huerhuero Soils, while the SR-11 alignment between Siempre Viva Road and Sanyo Avenue includes mostly Diablo Soils. West of Sanyo Avenue, mapped soils are mainly associated with the Salinas and Stockpen Soil Series, although most of this area has been previously graded and/or developed (e.g., in association with SR-905), with native topsoils likely mixed with and/or replaced by engineered fill. Soils at the mitigation sites include cobbly loams of the Olivenhain Series within the Johnson Canyon site and the eastern and central parcels of the Lonestar site, and Stockpen soils in the western Lonestar parcel.

Identified erosion potential for the on-site Huerhuero Soils (Huerhuero Loam, 2 to 9, 5 to 9, and 9 to 15 percent slopes) is given as slight to moderate, based on generally shallow slopes and relatively high clay content. Similarly, identified erosion potential for Diablo Soils (Diablo Clay 2 to 9 percent slopes, and 9 to 15 percent slopes) is listed as slight to moderate (USSCS 1973). Erosion potential is identified as slight for both the on-site Salinas (Salinas Clay Loam, 0 to 2 percent slopes) and Stockpen soils (Stockpen Gravelly Clay Loam, 2 to 5 percent slopes). Due to the fact that most or all of the Salinas and Stockpen soils in the study area have been altered or replaced as noted, however, the erosion potential in areas west of Sanyo Avenue (as well as other previously graded/developed sites) is likely moderate in association with sandy fill deposits. Erosion potential for the Olivenhain soils (Cobbly Loam, 30 to 50 percent slopes) is listed as high, based primarily on slope.

Groundwater

Based on the discussions provided in Section 3.11 and the project Water Quality Report, groundwater was not encountered during subsurface hydrogeologic investigations extending to depths of between 26.5 and 130 feet in the eastern portion of the study area (east of Alta Road), and no significant groundwater is anticipated to occur within the underlying Otay Formation. Percolation testing revealed that the percolation rates at the Project site are generally low, corresponding with the clayey (bentonite) and silty composition of the surficial soils and the dense, underlying sedimentary formation. Shallow and/or perched groundwater may occur in portions of the Johnson Canyon and Lonestar mitigation sites, especially areas within or adjacent to canyons.

Beneficial Uses

The San Diego Basin Plan (RWQCB 1994) establishes beneficial uses and water quality objectives for surface and groundwater resources. Beneficial uses are defined in the Basin Plan as “the uses of water necessary for the survival or well being of man, plus plants and wildlife.” Water quality objectives are identified as “the limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses.” Existing and potential beneficial uses identified in the Basin Plan for applicable inland surface and coastal waters within and downstream of the study area are summarized below (with definitions of individual beneficial uses provided in Section 4.2 of the project Water Quality Report, AECOM 2010c). While all of the waters listed below are potential receiving

waters for the project (with some uncertainty regarding surface water diversions/withdrawals in Mexico), direct discharge from the study area would be limited to a number of unnamed intermittent streams (refer to Figure 3.11-1, *Project Area Drainage Map*, of this Final EIR/EIS, and Figure 11 of the Water Quality Report). Direct discharge from the biological mitigation sites would include Johnson Canyon and a number of smaller unnamed (and intermittent) canyon drainages. Other downstream receiving waters would not receive direct discharge from the project due to the intervening distances at their closest points, including the Tijuana River (approximately two miles to the south), the Tijuana Estuary/Pacific Ocean (approximately eight miles to the west), and San Diego Bay (approximately eight miles to the west).

- Unnamed Intermittent Streams (Hydrologic Unit 911.12; Water Tanks Hydrologic Subarea). Identified existing beneficial uses include agricultural supply (AGR), non-contact recreation (REC-2), warm freshwater habitat (WARM), and wildlife habitat (WILD), with potential beneficial uses including industrial service supply (IND) and contact recreation (REC-1).
- Tijuana River (Hydrologic Unit 911.11; San Ysidro Hydrologic Subarea). Identified existing beneficial uses include REC-2; preservation of biological habitats of special significance (BIOL); WARM; WILD; and rare, threatened and endangered species (RARE). Potential beneficial uses include IND and REC-1.
- Tijuana River Estuary (Hydrologic Unit 911.11; San Ysidro Hydrologic Subarea). Identified existing beneficial uses include REC-1; REC-2; commercial and sport fishing (COMM); BIOL; estuarine habitat (EST); WILD; RARE; marine habitat (MAR); migration of aquatic organisms (MIGR); spawning, reproduction and/or early development (SPWN), and shellfish harvesting (SHELL). No potential beneficial uses are listed for the Tijuana River Estuary.
- Pacific Ocean. Identified existing beneficial uses include IND, navigation (NAV), REC-1, REC-2, COMM, BIOL, WILD, RARE, MAR, aquaculture (AQUA), MIGR, SPWN, and SHELL. No potential beneficial uses are listed for the Pacific Ocean.
- Otay River (Hydrologic Unit 910.20; Otay Valley HA). Identified existing beneficial uses include AGR, REC-2, WARM, WILD and RARE. Potential beneficial uses include IND and REC-1.
- Johnson Canyon (Hydrologic Unit 910.20; Otay Valley HA). Identified existing beneficial uses include AGR, REC-2, WARM and WILD. Potential beneficial uses include IND and REC-1.
- San Diego Bay. Identified existing beneficial uses include IND, NAV, REC-1, REC-2, COMM, BIOL, EST, WILD, RARE, MAR, MIGR, SPWN, and SHELL. No potential beneficial uses are listed for San Diego Bay.

No existing beneficial uses are identified for groundwater in the Water Tanks Hydrologic Subarea, with listed potential beneficial uses including municipal and domestic supply (MUN), AGR and IND. Existing beneficial uses identified for groundwater in the Otay Valley HA include MUN, AGR and IND, with no listed potential beneficial uses.

Water quality objectives include both narrative requirements (which can encompass qualitative and quantitative standards) and specific numeric objectives for identified constituents. Basin Plan beneficial uses and water quality objectives are used (along with other data) to identify Section 303(d) impaired waters and related contaminant restrictions as outlined below.

303(d) Impaired Water Bodies and Total Maximum Daily Loads

The RWQCBs produce bi-annual qualitative assessments of statewide water quality conditions. These assessments are focused on CWA Section 303(d) impaired water listings and scheduling for assignment of TMDL requirements. States are required to identify and document any and all polluted surface water bodies, with the resulting documentation referred to as the *Clean Water Act Section 303(d) List of Water Quality Limited Segments*, or more commonly the 303(d) list. This list of water bodies identifies the associated pollutants and TMDLs, along with pollutant sources and projected TMDL implementation schedules. A TMDL establishes the maximum amount of an impairing substance or stressor that a water body can assimilate and still meet water quality standards, and allocates that load among pollution contributors. TMDLs are quantitative tools for implementing the state's water quality standards, based on the relationship between pollution sources and water quality conditions.

The 303(d) list is the primary vehicle for protecting water quality in impaired waters bodies and for protecting beneficial uses. The most current (2006) approved 303(d) list identifies downstream receiving waters including the Tijuana River, Tijuana River Estuary, and Pacific Ocean shoreline, as summarized in Table 3.12-1, *Receiving Water Bodies 303(d) List Summary*. While TMDLs are not currently established for potential receiving waters associated with the study area, target dates for establishing local TMDLs are established and listed in Table 3.12-1.

Caltrans Target Design Constituents

As part of its own runoff characterization studies, Caltrans identifies pollutants with loads or concentrations that commonly exceed allowable standards, but that are considered treatable with Caltrans-approved BMPs. These pollutants are referred to as Targeted Design Constituents (TDCs), and include sediment, metals (total and dissolved copper, lead, and zinc), nitrogen, phosphorus, and general metals.

Project-related runoff would flow into a number of unnamed intermittent drainages after leaving the project storm drain/water quality treatment system, although it would not directly enter water quality sensitive areas (refer to Section 3.11 of this Final EIR/EIS, as well as Section 6.0 and Figures 11 and 13 in the Water Quality Report). Project flows would ultimately enter the Tijuana River, and could potentially reach the Tijuana River Estuary and adjacent Pacific Ocean shoreline. While none of the noted intermittent streams in the project vicinity are identified as 303(d) listed waters, the Tijuana River, Tijuana River Estuary, and adjacent Pacific Ocean shoreline are listed for a number of pollutants as shown on Table 3.12-1, including several pollutants identified as TDCs (AECOM 2010c). Runoff from the proposed mitigation sites would flow north to the Otay River and ultimately the southern end of San Diego Bay, and would not directly enter water quality sensitive areas.

**Table 3.12-1
RECEIVING WATER BODIES 303(d) LIST SUMMARY**

Water Body Name	Pollutant/Stressor¹	Estimated Size Affected	Proposed TMDL Completion Date
Tijuana River	Eutrophic Conditions	6 miles	2019
	Indicator Bacteria	6 miles	2010
	Low Dissolved Oxygen	6 miles	2019
	Pesticides	6 miles	2019
	Solids	6 miles	2019
	Synthetic Organics	6 miles	2019
	Trace Elements	6 miles	2019
	Trash	6 miles	2019
Tijuana River Estuary	Eutrophic Conditions	1,319 acres	2019
	Indicator Bacteria	1,319 acres	2010
	Lead	1,319 acres	2019
	Low Dissolved Oxygen	1,319 acres	2019
	Nickel	1,319 acres	2019
	Pesticides	1,319 acres	2019
	Thalium	1,319 acres	2019
	Trash	1,319 acres	2019
	Turbidity	1,319 acres	2019
Pacific Ocean Shoreline (Tijuana HU)	Indicator Bacteria	3 miles ²	2010

¹ Identified potential sources for all listed pollutants/stressors associated with the Tijuana River and Pacific Ocean shoreline are limited to point/non-point sources. Identified potential sources for listed pollutants/stressors associated with the Tijuana River Estuary are limited to point/non-point sources, except for low dissolved oxygen (urban runoff and storm sewers in addition to point/non-point sources), and turbidity (source unknown).

² The affected three miles of the Pacific Ocean shoreline extends north from the international border with Mexico.
Source: SWRCB (2007).

Surface Water Quality

Surface water within the study area and mitigation sites consists predominantly of intermittent flows from storm events, with runoff in the study area also including (to a lesser extent) landscape irrigation. Storm flows are subject to variations in water quality due to local conditions such as runoff volume/velocity and land use. The Tijuana River watershed is classified as a Category I (impaired) watershed by the SWRCB due to a variety of water quality problems, including non-point agricultural sources on the U.S. side of the border and numerous point and non-point sources on the Mexican side (AECOM 2010c). The Tijuana River Estuary, a National Estuarine Sanctuary that supports a variety of threatened and endangered plants and animals, is threatened by inflows from the Tijuana River containing high concentrations of coliform bacteria, sediment, trace metals (copper, lead, zinc, chromium, nickel, and cadmium), PCBs, and other urban, agricultural, and industrial pollutants. The Tijuana River Watershed Urban Runoff Management Program (WURMP), conducted pursuant to applicable NPDES requirements, identifies high priority water quality problems within the Tijuana River HA, including the following pollutants/conditions in areas within and downstream of the study area: bacteria/pathogens, sediment (total suspended solids/turbidity), pesticides (diazinon), gross pollutants, total metals, and organics (AECOM 2010c).

The San Diego Bay WURMP (which includes the Otay HU) identifies bacteria as the only high priority water quality problem in the Otay Valley HA, with potential sources including residential areas,

businesses (e.g., food establishments), agriculture, and construction activities (San Diego Unified Port District [SDUPD] et al. 2008). Bacteria is also identified as the only high priority water quality problem for the Otay Valley HA in the San Diego Bay WURMP 2009-2010 Annual Report, although total dissolved solids (TDS), chromium, nutrients and pesticides are listed as “potential constituents of concern” (SDUPD et al. 2011).

Caltrans has conducted runoff monitoring from various transportation facilities throughout California. The objectives of this monitoring include ensuring compliance with NPDES permit requirements, producing scientifically credible runoff data from various Caltrans facilities, and providing information to assist in developing effective storm water management strategies. The results of the monitoring indicated that results could be significantly influenced by various factors such as:

- Traffic Volumes. Pollutant concentrations in storm water runoff increase with higher traffic volumes.
- Cumulative Seasonal Precipitation (CSP). As CSP increases, pollutant concentration decreases, indicating that pollutants wash off during the early wet season and tend to decrease thereafter.
- Antecedent Dry Periods. As the duration of the dry period increases, there is a corresponding increase in pollutant concentrations contained in the subsequent runoff.
- Total Event Rainfall. As total event rainfall increases, pollutant concentration decreases due to dilution from larger storms. Pollutant concentrations tend to be highest in the initial portion of the runoff, and to become more diluted as the storm continues.
- Maximum Rainfall Intensity. Rainfall intensity has a similar effect as noted for total event rainfall, because maximum rainfall intensity provides the highest runoff volume and correspondingly decreases pollutant concentrations.
- Drainage Areas. In larger drainage areas, a number of individual pollutant concentrations tended to be lower for highway-related runoff.
- Impervious Fraction of the Drainage Area. This factor did not have a consistent effect on pollutant concentrations. That is, while higher impervious areas tended to increase the concentration of some pollutants and decrease others, it was the weakest effect of all the factors evaluated.

Groundwater Quality

No known groundwater quality data are available for the study area and immediate vicinity, or the biological mitigation sites. The occurrence of permanent shallow groundwater is generally not anticipated in the study area and vicinity. Specifically, six borings were drilled to depths of between 26.5 and 130 feet in the eastern portion of the study area (east of Alta Road) as part of the project Hydrogeologic Site Assessment (Caltrans 2009c), with no groundwater encountered. Shallow groundwater may be present in the vicinity of the biological mitigation sites, based on the location of the nearby Otay Valley Regional Groundwater Basin and a number of local canyons (refer to Section 3.11 for additional discussion of local groundwater potential).

3.12.3 Environmental Consequences

Preferred Alternative and Draft EIR/EIS Build Alternatives and Variations

The following analysis of potential water quality and storm water runoff impacts is applicable to the Preferred Alternative, all three Draft EIR/EIS build alternatives (with or without the associated variations), and the Johnson Canyon and Lonestar mitigation sites. This conclusion is based on the fact that all of the potential alternatives and variations encompass similar activities, facility types and/or locations, as well as similar water quality and storm water runoff conditions. Accordingly, while the specific locations and extent of associated water quality and storm water runoff impacts would vary somewhat among the build alternatives, variations, and mitigation sites, the overall type, nature and level of these impacts would be essentially the same under all potential alternative/variation scenarios. For conditions where specific differences among the alternatives or sites may potentially affect water quality and storm water runoff considerations (e.g., proposed disturbance areas), the differences are called out as appropriate.

Potential water quality impacts from the project are associated with both short-term construction activities and long-term operation and maintenance of the proposed facilities. Both short- and long-term water quality impacts could potentially affect the identified downstream 303(d) receiving waters, including applicable portions of the Tijuana River, Tijuana River Estuary and Pacific Ocean shoreline.

Short-term Construction Impacts

Potential water quality impacts related to project construction include erosion/sedimentation; the on-site use and storage of construction-related hazardous materials (e.g., fuels, etc.); the potential occurrence and removal/disposal of materials containing lead-based paint, asbestos or treated wood; and/or disposal of extracted groundwater (if required), as described below.

Erosion and Sedimentation

Implementation of the Preferred, Two Interchange, One Interchange and No Interchange alternatives would result in approximately 358, 371, 370 and 352 acres of DSA, respectively, from grading and construction. All of the DSA acreages associated with the Draft EIR/EIS build alternatives would increase somewhat under the potential variations, although as previously noted the overall type, nature and level of the associated impacts would not change substantially. Specifically, DSA increases identified for project variations in the Water Quality Technical Report range from approximately 0.5 acre for the 46-foot Median Variation, to 23 acres for the Siempre Viva Full Interchange Variation of the Two Interchange Alternative (AECOM 2010c). Detailed descriptions and quantifications of DSA acreages associated with all the potential variation scenarios are provided in Section 5.0 (Table 5.2) of the project Water Quality Report (AECOM 2010c). The proposed mitigation areas would result in up to approximately five acres of DSA, in association with minor grading to prepare applicable areas for restoration and/or enhancement activities. The remaining approximately 172 acres within the mitigation sites are proposed for preservation of existing habitats, with no associated DSA.

If appropriate BMPs are not incorporated effectively, project construction activities could potentially result in related erosion and off-site sediment transport (sedimentation) from efforts such as removal of surface-stabilizing features (e.g., vegetation removal during clearing and grubbing), excavation of existing compacted materials from cut areas, and redeposition of excavated (and/or imported) material as fill in proposed development sites. Project-related erosion could potentially result in the influx of sediment into downstream receiving waters (including 303[d] listed waters as previously described), with

associated water quality effects such as turbidity and the transport of other contaminants that tend to adhere to sediment particles.

The project DSAs would be subject to potential short-term erosion and sedimentation impacts as noted above, particularly between the beginning of grading/construction and the installation of pavement/structures and establishment of permanent cover in landscaped areas. Potential construction-related water quality impacts would be addressed through conformance with the Caltrans NPDES Permit and the NPDES Construction General Permit. Avoidance and/or minimization measures to ensure conformance with NPDES permit requirements related to erosion and sedimentation are summarized in Section 3.12.4.

Construction-related Hazardous Materials

Project construction under the Preferred Alternative or any of the other build alternatives/ variations would involve the on-site use, storage and/or generation of potentially hazardous materials such as vehicle fluids (oil, grease and petroleum), asphaltic emulsions, joint and curing compounds, solvents and thinners, paints, sandblasting materials, treated lumber, concrete debris, trash, base and sub-base materials, and portable septic system wastes. Proposed mitigation activities at the Johnson Canyon and Lonestar sites would also involve the on-site use, storage and/or generation of potentially hazardous materials, including vehicle fluids, trash, and portable septic system wastes. Without adequate controls, the accidental discharge of such materials during project construction could potentially result in water quality impacts if they reach downstream receiving waters. Potential impacts from construction-related hazardous materials are of particular concern for impaired segments of these receiving waters (refer to Table 3.12-1), as well as for materials such as petroleum compounds that can be toxic to aquatic species in low concentrations. Proposed construction-related BMPs associated with hazardous material control are summarized in Section 3.12.4.

Lead-based Paint, Asbestos, and Treated Wood

The project Initial Site Assessments (ISAs) conclude that lead-based paint, asbestos-containing materials, and treated wood (e.g., with creosote) may be present in association with existing freeway (or other) structures in the study area (Ninyo & Moore 2010c, 2007b). Discharge of these contaminants (if present) in site runoff during project demolition/construction could potentially affect the quality of downstream receiving waters, including impaired waters as previously described. Implementation of the Preferred Alternative or any of the other build alternatives/ variations, would include conformance with recommendations from the project ISAs, as well as applicable regulatory and technical standards. Specifically, field investigation/sampling would be conducted to verify the ISA observations and conclusions, and appropriate remediation measures would be implemented (if required) pursuant to applicable regulatory requirements (refer to Section 3.15 for additional information). No lead-based paint, asbestos-containing materials, treated wood, or other potentially hazardous materials are known or anticipated to be present at the Johnson Canyon and Lonestar mitigation sites, due to the undeveloped nature of those areas.

Disposal of Extracted Groundwater

While permanent shallow groundwater is generally not expected to occur within the study area or be encountered at the biological mitigation sites, project-related grading/excavation and construction activities could potentially encounter perched aquifers requiring groundwater extraction and disposal (e.g., to facilitate equipment access and excavation). Project construction would require conformance with applicable NPDES criteria regarding disposal of extracted groundwater (pursuant to RWQCB Order No. R9-2008-0002).

Long-term Operation and Maintenance Impacts

After completion of construction, erosion and sedimentation effects would be minimal for the Preferred Alternative or any of the other build alternatives/variations and the proposed mitigation sites. This conclusion is based on the fact that no net increase of off-site runoff would result from the project (refer to Section 3.11 for additional discussion), as well as the proposed stabilization of project-related DSAs through installation of pavement, permanent erosion control and/or landscaping.

Implementation of the Preferred Alternative would result in approximately the same (or a slightly reduced) area of new impervious surfaces as noted below for the Two Interchange and One Interchange alternatives (i.e., approximately 126 acres). Implementation of the Two Interchange and One Interchange alternatives would both result in an estimated 126 acres of additional impervious surfaces, while the No Interchange alternative would generate approximately 119 acres of new impervious surfaces. The acreages for any of the Draft EIR/EIS build alternatives would increase somewhat under the potential median and interchange design variations, although as previously noted the overall type, nature and level of the associated impacts would not change substantially. Specifically, impervious surface increases identified for project variations in the Water Quality Technical Report range from approximately 1.3 acres for the 46-foot Median Variation, to 7 acres for the Siempre Viva Road Full Interchange Variation of the Two Interchange Alternative (AECOM 2010c). Detailed descriptions and quantifications of impervious surface acreages associated with all the potential variation scenarios are provided in Section 5.0 (Table 5.1) of the project Water Quality Report (AECOM 2010c). No new impervious surfaces would result from proposed activities at the Johnson Canyon and Lonestar mitigation sites.

Potential long-term water quality impacts from the Preferred Alternative or any of the other build alternatives/variations, involve the generation of pollutants related to proposed facility operation and maintenance. Specifically, this would include: (1) sediment (total suspended solids and total dissolved solids) from natural erosion; (2) nutrients (nitrogen/phosphorous) from sources such as landscaping, fertilizers, atmospheric deposition, emulsifiers, surfactants and automobile exhaust; (3) organic matter in soil; (4) pesticides/herbicides from landscaping; (5) metals (dissolved and particulate) from combustion of fossil fuels, wear of brake pads, and corrosion of metal structures; and (6) trash and debris. The potential discharge of these contaminants could affect downstream receiving waters, including impaired segments of the Tijuana River, Tijuana River Estuary and Pacific Ocean shoreline as previously described.

Storm water runoff from roadways and shoulders under the Preferred Alternative or any of the other build alternatives, would drain directly into proposed biofiltration swales (bioswales) running parallel to the road wherever possible to capture, convey and treat associated runoff. Inlets with concrete aprons would be placed at the downstream end of these swales as needed to route applicable flows into detention facilities, and to comply with any retention and/or peak flow attenuation criteria. In a few cases, pavement flows would be captured within bioswales and discharged to separate off-site cross culverts without being routed to a detention/retention facility. Associated water quality, detention and retention requirements would still be met within these areas, however, due to the minor extent of associated flows and the noted use of bioswales. The project would not significantly impact beneficial uses, as the build alternatives include treatment measures in conformance with jurisdictional requirements, including Caltrans NPDES standards for long-term water quality effects. Preliminary BMPs identified to address project-related impacts and associated conformance requirements are summarized in Section 3.12.4.

Potential long-term water quality impacts associated with the Johnson Canyon and Lonestar mitigation sites would be limited to sediment from natural erosion, although such effects are anticipated to be minimal as previously noted. No additional potential pollutants would be associated with these sites, based on the nature of proposed activities, with the restored/enhanced native habitats likely to improve local water quality conditions through increased natural runoff filtering.

No Build Alternative

Under the No Build Alternative, the described development actions for the build alternatives and variations would not occur, and no associated impacts to water quality and storm water runoff would result.

3.12.4 Avoidance, Minimization, and/or Mitigation Measures

Preferred Alternative and Draft EIR/EIS Build Alternatives and Variations

Implementation of the Preferred Alternative or any of the other build alternatives (with or without related variations) and the proposed mitigation activities, would potentially result in impacts related to water quality and storm water runoff. A number of associated avoidance and minimization measures are identified below that would apply to all of the build alternatives/variations (and selectively to the mitigation activities), and would prevent or minimize potential short- and long-term water quality impacts and ensure project conformance with applicable regulatory requirements. Specifically, these measures include the use of short-term BMPs to prevent or minimize potential impacts from construction operations, as well as design pollution prevention, treatment, and maintenance BMPs for potential long-term impacts.

Short-term (Construction) BMPs

Six construction BMP categories are identified in the Caltrans *Construction Site Best Management Practices Manual* (2003a) to address potential short-term water quality impacts, including temporary soil stabilization, temporary sediment control, wind erosion control, tracking control, non-storm water management, and waste management and materials pollution control. Typical construction BMPs from the Project Water Quality Report, Caltrans Manual and current NPDES requirements that are applicable to the project are summarized below. Specific construction BMPs for the proposed project (including proposed mitigation activities at the Johnson Canyon and Lonestar sites) will be determined during the Design Phase to ensure conformance with all associated regulatory requirements (including preparation/implementation of a project-specific SWPPP as outlined in Section 3.12.1).

Temporary Soil Stabilization BMPs

- Implement appropriate construction scheduling and sequencing to: (1) reduce the amount and duration of soil exposed to erosion and vehicle tracking; (2) minimize operations during applicable precipitation events as feasible; and (3) incorporate applicable erosion and sediment controls prior to/during predicted rain events per regulatory requirements.
- Avoid or minimize work and associated construction-related impacts in ESAs.
- Permanently preserve existing vegetation to the maximum extent feasible, and preserve vegetation for as long as possible in areas to be graded/excavated.
- Stabilize disturbed slopes during construction with temporary erosion control in areas where no operations have occurred for 14 days, or before the onset of applicable predicted rain events.
- Use erosion control/stabilizing measures, such as temporary mulch, hydroseeding, soil binders, geotextiles, swales, outlet protection, slope drains, streambank stabilization, and/or slope roughening in applicable areas to reduce erosion.

Temporary Sediment Control BMPs

- Use sediment controls to prevent off-site sediment transport and protect the construction site perimeter, soil stockpiles and slopes not under construction for applicable time periods. Specific sediment control measures may include implementation of applicable monitoring/testing efforts, as well as the use of temporary silt fence, check dams, sediment/desilting basins, sediment traps, fiber rolls, active treatment systems, gravel bags, street sweeping/vacuuming, sand bag barriers, straw bales, slope drains, and/or inlet protection.

Wind Erosion BMPs

- Implement regular watering and/or application of other dust palliatives as necessary to prevent or alleviate dust generation.
- Comply with local dust control requirements.

Tracking Control BMPs

- Implement applicable tracking control efforts for construction vehicles and equipment, potentially including stabilized construction entrances/exits, stabilized construction roadways, entrance/outlet tire washing, and street sweeping.

Non-storm Water BMPs

- Implement appropriate water conservation practices such as leak inspection/repair, and use of “dry washing” methods wherever feasible.
- Implement appropriate controls (e.g., testing, filtering and/or treatment) of extracted groundwater prior to discharge, if required, in conformance with applicable NPDES and Caltrans requirements.
- Employ appropriate pollutant-control measures during paving, grinding, pile driving and other construction operations (especially in areas within or adjacent to water courses), including catchment/containment devices for equipment and debris, protecting drainage inlets (e.g., with filter fabric), proper application/control of curing/finishing compounds, regular waste collection/removal, sweeping/vacuuming, preventing wash/rinse water and slurries from entering storm drains or water courses, and stockpiling spill kits and clean up materials.
- Implement appropriate planning, identification and reporting measures to avoid, document and report illicit connections and illegal material discharges.
- Use appropriate practices and procedures to avoid and manage pollutants associated with discharges from potable water and irrigation sources, including regular inspection/repair to ensure proper working order, diverting discharges away from pollutant sources, reuse of water discharges (e.g., for irrigation), and minimizing discharge rates and amounts.
- Ensure that all equipment maintenance, staging, and dispensing of fuel, oil, coolant, or any other such activities occur in designated areas. Implement appropriate controls in vehicle/equipment washing, maintenance and fueling areas to avoid or minimize pollutant discharge into storm drains or water courses. Specific measures may include the use of covers, impermeable liners and containment structures, as well as stockpiling of absorbent clean up materials.

Waste Management and Materials Pollution Control BMPs

- Use properly located, spaced, labeled, sealed and designed containers; raised (e.g., on pallets), covered, and/or enclosed facilities; and appropriate containment structures for all hazardous materials storage (including temporary storage).
- Avoid storing incompatible materials (e.g., chlorine and ammonia) in the same location.
- Maintain accurate and up-to-date written inventories and labels for all hazardous material storage and delivery activities/facilities.
- Designate specific hazardous material use, processing, storage/stockpile, clean up and disposal areas; use berms, ditches, covers, and/or impervious liners (or other applicable methods) to provide appropriate protection and containment; implement proper handling/disposal procedures and locations; and post proper storage and handling instructions in an appropriate location.
- Avoid storing hazardous materials near drains or surface water features, and place warning signs in areas of hazardous material use/storage and along drainages and storm drains (or other appropriate locations) to avoid inadvertent hazardous material disposal.
- Properly maintain all construction equipment and vehicles.
- Implement appropriate solid waste management efforts. Specifically, this may include proper location, containment and disposal of construction debris and wastes (e.g., locating dumpsters at least 50 feet from storm drains and water courses, use of sealed containers and watertight dumpsters, and regular trash collection/removal), stockpile management/containment, and regular inspection/clean up.
- Use appropriate waste control measures for operations located over or adjacent to water courses, such as bridge modification/construction and pile driving. Specifically, this may include efforts such as proper equipment maintenance, and control/containment of materials including vehicle fuels/fluids and demolition debris.
- Stockpile appropriate types and quantities of clean-up materials, and post regulatory agency telephone numbers and a summary guide of clean-up procedures, in readily accessible and conspicuous locations on the job site.
- Regularly (at least weekly) monitor and maintain hazardous material use/storage facilities and operations to ensure proper working order, and contain/clean up spills immediately upon discovery.
- Implement concrete waste management procedures such as the use of properly contained concrete washout facilities.
- Properly identify, manage, and dispose of contaminated soil.
- Properly locate, contain, and maintain portable wastewater facilities.
- Properly manage, collect, contain, and dispose of liquid wastes such as drilling fluids and dredging wastes.

Disposal of Extracted Groundwater

Specific BMPs to address potential water quality concerns from disposal of extracted groundwater would be determined during the associated NPDES Groundwater Permit process if required, based on site-specific conditions.

Long-term Operation and Maintenance

Based on information in the project Water Quality Report and associated Caltrans guidelines, implementation of the Preferred Alternative or any of the other build alternatives and variations would include the use of applicable design pollution prevention, permanent treatment, and maintenance BMPs, as outlined below.

Design Pollution Prevention BMPs

Design pollution prevention (DPP) BMPs consist of measures intended to reduce post-construction pollutant generation and discharge to the maximum extent practicable (MEP). Specifically, this involves measures to mimic the natural hydrologic regime, as well as efforts to avoid or minimize the introduction of pollutants into storm drains and natural drainages. Potential DPP BMPs proposed for the project in the Water Quality Report are outlined below, with associated design objectives to prevent downstream erosion, stabilize DSAs, and maximize vegetated surfaces consistent with existing Caltrans policies. These objectives would be met through identified DPP BMPs in the following four general categories: (1) consideration of downstream effects related to potentially increased flow; (2) preservation of existing vegetation; (3) use of concentrated flow conveyance systems; and (4) use of slope/surface protection systems.

Consideration of Downstream Effects Related to Potentially Increased Flow. Because the project would increase both the area of impervious surface and related runoff volumes/velocities, the associated effects to downstream channel stability would be evaluated and the following types of measures would be implemented as appropriate:

- Modify channel (both natural and man-made) lining materials, potentially including the use of vegetation, geotextile mats, rock and rip-rap.
- Use energy dissipation devices at culvert outlets.
- Smooth the transition between culvert outlets/headwalls/wing walls and channels to reduce turbulence and scour.
- Incorporate peak flow attenuation facilities to reduce peak discharges.

Preservation of Existing Vegetation. Desirable vegetation that provides sediment and erosion control measures would be protected wherever feasible, including areas where no construction activity is planned within the project limits or where construction would occur at a later date. The following types of measures would be incorporated as appropriate:

- Identify and delineate all areas of vegetation to be retained on contract documents.
- Delineate areas to be preserved in the field prior to the commencement of soil disturbing activities.

- Minimize disturbed areas by locating temporary roadways to avoid impacting existing vegetation, and following existing contours to reduce cut and fill requirements.
- Consider impacts to adjacent vegetation that needs to be preserved when removing vegetation.

Concentrated Flow Conveyance Systems. Concentrated flow conveyance systems consist of permanent design measures that are used alone or in combination to intercept and divert surface flows, and to convey and discharge concentrated flows with a minimum of soil erosion. The following types of measures would be implemented as appropriate:

- Design all DPP BMPs under this category in accordance with applicable portions of the Caltrans Highway Design Manual, including Chapters 813, 830 (Topics 836 and 834.4), 860, 820 (Topics 826 and 827), and 870.
- Use outlet protection devices where localized scour is anticipated.
- Evaluate the risk due to erosion, overtopping, flow backup, or washouts when selecting design flows.
- Consider run-on from off-site sources.
- Appropriately line conveyances when velocities exceed permissible limits.
- Use metal pipe down drains on slopes with grades of 4:1 (horizontal to vertical) or steeper. For slopes with grades that are flatter than 4:1, paved spillways would be used. Corrugated metal flumes with tapered entrances would be used on slopes with grades of 2:1 or flatter for low flow rates.

Slope/Surface Protection System. Surface protection consists of permanent design measures that are used alone or in combination to minimize erosion from completed, disturbed surfaces. A slope surface protection system could incorporate either a vegetated or hard surface. Vegetated surfaces have the advantage of reducing runoff volumes and velocities, which would consequently avoid or minimize erosion/sedimentation and the influx of other pollutants into the storm drain system. When site or slope conditions do not allow the adequate establishment of vegetation, hard surfaces are used. Examples of hard surfaces are rock slope protection, rock blankets, slope paving and gabions. The following measures would be incorporated as appropriate:

- Evaluate the project site based on soil type, climate and topography for the selection of the appropriate vegetation and planting strategy. The vegetation cover would be selected to reduce concentrated flow depths and velocities, as well as to increase the contact time between runoff and vegetation, both of which would improve infiltration and pollutant removal efficiency.
- Strip and stockpile topsoil and existing vegetation (duff) when feasible for use on the completed slopes before applying seed.
- Employ slope rounding, roughening or stepping where feasible to reduce concentrated flows and enhance the effectiveness of temporary and permanent hydroseeding.
- Use hard surfaces in areas where vegetation is difficult to maintain, or where vegetation would not provide adequate erosion control due to slope or soil conditions (e.g., culvert outlets and gore areas).
- Pave below bridge decks at abutments where it is difficult for vegetation to be established.

Permanent Treatment BMPs

Treatment BMPs consist of volume- or flow-based devices that remove pollutants from post-construction runoff to the MEP prior to discharge into drainage facilities and/or surface waters. They are typically designed to treat an identified volume of flow from a design storm event (the water quality flow), and to include adequate capacity to accommodate the remaining peak flow volume from the design (25-year) storm (e.g., through bypass structures). Preliminary assessment of potential treatment BMP types, locations and feasibility has been completed, based on considerations including climate, water volume, soil conditions, physical limitations, and environmental issues. As a result, the following treatment BMPs have been identified for the proposed project in the Water Quality Report (AECOM 2010c): (1) biofiltration strips/swales; (2) infiltration devices; and (3) detention devices. The identified treatment BMPs are described in detail in Section 6.2.1.2 of the project Water Quality Report (AECOM 2010c). These facilities would treat runoff from between 95 (One Interchange) and 99 percent (Two Interchange) of the additional paved areas associated with the project alternatives, and between 82 (Siempre Viva Full Interchange) and 131 percent (SR-125 Connector) of runoff from additional paved areas resulting from the project variations (refer to Table 6.3 of the project Water Quality Report). Treatment percentages for paved areas associated with the Preferred Alternative would be similar to those noted for the Two Interchange Alternative (99 percent), with the SR-125 Connector Variation (131 percent). Additional potential treatment BMPs that are approved for general use by Caltrans and may potentially be applicable to the proposed project include traction sand traps, dry weather flow diversion, gross solid removal devices, media filters, multi-chambered treatment trains, and wet basins (with these potential BMPs described in Appendix C of the Caltrans *Storm Water Quality Handbooks: Project Planning and Design Guide* [Caltrans 2010b]). The specific type, design, and location of treatment BMPs would be determined during the project design phase, based on considerations such as R/W limitations, environmental constraints and hydraulic capacity. In areas where treatment BMPs cannot be implemented (if applicable), vegetation preservation, landscaping, and erosion control efforts would be maximized. The project design would also consider implementing any future treatment BMPs that are approved by Caltrans based on ongoing research and monitoring programs.

Maintenance BMPs

Maintenance BMPs are water quality controls used to reduce pollutant discharges during highway maintenance and activities conducted at maintenance facilities. While maintenance activities are typically conducted to control pollutants and limited to dry weather to avoid potential storm water contact, individual operations can potentially result in the discharge of pollutants including petroleum products, sediment, trash and debris, metals, acidic/basic materials, nutrients, solvents, waste paint, and pesticides/herbicides. Maintenance BMPs are grouped into “families” based on individual activities and related conditions. Caltrans Maintenance Supervisors are required to ensure that appropriate BMPs are implemented for maintenance operations, pursuant to requirements in the Storm Water Quality Handbooks, Maintenance Staff Guide (Caltrans 2003d). Specific types of maintenance BMPs that may be applicable to the Preferred Alternative and any other build alternative include pavement repair controls (e.g., for concrete/asphalt debris and curing compounds), vegetation/irrigation management (e.g., chemical control and runoff prevention), street sweeping, slope and drainage facility repair, and storm drain stenciling.

The previously identified potential treatment BMPs for the proposed project would also be subject to applicable maintenance requirements, pursuant to the Caltrans Storm Water Quality Handbook Maintenance Staff Guide (2003d). Such maintenance would typically include regular inspection and as-needed repair, biannual vegetation management (e.g., removal of woody or excess vegetation), trash and debris removal, erosion/sedimentation remediation, removal of excess sediment, and removal of ponded water or other vector-related problems.

No Build Alternative

| No impacts were identified for the No Build Alternative. No project action would occur under the No Build Alternative; therefore, no associated avoidance, minimization or mitigation measures would be required.

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3.13 GEOLOGY/SOILS/SEISMIC/TOPOGRAPHY

3.13.1 Regulatory Setting

For geologic and topographic features, the key federal law is the Historic Sites Act of 1935, which establishes a national registry of natural landmarks and protects “outstanding examples of major geological features.” Topographic and geologic features are also protected under CEQA.

This section also discusses geology, soils, and seismic concerns as they relate to public safety and project design. Earthquakes are prime considerations in the design and retrofit of structures, and the Caltrans Office of Earthquake Engineering is responsible for assessing the seismic hazard for Caltrans projects. The current policy is to use the anticipated Maximum Credible Earthquake (MCE) from young faults in and near California. The MCE is defined as the largest earthquake that can be expected to occur on a fault over a particular period of time.

3.13.2 Affected Environment

A Preliminary Geotechnical Study was previously completed for Phase I of the SR-11/Otay Mesa East POE project (Ninyo & Moore 2007a). This analysis encompassed the eastern portion of the current Tier II project (approximately east of Paseo de las Americas), with associated information used in the following evaluation as applicable. The remaining portion of the proposed Tier II alignment was previously evaluated for geotechnical concerns as part of the approved SR-905 project EIR/EIS (Ninyo & Moore 1999a). In addition to the described geotechnical analyses, two supplemental investigations were prepared by Caltrans for the proposed Tier II project, including a Hydrogeologic Site Assessment/Storm Water Data Report and a Supplemental District Preliminary Geotechnical Report (Caltrans 2009c, 2009e). The results of all the noted investigations are summarized below along with other applicable data, with the listed reports included in Chapter 8.0, *References*. Applicable areas evaluated under the referenced geotechnical analyses are depicted on Figure 3.13-1, *General Geology Map*. The project study area for geologic, soils, seismic and topographic issues shown on Figure 3.13-1 includes approximately 537 acres, and incorporates the Preferred Alternative and its study area (approximately 471 acres), the Draft EIR/EIS build alternatives (including the associated design variations), the associated POE and CVEF sites, and adjacent areas that may potentially affect or be affected by project implementation. The combined (537-acre) area for all of the build alternatives is hereafter referred to as the study area, and is evaluated in the following analysis of geologic, soils, seismic and topographic issues. In addition to the described study area, the affected environment is described for the proposed Johnson Canyon and Lonestar biological mitigation sites, which encompass approximately 177 acres of proposed mitigation activities located approximately 1.5 miles north of study area.

Geologic/Topographic Setting

The study area and related sites are located within the Peninsular Ranges Geomorphic Province (Province), a region characterized by northwest-trending structural blocks and intervening fault zones. The Province extends approximately 900 miles from the Los Angeles Basin to the southern tip of Baja California, and varies in width from approximately 30 to 100 miles. Bedrock units in the Province include Jurassic metavolcanic and metasedimentary rocks (between approximately 144 and 206 million years old) and Cretaceous igneous rocks (between approximately 65 and 144 million years old) of the Southern California Batholith (a large igneous intrusive body). The coastal portion of the Province in San Diego County (including much of the study area) typically includes a sequence of marine-cut terrace and shallow near-shore deposits forming a dissected coastal plain. These materials are comprised of upper Cretaceous, Tertiary (approximately 2 to 65 million years old), and Quaternary (less than approximately 2 million years old) marine and non-marine sedimentary strata.

Topographically, the Peninsular Ranges Province is composed of generally parallel ranges of steep-sloping hills and mountains separated by alluvial valleys, with adjacent coastal plain/terrace deposits to the west. Geologically recent uplift and erosion has produced the characteristic canyon and mesa topography present today in much of western San Diego County, as well as the deposition of surficial materials including Quaternary alluvium, colluvium and topsoil. Topography within the study area and related mitigation sites is characterized by generally undulating terrain, with major geomorphic features such as large canyons or mountains limited to portions of Johnson Canyon in the noted mitigation sites. On-site elevations range from approximately 640 feet above MSL in the central portion of the study area, to 490 feet above MSL in the southern portion of the POE site. Elevations within the Johnson Canyon/Lonestar mitigation sites range from approximately 340 to 510 feet above MSL. Local topographic profiles typically rise gently to the north and east of the study area, with surrounding topographic features including Johnson Canyon to the north (and within/adjacent to the mitigation sites), Spring Canyon to the west and the San Ysidro Mountains to the east and northeast.

Stratigraphy

As shown on Figure 3.13-1, geologic units underlying the study area include the Quaternary-age Lindavista Formation, the Tertiary-age Otay Formation, and the Jurassic/Cretaceous-age Santiago Peak Volcanics. Mapped geologic units within the Johnson Canyon/Lonestar mitigation sites include the Otay Formation, the Lindavista Formation and an unnamed Tertiary-age fanglomerate. These units are outlined below in order of increasing age, followed by a summary description of local surficial deposits including alluvium, colluvium, topsoil and fill (which are not depicted on Figure 3.13-1). As noted in the referenced SR-905 Geotechnical Evaluation, mapped exposures of the Lindavista Formation may also include Quaternary-age stream terrace deposits (with the combined deposits referred to hereafter as the Lindavista Formation).

Lindavista Formation (Ql)

The Lindavista Formation is mapped in the western portion of the study area (approximately between the western limit of the SR-905/SR-125/SR-11 Interchange and the western study area boundary), as well as the western parcel of the Lonestar mitigation site. This unit consists of well-consolidated, coarse-grained pebbly sandstone and pebble conglomerate with local claystone interbeds, and typically exhibits a characteristic rust-red color due to oxidation of iron-rich cement (mainly hematite).

Otay Formation (To)

The Otay Formation is mapped throughout the eastern study area and portions of the off-site mitigation areas, and consists mainly of poorly cemented and massive (i.e., without distinct structure such as bedding) sandstones, siltstones and claystones, with interbedded bentonite lenses (clay formed from volcanic ash). Based on subsurface exploration (borings and test pits) conducted during the project geotechnical and hydrogeologic investigations (Caltrans 2009c, 2009e), local deposits of the Otay Formation were observed to include generally unconsolidated clayey and silty sands near the surface, with these materials grading into poorly consolidated sandstones, siltstones and claystones. The Otay Formation extends to approximate depths of 32 feet below the surface at the POE site and 100 feet below the surface near Alta Road, and is assumed to continue to increase in thickness further west.

Unnamed Fanglomerate (Tfg)

This boulder-fanglomerate is mapped in portions of the mitigation sites, and consists of consolidated alluvial fan deposits that interfinger with the Otay Formation. The fanglomerate is partially derived from the Otay Formation and underlying basement rocks, including the Santiago Peak Volcanics. Clasts

(larger rock fragments) are generally angular and consist primarily of metavolcanic and granitic materials, while the matrix includes coarse-grained sandstone and bentonite (California Geological Survey [CGS], formerly the California Division of Mines and Geology [CDMG], 1977).

Santiago Peak Volcanics (Jsp)

The Santiago Peak Volcanics are mapped to the east and northeast of the study area and mitigation sites, and presumably underlie the study area and vicinity at depth (as noted below). This unit generally consists of metavolcanic rocks and associated volcanoclastic deposits (sedimentary units derived from weathered volcanic rocks), and can exhibit a wide range of compositions and forms. During the noted geotechnical and hydrogeologic investigations, local deposits of the Santiago Peak Volcanics were observed to underlie the Otay Formation in much of the eastern study area, and to consist primarily of sedimentary breccia composed of andesitic¹ gravel and cobbles in a silty-sand matrix. These deposits extend approximately 18 feet below the bottom of the Otay Formation at the POE site, and 30 feet below the Otay Formation at Alta Road (with both of the observed bottom depths representing the termination of boring activities, and the Santiago Peak Volcanics continuing to undetermined depths).

Surficial Deposits

Surficial deposits within the study area and mitigation sites include alluvial materials in larger drainages, colluvium (or slopewash) along the toes of slopes, topsoils occurring as a relatively thin (one- to four-foot) layer in most areas, and local fill deposits associated with existing development such as roadways. Alluvium typically consists of unconsolidated or poorly consolidated stream deposits with variable amounts of silt, sand and cobble size grains. Colluvial deposits include loose, unconsolidated materials deposited by gravity, and are generally more angular and more poorly sorted (i.e., encompassing different size grains) than alluvium. Mapped topsoils in the study area and mitigation sites consist primarily of clay-rich soils of the Diablo and Salinas series, and loams/clay loams of the Huerhuero, Olivenhain and Stockpen series. Table 3.13-1, *Description of Mapped Soil Characteristics*, summarizes mapped soil characteristics. Fill deposits typically consist of sandy materials used as a base layer for development. Local fill potentially encompasses both documented (placed in accordance with established engineering standards) and undocumented materials.

Structure and Seismicity

The study area and vicinity, like most of southern California, is located within a seismically active region that encompasses several major active and potentially active faults (Figure 3.13-2, *Regional Fault Map*). Active faults are defined as those exhibiting historic seismicity or displacement of Holocene deposits (less than approximately 11,000 years old), while potentially active faults have no historic seismicity and displace Pleistocene (between approximately 11,000 and 1.6 million years old), but not Holocene, strata. Southern California has experienced a number of moderate (in the range of 5.0 to 5.9 on the Richter scale) to large (magnitude 6.0 and higher) earthquakes during the past 50 years, although small magnitude earthquakes (below magnitude 5.0) are more common in the coastal San Diego area. All of San Diego County is within a Seismic Zone 4 designation, which is the highest of four seismic risk zones and is generally interpreted as an area with a 1 in 10 chance of experiencing a 0.4g peak ground acceleration level within the next 50 years (where g is the acceleration due to gravity). As described in the previously referenced geotechnical studies, the Rose Canyon Fault is located approximately 10 miles west of the study area at its closest point and represents the nearest known active fault. This fault is capable of generating peak ground acceleration (or ground motion) values of approximately 0.3g within the study area and vicinity, in association with an MCE of magnitude 7.2 (Ninyo & Moore 2007a, 1999a).

¹ Andesite is a volcanic rock intermediate in composition between basalt and rhyolite, with rhyolite generally representing the volcanic equivalent of granite in composition.

**Table 3.13-1
DESCRIPTION OF MAPPED SOIL CHARACTERISTICS**

Soil Series	Physical Characteristics/Location	Expansion (shrink-swell) Potential	Reactivity	Erosion Potential
Huerhuero Loam, 2 to 5, and 5 to 9 percent slopes	Moderately well-drained loams with clay subsoils derived from sandy marine sediments. These soils occur within the POE site in the easternmost study area, and near the western study area boundary.	High, due to the presence of a clay subsoil	Strongly acidic to moderately alkaline (pH 5.1-8.4)	Slight to moderate
Diablo Clay, 2 to 9, and 9 to 15 percent slopes	Well-drained, moderately deep to deep clays derived from sandstone and shale. These soils occur in much of the eastern and central portions of the study area.	High, due to clay content	Neutral to mildly alkaline (pH 6.6 to 7.8)	Slight to moderate
Olivenhain Cobbly Loam, 30 to 50 percent slopes	Well-drained cobbly loams with a cobbly clay subsoil formed in alluvium. These soils occur in the Johnson Canyon mitigation site, and portions of the three Lonestar mitigation site parcels.	Moderate	Strongly to moderately acidic (pH 5.1 to 6.0)	High
Salinas Clay, 0 to 2 percent slopes	Well-drained clay loams formed on floodplains and alluvial fans. These soils occur in the western portion of the study area.	High, due to clay content	Neutral to moderately alkaline (pH 6.6 to 8.4)	Slight
Stockpen gravelly clay loam, 0 to 2, and 2 to 5 percent slopes	Moderately well-drained and moderately deep clay loams formed on marine terraces. These soils occur in the western portion of the study area, and in the westernmost parcel of the Lonestar mitigation site.	High, due to clay content	Slightly acidic to moderately alkaline (pH 6.1 to 8.4)	Slight

Source: SCS 1973

Groundwater

Permanent shallow groundwater is not known to occur within the study area and immediate vicinity. Six borings were drilled to depths of between 26.5 and 130 feet in the eastern portion of the study area (east of Alta Road) as part of the project Hydrogeologic Site Assessment (Caltrans 2009c). No groundwater was encountered in these borings and the referenced report concluded that “[i]t is very unlikely that significant groundwater exists in the Otay Formation...” and “No groundwater was logged within the Santiago Peak Volcanic bedrock, to the maximum extent of...exploratory borings.” Historical data identify groundwater depths of between approximately 350 and 485 feet below the surface in areas west of the study area (DWR 1986), although the Hydrogeologic Site Assessment and Supplemental Geotechnical Report identify the potential for shallow perched groundwater to occur locally (Caltrans 2009c, 2009e). Perched groundwater generally consists of shallow, unconfined aquifers separated from the permanent water table by impermeable or semi-permeable strata. Shallow and/or perched groundwater may also occur in portions of the mitigation sites, especially areas within or adjacent to canyons. Additional discussion of local groundwater is provided in Section 3.11 of this Final EIR/EIS.

National Natural Landmark Status

Based on the noted geologic and topographic information, the study area and mitigation sites are not anticipated to contain any rare, high quality, or scientifically significant geologic or topographic resources (refer also to Section 3.9 regarding aesthetics), and do not encompass any areas designated as National Natural Landmarks (U.S. National Park Service 2009).

3.13.3 Environmental Consequences

The previously referenced geotechnical and hydrogeologic studies do not identify any conditions that would necessarily preclude project development, although a number of potential geologic issues are noted and several recommendations are provided to address these concerns. Specifically, these recommendations include conducting a comprehensive geotechnical evaluation prior to project design and construction. This investigation would include appropriate subsurface exploration and laboratory testing to further evaluate geologic conditions and provide additional information on the engineering characteristics of earth materials and associated conditions present within the study area. From these data, specific geotechnical recommendations would be provided regarding the design and construction of the project facilities. In addition to the noted detailed evaluation, the preliminary geotechnical and hydrogeologic analyses identify a number of recommendations related to individual seismic and non-seismic geotechnical hazards within the study area, as summarized below for the project build alternatives. Potential project impacts related to shallow groundwater and erosion/sedimentation are addressed in Sections 3.11 and 3.12 of this Final EIR/EIS, respectively.

The use of the Lonestar and Johnson Canyon mitigation sites for biological mitigation purposes would not be expected to result in adverse impacts to geology, soils, seismicity or topography. This action would result in only minor movement of surface soils or alteration of the surface topography during habitat enhancement, restoration and/or preservation. These activities also would not affect the geology or seismicity of the site. Also, no structures or human occupants would be stationed at these mitigation sites that could be exposed to any soils, geologic, seismic or topographical conditions or hazards on the mitigation sites. Therefore, the environmental consequences discussion below focuses on the portions of the build alternatives involving grading and construction of SR-11, the POE and the CVEF, within the identified study area for these facilities.

Preferred Alternative and Draft EIR/EIS Build Alternatives and Variations

The following analysis of potential geologic, soil, seismic and topographic impacts is applicable to the Preferred Alternative and all three Draft EIR/EIS baseline build alternatives, with or without the associated variations. All of the build alternatives and design variations would encounter similar geologic, soil, seismic and topographic conditions, with the type and nature of associated impacts also therefore the same. While the specific locations and extent of these impacts could vary slightly among the build alternatives and design variations, the overall level of impact and associated requirements to address these potential effects would be the same.

Seismic Hazards

Fault Rupture

Project implementation would generally not be subject to seismic ground rupture hazards and/or related effects such as lurching (i.e., the rolling motion of surface materials associated with passing seismic waves). This conclusion is based on the fact that no known active faults are located within or adjacent to the study area. While the potential for ground rupture and lurching cannot be totally discounted

(e.g., such effects could possibly occur locally as a result of off-site seismic events), the project Preliminary Geotechnical Study (Ninyo & Moore 2007a) concludes that “[g]round surface rupture is not considered a hazard.” This conclusion is also considered applicable to the western portion of the study area, based on conclusions in the SR-905 Geotechnical Evaluation (Ninyo & Moore 1999a) and the reasons noted above.

Ground Acceleration

The estimated peak ground acceleration level for the study area and vicinity of 0.3g is representative of similar areas in southern California, and could potentially result in seismic ground acceleration impacts to proposed facilities, such as structures, foundations, and/or utilities. Specifically, the project Preliminary Geotechnical Study concludes that the study area has a “[h]igh potential for experiencing strong ground motion...,” with a similar assessment provided for the western portion of the study area in the SR-905 Geotechnical Evaluation (Ninyo & Moore 2007a, 1999a). Based on these conclusions, additional investigation is recommended in the associated studies to verify and/or modify the identified seismic design parameters and related assumptions, as applicable. The project would incorporate appropriate design and construction measures to accommodate projected seismic loading, pursuant to recommendations in the referenced preliminary studies, as well as subsequent detailed geotechnical evaluation. This would include peak ground acceleration levels, along with applicable seismic parameters from sources such as Caltrans standards, the International Building Code (IBC), and the related California Building Code (CBC).

Liquefaction and Seismically Induced Settlement

Liquefaction is the phenomenon whereby soils lose shear strength and exhibit fluid-like flow behavior. Loose, granular materials with low relative densities are most susceptible to these effects, with liquefaction potential greatest in saturated soils at relatively shallow depths. Liquefaction most typically results from seismic ground acceleration, with the resulting loss of support and/or related effects such as seismically induced settlement potentially generating impacts to surface and subsurface facilities including pavement, foundations, and utilities. The majority of the study area is underlain by dense bedrock materials (i.e., the Otay and Lindavista formations), with shallow groundwater not known or expected to be present. Accordingly, the referenced geotechnical studies both generally conclude that formational materials are not subject to liquefaction or seismically induced settlement (Ninyo & Moore 2007a, 1999a). Portions of the study area such as drainages and slopes, however, that encompass alluvial or colluvial materials may be liquefiable and/or subject to seismically induced settlement. Areas encompassing these types of deposits, as well as other unsuitable surface materials including undocumented fill and topsoil, are recommended for additional liquefaction/settlement analysis as part of the noted detailed geotechnical evaluation. Project implementation would include completion of such analysis and conformance with associated recommendations and applicable Caltrans and other appropriate regulatory/technical standards (e.g., the IBC and CBC).

Tsunamis and Seiches

Tsunamis are long wavelength (i.e., long relative to the underlying ocean depth) ocean waves generated by sudden movements of the ocean bottom during events such as submarine earthquakes, volcanic activity, or landslides. The referenced geotechnical studies both conclude that tsunami hazards are not a concern, based on the elevation and inland location of the study area (Ninyo & Moore 2007a, 1999a).

Seiches are defined as wave-like oscillatory movements in enclosed or semi-enclosed bodies of water such as lakes or reservoirs. Potential effects from seiches include flooding damage and related hazards (e.g., erosion) in surrounding areas from spilling or sloshing water, as well as increased pressure on

containment structures. Because the study area is not located adjacent to or in close proximity to any large upstream water bodies, no impacts related to seiche hazards are anticipated from project implementation.

Non-seismic Hazards

Landslides and Slope Instability

The occurrence of landslides and other types of slope failures (e.g., rock falls) is influenced by a number of factors including slope grade, geologic and soil characteristics, moisture levels, and vegetation cover. Landslides can be triggered by one or more specific or combination of events, such as gravity, fires, precipitation, and seismic activity. Landslide hazards within the study area are identified as generally low in the referenced geotechnical studies, based on topographic profiles and the lack of identified on-site or adjacent landslide deposits (Ninyo & Moore 2007a, 1999a). Due to proposed excavation and manufactured slope construction in areas underlain by the Otay Formation, however, potential manufactured slope instability impacts could occur in association with conditions such as claystone and/or bentonitic clay beds (which exhibit inherent weakness planes). Evaluation of potential slope instability impact would be conducted as part of the previously noted detailed geotechnical evaluation. Project implementation would include conformance with associated recommendations from this analysis, as well as applicable regulatory/technical requirements from Caltrans or other standards (e.g., the IBC and CBC).

Additional potential issues related to slope instability are associated with temporary (construction-related) excavations. Specifically, slope instability in such excavations could result in associated potential safety impacts for construction personnel. Project implementation would include conformance with applicable Caltrans, Occupational Safety and Health Administration (OSHA), California Division of Occupational Safety and Health (Cal/OSHA), and/or other regulatory/technical standards related to this issue, to ensure excavation stability.

Potential concerns related to slope instability from short-term (construction) surficial effects such as erosion and sedimentation are discussed in Section 3.12, and would be addressed through the implementation of appropriate construction BMPs in conformance with applicable regulatory standards.

Retaining Walls/Footings/Foundations

The project designs include several retaining walls and over- or undercrossing structures associated with proposed interchanges and local road crossings. Evaluation of potential impacts related to the design of footings, and other stability concerns (e.g., soil and/or hydrostatic loading) would be conducted as part of the previously noted detailed geotechnical evaluation. Project implementation would include conformance with the recommendations from this analysis, as well as applicable regulatory/technical requirements from Caltrans or other standards (e.g., the IBC and CBC).

Expansive Soils

Expansive (or shrink-swell) behavior is attributable to the water-holding capacity of certain clay minerals, and can affect the integrity of facilities such as pavement, foundations, or drainage structures. The previously referenced geotechnical and hydrogeologic evaluations all identify potential concerns related to the occurrence of expansive soils within the study area. These potential impacts are associated primarily with clay-bearing deposits of the Otay Formation, with the project Supplemental Geotechnical Report concluding that approximately 30 percent of the proposed SR-11 alignment in the eastern study area could be underlain by medium to highly expansive soils (Caltrans 2009e). In addition, a number of surficial topsoil deposits within the study area may also exhibit expansive behavior as summarized in

Table 3.13-1. Evaluation of potential impacts related to expansive soils would be conducted as part of the previously noted detailed geotechnical evaluation. Project implementation would include conformance with associated recommendations from this analysis, as well as applicable regulatory/technical requirements from Caltrans or other standards (e.g., the IBC and CBC).

Corrosive Soils

Soils with corrosive properties such as pH, resistivity, and/or chloride/sulfate content can potentially affect the integrity of concrete or metal structures such as foundations, footings, pavement, and reinforcing steel. The referenced geotechnical evaluations identify the potential for corrosive soils associated with the Otay Formation (Ninyo & Moore 2007a, 1999a), with a number of surficial topsoil deposits also potentially exhibiting corrosive properties as shown in Table 3.13-1. Evaluation of potential impacts related to corrosive soils would be conducted as part of the previously noted detailed geotechnical evaluation. Project implementation would include conformance with associated recommendations from this analysis, as well as applicable regulatory/technical requirements from Caltrans or other standards (e.g., the IBC and CBC).

Excavation/Generation of Oversize Materials

Proposed excavation within formational materials (including the Lindavista Formation) may produce oversize materials and associated potential impacts if such materials are used in engineered fill. Specifically, this could entail differential compaction (i.e., variations in compaction levels over short distances) and related effects to overlying pavement, structures and/or utilities. Evaluation of potential impacts related to oversize materials would be conducted as part of the previously noted detailed geotechnical evaluation. Project implementation would include conformance with associated recommendations from this analysis, as well as applicable regulatory/technical requirements from Caltrans or other standards (e.g., the IBC and CBC).

Mineral Resources

The referenced geotechnical evaluations both conclude that the potential occurrence of economically recoverable mineral resources within the study area is low, based on literature review, field reconnaissance and subsurface exploration efforts (Ninyo & Moore 2007a, 1999a). Accordingly, no associated impacts are anticipated from project implementation.

National Natural Landmarks

As previously noted, the study area does not encompass any rare, high quality or scientifically significant geologic or topographic resources, and is not within any areas designated as National Natural Landmarks. Accordingly, no associated impacts would occur from project implementation.

No Build Alternative

Under the No Build Alternative, the development actions described for the build alternatives and variations would not occur, and no associated impacts related to geologic, soil, seismic, or topographic conditions would result.

3.13.4 Avoidance, Minimization, and/or Mitigation Measures

Preferred Alternative and Draft EIR/EIS Build Alternatives and Variations

Based on the discussions provided above in Section 3.13.3, no substantial impacts related to geology, soils, seismicity, or topography would occur under the Preferred Alternative, any of the Draft baseline build alternatives (with or without the potential variations), or the Johnson Canyon/Lonestar mitigation activities, and no associated mitigation measures are required. The project geotechnical investigations, however, recommend that additional detailed subsurface exploration and laboratory testing be conducted prior to applicable project design and construction. These evaluations, which are standard Caltrans requirements, would assess subsurface conditions in proposed development areas and provide related information/recommendations regarding engineering characteristics of associated earth materials. From these data, specific recommendations would be generated for applicable geotechnical issues to ensure conformance with associated regulatory and design requirements. No additional exploration/testing would be required for the Johnson Canyon/Lonestar mitigation sites, based on the nature of the proposed habitat preservation, restoration and/or enhancement activities at these sites. The following types of standard design and construction measures may be considered in the detailed geotechnical investigations for all of the build alternatives and associated design variations, based on recommendations in the preliminary analyses, as well as applicable Caltrans and regulatory/industry standards (e.g., the IBC and CBC). Implementation of these or other appropriate measures identified during detailed investigations would avoid or minimize any potential impacts related to geology, soils, seismicity, or topography for the build alternatives and design variations.

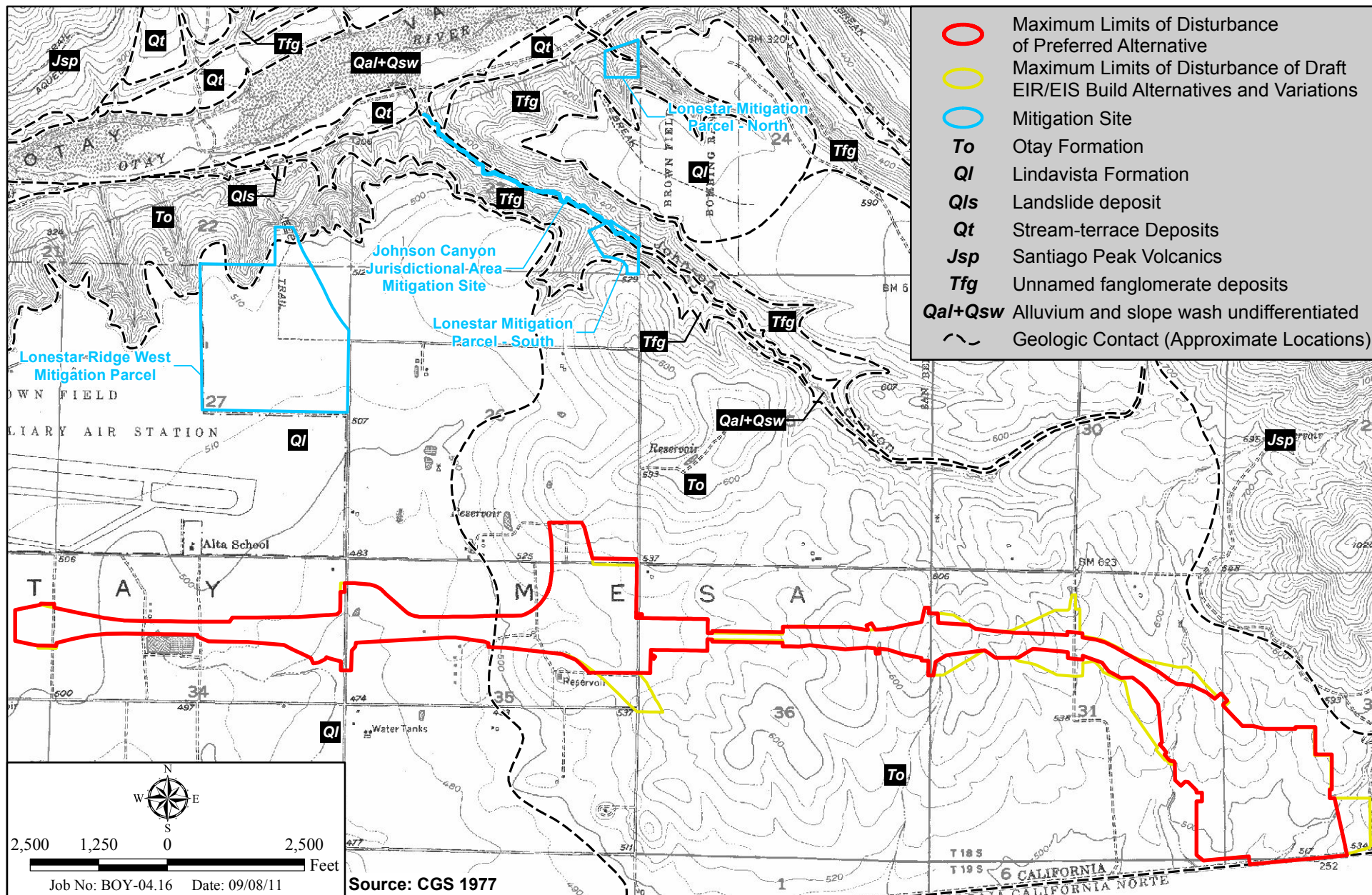
- Potential impacts related to seismic ground acceleration could be addressed or avoided through efforts such as: (1) conformance with applicable seismic parameters from sources including Caltrans standards and the IBC/CBC (including seismic zone, subsurface profile types, seismic and near-source coefficients for acceleration and velocity, and the seismic source); (2) use of properly engineered fill; (3) appropriate foundation, footing, and pavement design; (4) use of properly reinforced concrete and masonry; and (5) appropriate structure and utility design.
- Potential liquefaction and seismic settlement effects could be addressed or avoided through efforts such as: (1) conformance with applicable seismic parameters from sources including Caltrans standards and the IBC/CBC; (2) removal and recompaction and/or replacement of materials susceptible to liquefaction or seismic settlement with engineered fill; (3) in-place soil and/or structural modifications such as compaction grouting, soil mixing, dynamic compaction, or driving piles below liquefiable layers; and (4) use of subdrains in appropriate areas to avoid saturation of surficial materials.
- Potential impacts related to landslides and slope/excavation instability hazards could be addressed or avoided through efforts such as: (1) removal/replacement of landslide-prone materials (e.g., claystone or bentonite) in applicable areas; (2) use of stabilizing facilities such as buttresses or stability fills in applicable areas; (3) limitation of individual manufactured slope grades and/or heights per geotechnical recommendations; (4) use of native and/or drought-tolerant landscaping, erosion/sedimentation controls, irrigation management, and appropriate drainage facilities on manufactured slopes; and (5) conformance with applicable Caltrans, OSHA and Cal/OSHA standards for temporary (construction-related) excavations, such as limiting grades and incorporating appropriate shoring or other stabilizing features.
- Potential impacts related to the instability of retaining walls and over or undercrossing structures (or other pertinent facilities) could be addressed/avoided through efforts such as: (1) use of

appropriate footing and foundation design per geotechnical recommendations and Caltrans or other appropriate standards (e.g., IBC/CBC); (2) use of stabilizing techniques such as soil nail, tieback and/or MSE walls in applicable areas; (3) conformance with appropriate geotechnical recommendations and Caltrans or other regulatory/industry standards regarding wall design and loading (e.g., IBC/CBC); and (4) provision of appropriate drainage controls to prevent ponding, undermining and/or surficial saturation.

- Expansive characteristics in surficial materials could be addressed or avoided through efforts such as: (1) removal and recompaction and/or replacement of unsuitable soils with engineered fill; (2) selective placement and/or capping of expansive soils; (3) use of subdrains and moisture conditioning in applicable areas of expansive soils to avoid saturation; and (4) soil mixing and use of specially designed foundations or slabs in areas of expansive deposits.
- Potential impacts associated with corrosive soils could be addressed or avoided through efforts such as: (1) removal of unsuitable deposits and replacement with non-corrosive fill, (2) use of corrosion-resistant construction materials and (3) installation of cathodic protection devices.
- Potential impacts related to oversize materials could be addressed or avoided through efforts such as: (1) removal and off-site disposal of oversize materials unsuitable for use in on-site fills; (2) selective burial of oversize materials in deeper fills; or (3) crushing of oversize materials to an appropriate size for use in on-site fill.

No Build Alternative

No impacts were identified for the No Build Alternative. No project action would occur under the No Build Alternative; therefore, no associated avoidance, minimization or mitigation measures would be required.

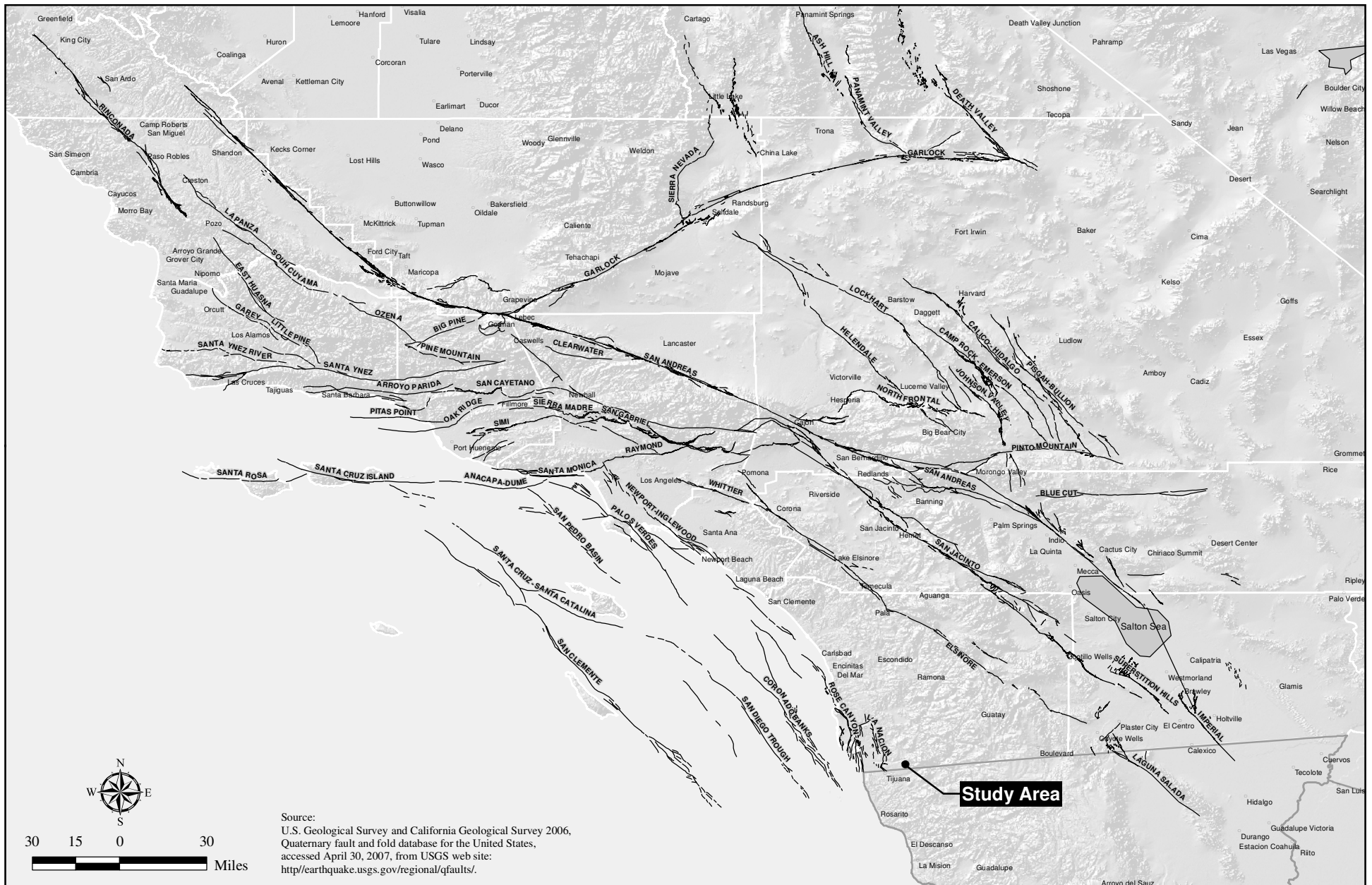


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General Geology Map

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II ENVIRONMENTAL IMPACT REPORT

Figure 3.13-1



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Regional Fault Map

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

Figure 3.13-2

3.14 PALEONTOLOGY

Paleontology is the study of life in past geologic time based on fossil plants and animals. Paleontological resources are the remains and/or traces of prehistoric plant and animal life, exclusive of humans. Fossil remains such as bones, teeth, shells, leaves, and wood are found in the geologic deposits (formations) within which they were originally buried. Fossils are considered non-renewable resources because the organisms they represent no longer exist. Thus, once destroyed, a fossil can never be replaced. For purposes of this evaluation, paleontological resources include the actual fossil remains, as well as the collecting localities and associated geologic formations.

3.14.1 Regulatory Setting

A number of federal statutes specifically address paleontological resources, their treatment, and funding for mitigation as a part of federally authorized or funded projects (e.g., Antiquities Act of 1906 [16 USC 431-433], and the Federal-Aid Highway Act of 1960 [23 USC 305], and the Omnibus Public Land Management Act of 2009 [16 USC 470aaa]). Under California law, paleontological resources are protected by CEQA, the California Code of Regulations (CCR), Title 14, Division 3, Chapter 1, Sections 4307 and 4309, and PRC Section 5097.5.

3.14.2 Affected Environment

A Paleontological Resource Assessment (PRA) has been prepared for the project (San Diego Natural History Museum [SDNHM] 2009). This assessment includes a Paleontological Evaluation Report and a preliminary Paleontological Mitigation Plan (PMP). The 2009 PRA does not include the western portion of the proposed project located west of the existing SR-905/SR-125 Interchange, as this area was added to the project alignment after completion of the PRA. In 2010, a Paleontological Update was prepared for the project (Caltrans 2010c), which evaluated the project west of the interchange. The western area generally corresponds to mapped occurrences of the Lindavista Formation within the project alignment, as shown on Figure 3.13-1, *General Geology Map*. The approximately 1,000-acre paleontological resource study area (study area) used for the following analysis includes the geologic study areas shown on Figure 3.13-1, as well as additional adjacent areas that were evaluated in the PRA and the Paleontological Update. This combined study area boundary encompasses all potential project-related activities that may affect paleontological resources, such as grading and excavation. Applicable information from the project PRA and Paleontological Update is included in the following analysis, with both studies listed in Chapter 8.0, *References*.

The study area is within the southern portion of the Peninsular Ranges Geomorphic Province, which is dominated by plutonic igneous rocks of late Mesozoic age (approximately 125 to 90 million years old), and pre-batholithic metamorphic rocks of middle Mesozoic age (approximately 200 to 140 million years old). Along the coastal plain of San Diego County, these crystalline basement rocks are typically overlain by younger sedimentary deposits of Cenozoic age (approximately 45 million to 10,000 years old). The study area is characterized by metavolcanic bedrock in the easternmost areas (the San Ysidro Mountains) and sedimentary deposits blanketing the lower lying mesa surfaces to the west.

As seen on Figure 3.13-1, the study area and vicinity are underlain primarily by sedimentary rocks of the Otay and Lindavista formations. The Otay Formation is mapped in much of the eastern study area and is Oligocene in age (approximately 34 to 23 million years old), with local sedimentary units dated at approximately 29 million years old. The Otay formation has been divided into three members that typically exhibit a combined thickness of less than 120 feet (although localized exposures can encompass a combined thickness of up to 400 feet). This formation generally becomes finer grained from bottom to top, with the lower unit exhibiting cobble to boulder size grains, the middle unit comprised of sandstones

and gravels, and the upper unit composed of sandstones and claystones (refer to Section 3.13 for additional description of the Otay Formation and other local geologic units). Current records at the SDNHM document six paleontological collecting sites located within one mile of the study area, with numerous additional fossil localities known from the upper Otay Formation unit in other portions of Otay Mesa. These localities have produced well-preserved remains of a diverse assemblage of terrestrial vertebrates, and the Otay Formation is considered to be the richest source of late Oligocene terrestrial vertebrates in California (Deméré 1988). Because of this paleontological richness, the Otay Formation is assigned a high level of paleontological resource sensitivity.

The Lindavista Formation is mapped in the western portion of the study area, and represents marine and/or non-marine deposits of Early to Middle Pleistocene age (approximately 0.5 to 1.6 million years old). As noted in the geotechnical analysis prepared for the previously approved SR-905 project (Ninyo & Moore 1999a), mapped exposures of the Lindavista Formation may also include Quaternary-age stream terrace deposits (with the combined units hereafter referred to as the Lindavista Formation). Typical exposures of the Lindavista Formation encompass coarse-grained pebbly sandstones and pebble conglomerates, with local claystone interbeds. These rocks have an average local thickness of approximately 15 to 30 feet, and were deposited under conditions including fluvial (river-deposited), aeolian (wind-deposited), and shallow nearshore marine environments. Fossil occurrences are generally uncommon, although recovered resources have included nearshore marine invertebrates (e.g., clams, scallops, snails and barnacles), and (less frequently) marine vertebrates such as sharks and whales (Caltrans 2010c). Based on the described fossil occurrences and associated potential for producing important remains, the Lindavista Formation is assigned a moderate level of paleontological resource sensitivity.

Jurassic and Cretaceous-age bedrock of the Santiago Peak Volcanics is mapped to the east and northeast, and likely underlies portions of the study area (refer to Figure 3.13-1). This formation consists primarily of volcanic and metavolcanic rocks, although metasedimentary units appear to be interbedded with the volcanic rocks in some locations (refer to Section 3.13 for additional description of the Santiago Peak Volcanics). In general, the molten origin of most units within the Santiago Peak Volcanics precludes the possible preservation/discovery of fossil remains. This formation has produced localized paleontological resources, however, including petrified wood from sites in Mira Mesa and Rancho Santa Fe, as well as microfossils (radiolarians) and macroinvertebrates (e.g., clams) from local metasedimentary units. There are currently no records of any paleontological collecting sites in these rocks south of San Clemente Canyon in the City of San Diego. Because the majority of the Santiago Peak Volcanics within the study area has been characterized as metavolcanic, this unit is assigned a negligible level of paleontological resource sensitivity.

Also assigned a negligible level of paleontological resource sensitivity within the study area are those locations encompassing artificial fill or previously disturbed sediments, including sites along existing roadways and associated with existing structures or other development. Alluvial and colluvial materials within the study area are assigned a minor (or low) paleontological resource sensitivity, based on their relatively young age and/or high energy depositional history.

In addition to the study area described above, project development involves two anticipated biological resources mitigation sites, the Lonestar and Johnson Canyon sites (refer to Figure 3.13-1). The Lonestar site, which includes three separate parcels, is underlain by the Otay and Lindavista formations, as well as an unnamed Tertiary-age (between approximately 1.6 and 65 million years old) fanglomerate. The Johnson Canyon site is underlain by the above-described fanglomerate. The unnamed fanglomerate generally consists of consolidated alluvial fan deposits, and is described as a boulder-fanglomerate composed of angular clasts in a medium-grained sandstone/bentonite matrix (CGS 1977). The fanglomerate interfingers with the Otay Formation, and is derived in part from these deposits and underlying basement rocks (e.g., the Santiago Peak Volcanics). Paleontological resource sensitivities of

the Otay Formation (high), Santiago Peak Volcanics (negligible), and alluvial deposits (low) are described above. The fanglomerate is generally assigned a moderate to high paleontological resource sensitivity, due to its association with the Otay Formation and high-energy depositional environment.

3.14.3 Environmental Consequences

Preferred Alternative and Draft EIR/EIS Build Alternatives and Variations

The following analysis of potential impacts to paleontological resources is applicable to the Preferred Alternative and all three baseline Draft EIR/EIS build alternatives, with or without the associated variations. All of the build alternatives would encounter similar formational conditions, with the type and nature of associated impacts therefore also the same. While the specific locations and extent of these impacts could vary slightly among the build alternatives and design variations, the overall level of impact and associated requirements to address these potential effects would be the same.

Potential impacts to scientifically significant paleontological resources typically occur in the form of the destruction of buried fossil remains during construction-related earthmoving activities (e.g., grading and excavation). Proposed earthmoving activities associated with the various alternatives and design variations would potentially encounter geologic deposits assigned negligible, low, moderate, and high levels of paleontological resource sensitivity, as outlined above in Section 3.14.2. Specifically, deposits with negligible sensitivity affected by the build alternatives include artificial fill, disturbed sediments, and the Santiago Peak Volcanics, while affected deposits with low sensitivity include alluvium and colluvium. Deposits with moderate or high paleontological resource sensitivity potentially affected by the build alternatives include the Otay Formation in the eastern portion of the study area, as well as the Otay/Lindavista formations and fanglomerate deposits located in the anticipated off-site biological mitigation areas (refer to Figure 3.13-1).

The extent of potential impacts to the Otay Formation under the Preferred Alternative would be slightly less than for the Two Interchange Alternative because of the reduction in the eastern extent of the POE footprint. The extent of potential impacts to the Otay Formation under the One Interchange Alternative would vary slightly from the Two Interchange Alternative, based on the location of the proposed single interchange at Alta Road. The extent of potential impacts to the Otay formation under the No Interchange Alternative would be slightly less than for the other build alternatives, based on the slightly smaller impact footprint resulting from the lack of proposed interchange facilities.

Construction impacts along the project expansion into the SR-905 footprint would be limited almost exclusively to within the median of SR-905, which is currently under construction. Those activities occurring as part of the SR-11 project include widening of the connector ramps from SR-11 to SR-905 and narrowing the median to accommodate additional lanes. These areas have been completely disturbed from activities currently occurring as part of the SR-905 project. Paleontological monitoring for fossil discoveries has already occurred or is ongoing in this area. None of the SR-11 work proposed along SR-905 would extend into undisturbed paleontological deposits (it would occur entirely within artificial fill). Accordingly, there is no potential for paleontological resources to be affected in this area, as the Lindavista Formation would not be impacted.

No paleontological resource impacts are anticipated in association with the implementation of habitat preservation, restoration and/or enhancement activities at the Lonestar and Johnson Canyon biological resources mitigation sites. Specifically, these activities would be restricted to surficial materials such as soils and alluvium, and would not involve extensive grading or excavation into the underlying Otay and Lindavista formations, or the unnamed fanglomerate deposits.

No Build Alternative

Under the No Build Alternative, the described development actions for the build alternatives would not occur, and no associated impacts related to paleontological resources would result.

3.14.4 Avoidance, Minimization, and/or Mitigation Measures

Preferred Alternative and Draft EIR/EIS Build Alternatives and Variations

Construction of any of the described SR-11 build alternatives, along with the associated POE and CVEF sites, would impact the Otay Formation, which is assigned a high level of paleontological resource sensitivity. Accordingly, project implementation would potentially impact important paleontological resources and would require mitigation to address these potential impacts. The following preliminary measures are identified in the project PMP and would be implemented as part of the proposed project:

- Once specific design layouts for proposed project elements and alternatives are available, details of the areas where mitigation is specifically required would be called out in a final PMP.
- A qualified paleontologist would attend the project pre-construction meeting to consult with the grading and excavation contractors concerning excavation schedules, paleontological field techniques, and safety issues. A qualified paleontologist is defined as an individual with an M.S. or Ph.D. in paleontology or geology who is familiar with paleontological procedures and techniques, who is knowledgeable in the geology and paleontology of San Diego County, California, and who has worked as a paleontological mitigation project supervisor in the region for at least one year.
- A paleontological monitor would be on site on a full-time basis during the original cutting of previously undisturbed deposits of high sensitivity paleontological resources (i.e., the Otay Formation) to inspect exposures for contained fossils. A paleontological monitor is defined as an individual who has experience in the collection and salvage of fossil materials. The paleontological monitor would work under the direction of a qualified paleontologist. As grading progresses, the qualified paleontologist and paleontological monitor would have the authority to reduce the scope of the monitoring program to an appropriate level if it is determined that the potential for impacts to paleontological resources is lower than anticipated.
- When fossils are discovered, the paleontologist (or paleontological monitor) would recover them appropriately. In most cases, fossil salvage can be completed in a relatively short period of time, although some fossil specimens (such as a complete large mammal skeleton) may require a more extended salvage period. In these instances, the paleontologist (or paleontological monitor) would be allowed to temporarily direct, divert, or halt grading to allow recovery of fossil remains in a timely manner. Because of the potential for the recovering of small fossil remains, such as isolated mammal teeth, it may also be necessary to set up a screenwashing operation on the site.
- During the monitoring and recovery phases of the PMP, the qualified paleontologist and/or paleontological monitor would also routinely collect stratigraphic data such as lithology, the vertical and lateral extent of strata, the nature of upper and lower contacts, and the taphonomic character of exposed strata (i.e., the study of decaying organisms over time and how they become fossilized). Collection of such data is critical for providing a stratigraphic context for any recovered fossils.

- Fossil remains collected during monitoring and salvage would be cleaned (removed of extraneous enclosing sedimentary rock material), repaired (consolidation of fragile fossils and gluing together broken pieces), sorted (separating fossils of the different species), and catalogued (scientific identification of species, assignment of inventory tracking numbers, and recordation of these numbers in a computerized collection database) as part of the mitigation process.
- Prepared fossils, along with copies of all pertinent field notes, photos, and maps, would be deposited in a scientific institution with paleontological collections. Curation of the fossils would be accompanied by financial support for preparation, curation and initial specimen storage, if this work has not already been completed.
- A final summary report would be completed that outlines the results of the mitigation program. This report would include discussions of the methods used, stratigraphic section(s) exposed and documented, fossils collected, and significance of recovered fossils.

No Build Alternative

| No impacts were identified for the No Build Alternative. No project action would occur under the No Build Alternative; therefore, no associated avoidance, minimization or mitigation measures would be required.

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3.15 HAZARDOUS WASTE/MATERIALS

3.15.1 Regulatory Setting

Hazardous materials and hazardous wastes are regulated by many state and federal laws. These include not only specific statutes governing hazardous waste, but also a variety of laws regulating air and water quality, human health and land use.

The primary federal laws regulating hazardous wastes/materials are the Resource Conservation and Recovery Act of 1976 (RCRA) and the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA). The purpose of CERCLA, often referred to as Superfund, is to clean up contaminated sites so that public health and welfare are not compromised. RCRA provides for “cradle to grave” regulation of hazardous wastes. Other federal laws include:

- Community Environmental Response Facilitation Act (CERFA) of 1992
- Clean Water Act
- Federal Clean Air Act (FCAA)
- Safe Drinking Water Act
- Occupational Safety & Health Act
- Atomic Energy Act
- Toxic Substances Control Act (TSCA)
- Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)

In addition to the acts listed above, EO 12088, Federal Compliance with Pollution Control, mandates that necessary actions be taken to prevent and control environmental pollution when federal activities or federal facilities are involved.

Hazardous waste in California is regulated primarily under the authority of RCRA (EPA 2007a) and the California Health and Safety Code (2007). Other California laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup and emergency planning.

Worker health and safety and public safety are key issues when dealing with hazardous materials that may affect human health and the environment. Proper disposal of hazardous material is vital if it is disturbed during project construction.

3.15.2 Affected Environment

Two ISAs have been prepared for the proposed SR-11/Otay Mesa East POE project (Ninyo & Moore 2010c, 2007b), and two soil sampling reports were prepared (Ninyo & Moore 2010a, 2010b). The western portion of the proposed project area (west of the SR-905/SR-125 Interchange) was evaluated as part of the ISA conducted for the previously approved SR-905 project (Ninyo & Moore 1999b). An area of approximately 7.4 acres located south of the POE site and within U.S. Border Patrol jurisdiction is within the project impact footprint for any of the Draft EIR/EIS build alternatives; the U.S. Border Patrol area under the Preferred Alternative would cover 6.0 acres. Because this area was not available for access during project investigation, it was not included in the ISA. Portions of the described area have also been previously developed for construction of a border fence, and may therefore have been subject to associated hazardous materials investigation and (if applicable) remediation.

In addition to the project areas described above, proposed development involves two anticipated biological resources mitigation sites, the Lonestar and Johnson Canyon sites (refer to Figures 3.13-1, *General Geology Map*, and 3.23-1, *Critical Habitat/Impacts*). These sites encompass a combined mitigation area of approximately 177 acres, of which approximately 172 acres, on the western parcel of the Lonestar site, would be largely preserved in the current condition (with associated activities limited to hand excavation of burrowing owl nesting sites). The remaining mitigation areas would include up to approximately five acres of minor (surficial) grading and associated activities related to native habitat restoration/enhancement. The described sites are predominantly undeveloped, with the Johnson Canyon site and the eastern two parcels of the Lonestar site generally in an undisturbed state (i.e., no previous development/disturbance). The western parcel of the Lonestar site has been largely disturbed by previous activities such as livestock grazing, and supports large areas of non-native grassland and minor areas of native habitat. Existing development on this parcel is limited to facilities such as an abandoned stock pond and unpaved roads. No hazardous material surveys or soil sampling was conducted on the described mitigation sites, with associated proposed habitat restoration/enhancement activities included in the following analysis.

Summary of Existing Hazardous Waste/Material Conditions

Commonly encountered conditions/materials that may represent environmental concerns within the study area include the presence of (1) treated wood that may contain chemical preservatives; (2) asbestos containing materials (ACMs) such as insulation for subsurface pipelines and buildings; (3) lead based paint (LBP) on facilities such as curbs, poles and roadway striping; and (4) mercury-containing switches/fluorescent lights, and polychlorinated biphenols (PCB)-containing lights and associated ballasts. Based on the information presented in the referenced investigations, which included visual site reconnaissance and owner/operator interviews as well as regulatory agency file and database review, the following existing conditions related to hazardous wastes/materials were observed within the study area:

- The majority of the study area has been used for agricultural operations in the past; contaminated soils could potentially be present in association with previous activities such as pesticide storage, mixing and/or disposal, and vehicle/equipment fueling and maintenance.
- A number of industrial properties are present in the study area, including an industrial storage lot, a power plant, and numerous manufacturing/business park facilities. Based on the nature of these sites, such locations may represent hazardous or non-hazardous waste related concerns.
- Several truck/freight parking and/or storage sites are present in the study area, generally near SR-905 south of Airway Road, that encompass petroleum staining on unpaved areas and/or distressed (e.g., cracked) pavement surfaces that may be associated with vehicle fueling operations (potentially including underground storage tanks [USTs]).
- A vehicle auction yard is present in the eastern study area on Parcel No. 648-070-13. Soils impacted with petroleum hydrocarbons and containing low concentrations of metals were identified during the hazardous waste investigation, and represent non-hazardous wastes.
- Several sites with no recorded unauthorized release in the study area are identified as potential hazardous waste concerns due to on-site use/storage of hazardous materials and the lack of access during field investigation.

Because development and previous disturbance of the Johnson Canyon and Lonestar mitigation sites is limited as noted above, the types of environmental concerns identified above for the study area are

generally not expected to occur within the mitigation sites. While the western parcel of the Lonestar site has been previously used for livestock grazing, no evidence of previous agricultural operations that would have involved the use of chemical pesticides (or other hazardous materials) is known.

3.15.3 Environmental Consequences

Preferred Alternative and Draft EIR/EIS Build Alternatives and Variations

The following analysis of potential hazardous waste/materials impacts is applicable to the Preferred Alternative and all of the Draft EIR/EIS build alternatives, with or without the associated variations. This conclusion is based on the fact that all of the build alternatives encompass similar facility types and locations, as well as similar hazardous waste/materials baseline conditions.

- Much of the study area was previously used for agricultural activities such as irrigated and non-irrigated cultivation, and may have been subject to the application and/or storage of related materials including chemical pesticides/herbicides and fertilizers (potentially including wastewater sludge). Arsenic and organochlorine pesticides were the primary constituents of concern identified in the soil sampling reports.
- An existing vehicle auction yard located on Parcel No. 648-070-13 in the eastern study area has encompassed vehicle storage and related activities on unpaved areas since at least the early 1990s. Shallow soils were determined to be impacted with petroleum hydrocarbons. Specifically, potential impacts associated with on-site soil contamination would be the most extensive under the Alta Road Interchange, and the least extensive for the No Interchange Alternative. The Preferred Alternative and the Draft EIR/EIS build alternatives would affect this property, however, and would be subject to the associated mitigation identified in Section 3.15.4.
- A number of industrial properties/sites within the study area were unavailable for access during the associated ISA investigations, and may encompass the generation, use and/or storage of hazardous wastes/materials.
- A number of truck parking/freight-related facilities located near Airway and Harvest roads in the study area were observed to encompass ground staining on unpaved areas and/or areas with distressed (e.g., cracked) pavement surfaces, and/or concrete pads (which may have been used in association with vehicle fueling and/or maintenance activities).
- A number of existing facilities in various portions of the study area may contain materials including LBP, ACMs, treated wood, and/or PCBs.
- The project impact footprint includes an approximate 7.4-acre area for any of the Draft EIR/EIS build alternatives (or 6.0-acre area for the Preferred Alternative) located south of the project POE site that is under U.S. Border Patrol jurisdiction. While no known hazardous material concerns are associated with this area (e.g., no sites were identified therein during agency file/database review), the noted area was not available for access during project investigation. Accordingly, this area may potentially exhibit hazardous materials issues associated with previous agricultural or other uses.
- Operation of the Otay Mesa East POE and/or CVEF sites could potentially involve the use and on-site storage of hazardous materials such as vehicle fuels (e.g., gasoline and/or diesel), with associated potential for accidental release.

Johnson Canyon and Lonestar Biological Mitigation Sites

Based on the nature of the described Johnson Canyon and Lonestar sites, existing hazardous material/waste conditions that would represent potential constraints to proposed biological mitigation efforts are not anticipated. Specifically, this conclusion is based on the following considerations: (1) the western parcel of the Lonestar site would be largely preserved in place, with associated proposed habitat restoration/enhancement limited to minor (vernal pool) grading and hand excavation of burrowing owl nesting sites (i.e., burrows); (2) while the western parcel of the Lonestar site has been previously disturbed as noted, there is no known evidence to suggest that this parcel has been subject to activities that may have involved the use or storage of hazardous materials (e.g., agricultural cultivation); (3) the Johnson Canyon site and easternmost two parcels of the Lonestar site are largely undisturbed, and have thus not been subject to activities that may have involved the use or storage of hazardous materials; and (4) proposed grading to support mitigation activities on the proposed mitigation sites would be minor in extent and surficial in nature, and would not involve material import/export.

No Build Alternative

Under the No Build Alternative, the described development actions for the build alternatives and variations would not occur, and no impacts related to hazardous wastes/materials would result.

3.15.4 Avoidance, Minimization, and/or Mitigation Measures

Preferred Alternative and Draft EIR/EIS Build Alternatives and Variations

A number of avoidance, minimization and mitigation measures are provided in the project ISAs and soil sampling reports to address the identified potential hazardous and non-hazardous waste concerns and health and safety environmental concerns, including requirements for additional site assessment and (if appropriate) remediation in applicable areas.

Because the SR-905 project in the western study area is currently under construction, and all proposed SR-11 facilities in the western portion of the study area would be located within the SR-905 R/W, no associated mitigation requirements are anticipated therein. Applicable measures for SR-11, the POE and the CVEF under the Preferred Alternative or any of the other build alternatives, are as follows:

- At the vehicle auction yard in the east portion of the study area (Parcel No. 648-070-13), soil sampling documented the presence of soil impacted with concentrations of petroleum hydrocarbons that would represent non-hazardous waste. Soil generated within the upper 1.5 to 2 feet at this site from subsurface disturbance activities including grading, excavation or utility trenching may constitute a non-hazardous waste per associated regulatory guidelines, and would be managed, profiled, transported, and/or disposed of accordingly. This may include obtaining regulatory authority for on- or off-site reuse of impacted soil (e.g., as fill), or off-site disposal at an appropriate facility.
- Additional assessment would be conducted prior to property acquisition of industrial sites in the eastern study area that would be impacted by the proposed project and were not accessible during the project ISA investigations. These assessments would, at a minimum, include site reconnaissance to document evidence of potential hazardous waste/material generation, use and/or storage, as well as related hazardous and non-hazardous environmental concerns and associated remedial/regulatory requirements.

- Field soil sampling and laboratory testing would be conducted to evaluate the potential occurrence of contaminants where soil staining or staining on distressed pavement was observed followed by proper handling and disposal.
- For agriculturally related contaminants, soil generated within the upper 0.5 foot in this area from subsurface disturbance activities including grading, excavation or utility trenching may constitute a waste per associated regulatory guidelines, and would be managed, profiled, transported, and/or disposed of accordingly. This would involve chemical classification prior to reuse or disposal based on the analytical testing results of associated samples, and may require (depending on test results) obtaining regulatory authority for on- or off-site reuse of impacted soil (e.g., as fill), or off-site disposal at an appropriate facility.
- For areas of hazardous or non-hazardous waste environmental concern identified within the project construction footprint, a site Community Health and Safety Plan would be prepared prior to project initiation to document appropriate measures to manage potential health and safety hazards to project workers and the general public.
- A Soil Management Plan (SMP) would be prepared to address the potential for encountering areas of potential environmental concern during associated grading, excavation, or other subsurface disturbance. The project SMP would identify specific measures to address efforts including monitoring, handling, stockpiling, characterization, on-site reuse, export, and disposal protocols for excavated soil.
- Appropriate references regarding the potential to encounter contaminated soil and/or groundwater would be included in construction contract specifications so that the contractor(s) can incorporate related requirements into their scope of work.
- Municipal (household) trash, construction debris deposits, soil stockpiles, and other pertinent materials would be removed from all proposed development areas and disposed of in accordance with applicable regulations.
- If conditions suggestive of soil contamination (e.g., discoloration or odor generation) or other potential environmental issues are encountered during project construction, additional assessment would be conducted by a qualified environmental professional. If contamination or other applicable conditions are encountered, additional environmental investigation and/or mitigation may be required by applicable regulatory agencies.
- Surveys would be conducted prior to project-related disturbance in applicable areas to identify structures, infrastructure, or other facilities that may contain hazardous materials including LBP, ACMs, treated wood, PCBs, and/or other regulated substances. These surveys would be conducted by qualified/certified personnel.
- Sampling of painted surfaces (e.g., guardrails, piping, pavement striping, and street infrastructure) for LBP would be conducted prior to any project-related disturbance.
- Sampling of appropriate facilities (e.g., pipeline insulation) would be conducted for ACMs prior to project-related disturbance. If ACMs are determined to be present, a licensed abatement contractor would be retained to remove and properly dispose of pertinent materials prior to commencing associated construction operations.

- Potentially hazardous wastes generated during project-related construction activities would be disposed of and/or recycled at appropriate facilities in conformance with associated regulatory requirements.
- Any permitted hazardous materials transmission or storage facilities within the areas of anticipated partial takes of industrial property west of Sanyo Avenue would be relocated within the affected properties, in conformance with applicable regulations and in consultation with the affected property owners/tenants.

While hazardous material conditions that would represent potential constraints to proposed mitigation efforts at the Johnson Canyon and Lonestar mitigation sites are generally not anticipated, as described above, the following measures would potentially apply these sites: (1) sampling/testing (or other evaluation) of on-site soils if conditions suggesting hazardous material use (e.g., soil staining) or previous agricultural activity are encountered; (2) implementation of health and safety and/or soil management plans (or other applicable controls) if appropriate; and (3) proper handling/disposal of hazardous materials or wastes generated during construction activities.

No Build Alternative

No impacts were identified for the No Build Alternative. No project action would occur under the No Build Alternative; therefore, no associated avoidance, minimization or mitigation measures would be required.

3.16 AIR QUALITY

3.16.1 Regulatory Setting

The FCAA as amended in 1990 is the federal law that governs air quality. The California Clean Air Act (CCAA) of 1988 is its companion state law. These laws, and related regulations by the EPA and California Air Resources Board (ARB), set standards for the quantity of pollutants that can be in the air. At the federal level, these standards are called National Ambient Air Quality Standards (NAAQS). NAAQS and State ambient air quality standards have been established for six transportation-related criteria pollutants that have been linked to potential health concerns. The criteria pollutants are: carbon monoxide (CO), nitrogen dioxide (NO₂), ozone (O₃), particulate matter (broken down for regulatory purposes into particles of 10 micrometers or smaller, abbreviated PM₁₀ and particles of 2.5 micrometers and smaller, abbreviated as PM_{2.5}), lead (Pb), and sulfur dioxide (SO₂). In addition, State standards exist for visibility-reducing particles, sulfates, hydrogen sulfide (H₂S) and vinyl chloride. The NAAQS and State standards are set at a level that protects public health with a margin of safety, and are subject to periodic review and revision. Both State and Federal regulatory schemes also cover toxic air contaminants (air toxics). Some criteria pollutants are also air toxics or may include certain air toxics within their general definition.

Federal and State air quality standards and regulations provide the basic scheme for project-level air quality analysis under NEPA and CEQA. In addition to this type of environmental analysis, a parallel “Conformity” requirement under the FCAA also applies.

FCAA Section 176(c) prohibits the U.S. DOT and other federal agencies from funding, authorizing, or approving plans, programs or projects that are not first found to conform to the State Implementation Plan (SIP; San Diego Air Pollution Control District [APCD] 2007) for achieving the goals of the FCAA requirements related to the NAAQS. “Transportation Conformity” takes place on two levels: the regional, or planning and programming, level and the project level. The proposed project must conform at both levels to be approved. Conformity requirements apply only in nonattainment and “maintenance” (former nonattainment) areas for the NAAQS, and only for the specific NAAQS that are or were violated. EPA regulations at 40 CFR 93 govern the conformity process.

Regional conformity is concerned with how well the regional transportation system supports plans for attaining the standards set for CO, NO₂, O₃, PM (PM₁₀ and PM_{2.5}), and in some areas, SO₂; California has nonattainment or maintenance areas for all of these transportation-related “criteria pollutants” except SO₂. California also has a nonattainment area for lead; however, lead is not currently required by the FCAA to be covered in transportation conformity analysis. Regional conformity is based on RTPs and Federal Transportation Improvement Programs (FTIPs) that include all of the transportation projects planned for a region over a period of at least 20 years for the RTP, and 4 years for the FTIP. RTP and FTIP conformity determinations are based on travel demand and air quality modeling to identify whether or not the implementation of those projects would conform to emissions budgets or other tests showing that requirements of the FCAA and the SIP are met. If the conformity analysis is successful, the MPO, FHWA, and Federal Transit Administration (FTA) make determinations that the RTP and FTIP are in conformity with the SIP for achieving the goals of the FCAA. Otherwise, the projects in the RTP and/or FTIP must be modified until conformity is attained. If the design concept, scope, and “open to traffic” schedule of a proposed transportation project are the same as described in the RTP and FTIP, then the proposed project is deemed to meet regional conformity requirements for purposes of project-level analysis.

Conformity at the project-level also requires “hot spot” analysis if an area is designated “nonattainment” or “maintenance” for CO and/or PM (PM₁₀ or PM_{2.5}). A region has a “nonattainment” status if one or

more of the monitoring stations in the region measures violation(s) of the relevant standard, and EPA officially designates the area as nonattainment. Areas that were previously designated as nonattainment areas but subsequently meet the standard may be officially redesignated to attainment by the EPA, and are then called “maintenance” areas. “Hot spot” analysis is essentially the same, for technical purposes, as CO or PM analysis performed for NEPA purposes. Conformity does include some specific procedural and documentation standards for projects that require a hot spot analysis. In general, projects must not cause the “hot spot”-related standard to be violated, and must not cause any increase in the number and severity of violations in non-attainment areas. If a known CO or PM violation is located in the project vicinity, the project must include measures to reduce or eliminate the existing violation(s) as well.

The ARB has established the California Ambient Air Quality Standards (CAAQS) that are generally more restrictive than the NAAQS and include additional pollutants. The federal and California air quality standards are shown in Table 3.16-1, *National and California Ambient Air Quality Standards, Effects, and Sources*.

Table 3.16-1 NATIONAL AND CALIFORNIA AMBIENT AIR QUALITY STANDARDS, EFFECTS, AND SOURCES							
Pollutant	Averaging Time	California Standards ¹	Federal Standards ²		Principal Health and Atmospheric Effects	Typical Sources	Attainment Status
		Concentration ³	Primary ^{3,4}	Secondary ^{3,5}			
Ozone (O ₃)	1-Hour	0.09 ppm (180 µg/m ³)	- ⁶	Same as Primary Standard	High concentrations irritate lungs. Long-term exposure may cause lung tissue damage and cancer. Long-term exposure damages plant materials and reduces crop productivity. Precursor organic compounds include many known toxic air contaminants. Biogenic VOC may also contribute.	Low-altitude ozone is almost entirely formed from reactive organic gases/volatile organic compounds (ROG or VOC) and nitrogen oxides (NOx) in the presence of sunlight and heat. Major sources include motor vehicles and other mobile sources, solvent evaporation, and industrial and other combustion processes.	Federal (8-hour): Nonattainment-(Basic)
	8-Hour	0.070 ppm (137 µg/m ³)	0.075 ppm ⁷ (147 µg/m ³)				State (1-hour) Nonattainment (Serious)
	8-Hour (Conformity Process)	-	0.08 ppm (4 th highest in 3 years)				State (8-hour) Nonattainment (Serious)
Respirable Particulate Matter (PM ₁₀) ⁸	24-Hour	50 µg/m ³	150 µg/m ³	Same as Primary Standard	Irritates eyes and respiratory tract. Decreases lung capacity. Associated with increased cancer and mortality. Contributes to haze and reduced visibility. Includes some toxic air contaminants. Many aerosol and solid compounds are part of PM ₁₀ .	Dust- and fume-producing industrial and agricultural operations; combustion smoke; atmospheric chemical reactions; construction and other dust-producing activities; unpaved road dust and re-entrained paved road dust; natural sources (wind-blown dust, ocean spray).	Federal: Attainment
	Annual Arithmetic Mean	20 µg/m ³	- ⁹				State: Nonattainment
Fine Particulate Matter (PM _{2.5})	24-Hour	No Separate State Standard	35 µg/m ³ ¹⁰	Same as Primary Standard	Increases respiratory disease, lung damage, cancer and premature death. Reduces visibility and produces surface soiling. Most diesel exhaust particulate matter – a toxic air contaminant – is in the PM _{2.5} size range. Many aerosol and solid compounds are part of PM _{2.5} .	Combustion including motor vehicles, other mobile sources and industrial activities; residential and agricultural burning; also formed through atmospheric chemical (including photochemical) reactions involving other pollutants including NO _x , sulfur oxides (SO _x), ammonia, and ROG.	Federal: Attainment
	Annual Arithmetic Mean	12 µg/m ³	15.0 µg/m ³				State: Nonattainment
	24-Hour (Conformity Process)	-	65 µg/m ³ (4 th highest in 3 years)				
Carbon Monoxide (CO)	8-Hour	9.0 ppm (10 mg/m ³)	9 ppm (10 mg/m ³) ¹¹	None	CO interferes with the transfer of oxygen to the blood and deprives sensitive tissues of oxygen. CO also is a minor precursor for photochemical ozone.	Combustion sources, especially gasoline-powered engines and motor vehicles. CO is the traditional signature pollutant for on-road mobile sources at the local and neighborhood scale.	Federal: Maintenance
	1-Hour	20 ppm (23 mg/m ³)	35 ppm (40 mg/m ³)				State: Attainment
Nitrogen Dioxide (NO ₂)	Annual Arithmetic Mean	0.030 ppm (57 µg/m ³)	0.053 ppm (100 µg/m ³)	Same as Primary Standard	Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown. Contributes to acid rain. Part of the “NOx” group of ozone precursors.	Motor vehicles and other mobile sources; refineries; industrial operations.	Federal: Attainment
	1-Hour	0.18 ppm (339 µg/m ³)	0.100 ppm (188 µg/m ³) ¹² (98 th percentile over 3 years)				State: Attainment
Sulfur Dioxide (SO ₂)	24-Hour	0.04 ppm (105 µg/m ³)	-	-	Irritates respiratory tract; injures lung tissue. Can yellow plant leaves. Destructive to marble, iron, steel. Contributes to acid rain. Limits visibility.	Fuel combustion (especially coal and high-sulfur oil), chemical plants, sulfur recovery plants, metal processing; some natural sources like active volcanoes. Limited contribution possible from heavy-duty diesel vehicles if ultra-low sulfur fuel not used.	Federal: Attainment
	3-Hour	-	-	0.5 ppm (1300 µg/m ³)			State: Attainment
	1-Hour	0.25 ppm (655 µg/m ³)	75 ppb (196 µg/m ³) (98 th percentile over 3 years)	-			
Lead (Pb) ⁸	30-Day Average	1.5 µg/m ³	-	-	Disturbs gastrointestinal system. Causes anemia, kidney disease, and neuromuscular and neurological dysfunction. Also a toxic air contaminant and water pollutant.	Lead-based industrial processes like battery production and smelters. Lead paint, leaded gasoline. Aerially deposited lead from gasoline may exist in soils along major roads.	Federal: Attainment
	Calendar Quarter	-	1.5 µg/m ³	Same as Primary Standard			State: Attainment
	Rolling 3-Month Average	-	0.15 µg/m ³				

Table 3.16-1 (cont.) NATIONAL AND CALIFORNIA AMBIENT AIR QUALITY STANDARDS, EFFECTS, AND SOURCES							
Pollutant	Averaging Time	California Standards ¹	Federal Standards ²		Principal Health and Atmospheric Effects	Typical Sources	Attainment Status
		Concentration ³	Primary ^{3,4}	Secondary ^{3,5}			
Hydrogen Sulfide (H ₂ S)	1-Hour	0.03 ppm (42 µg/m ³)	No Federal Standards		Colorless, flammable, poisonous. Respiratory irritant. Neurological damage and premature death. Headache, nausea.	Industrial processes such as: refineries and oil fields, asphalt plants, livestock operations, sewage treatment plants, and mines. Some natural sources like volcanic areas and hot springs.	State Only: Unclassified
Sulfates (SO ₄)	24-Hour	25 µg/m ³			Premature mortality and respiratory effects. Contributes to acid rain. Some toxic air contaminants attach to sulfate aerosol particles.	Industrial processes, refineries and oil fields, mines, natural sources like volcanic areas, salt-covered dry lakes, and large sulfide rock areas.	State Only: Attainment (entire state)
Visibility Reducing Particles	8-Hour	In sufficient amount to produce an extinction coefficient of 0.23 per kilometer (visibility of ten miles or more) due to particles when the relative humidity is less than 70%.	No Federal Standards		Reduces visibility. Produces haze. NOTE: not related to the Regional Haze program under the Federal Clean Air Act, which is oriented primarily toward visibility issues in National Parks and other “Class I” areas.	See particulate matter above	State Only: Unclassified
Vinyl Chloride ⁸	24-Hour	0.01 ppm (26 µg/m ³)	No Federal Standards		Neurological effects, liver damage, cancer. Also considered a toxic air contaminant.	Industrial processes	State Only: Unclassified (entire state)

Source: EPA-NAAQS (<http://www.epa.gov/air/criteria.html>); CARB-CAAQS (<http://www.arb.ca.gov/research/aaqs/aaqs2.pdf>). Nov. 17, 2008

Notes:

µg/m³ = micrograms per cubic meter.
mg/m³ = milligrams per cubic meter.
ppb = parts per billion (thousand million).
ppm = parts per million.

¹ California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, suspended particulate matter—PM₁₀, PM_{2.5}, and visibility-reducing particles— are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

² National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. For PM10, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m3 is equal to or less than one. For PM2.5, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard. Contact EPA for further clarification and current federal policies.

³ Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based on a reference temperature of 25°C and a reference pressure of 760 Torricelli. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 Torricelli; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

⁴ National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

⁵ National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant

⁶Prior to 6/2005, the 1-hour NAAQS was 0.12 ppm. The 1-hour NAAQS is still used only in 8-hour ozone early action compact areas, of which there are none in California. However, emission budgets for 1-hour ozone may still be in use in some areas where 8-hour ozone emission budgets have not been developed.

⁷As of 9/16/09, U.S. EPA is reconsidering the 2008 8-hour ozone NAAQS (0.075 ppm); U.S. EPA is expected to tighten the primary NAAQS to somewhere in the range of 60-70 ppb and to add a secondary NAAQS; however, finalization and promulgation of the revised standard has not been completed.

⁸The ARB has identified vinyl chloride and the particulate matter fraction of diesel exhaust as toxic air contaminants. Diesel exhaust particulate matter is part of PM₁₀ and, in larger proportion, PM_{2.5}. Both the ARB and EPA have identified lead and various organic compounds that are precursors to ozone and PM2.5 as toxic air contaminants. There are no exposure criteria for adverse health effect due to toxic air contaminants, and control requirements may apply at ambient concentrations below any criteria levels specified above for these pollutants or the general categories of pollutants to which they belong. Lead NAAQS are not required to be considered in Transportation Conformity analysis.

⁹Annual PM₁₀ NAAQS revoked October 2006; was 50 µg/m³.

¹⁰24-hr. PM2.5 NAAQS tightened October 2006; was 65 µg/m³. In 9/09 EPA began reconsidering the PM_{2.5} NAAQS; the 2006 action was partially vacated by a court decision. The 65 µg/m³ PM_{2.5} (24-hr) NAAQS was not revoked when the 35 µg/m³ NAAQS was promulgated in 2006. Conformity requirements apply for all NAAQS, including revoked NAAQS, until emission budgets for the newer NAAQS are found adequate or SIP amendments for the newer NAAQS are completed.

¹¹Rounding to an integer value is not allowed for the State 8-hour CO standard. Violation occurs at or above 9.05 ppm. Violation of the Federal standard occurs at 9.5 ppm due to integer rounding.

¹²Final 1-hour NO₂ NAAQS published in the Federal Register on 2/9/2010, effective 3/9/2010. Initial nonattainment area designations should occur in 2012 with conformity requirements effective in 2013. Project-level hot spot analysis requirements, while not yet required for conformity purposes, are expected.

3.16.2 Affected Environment

An *Air Quality Analysis* (Scientific Resources Associated 2010) was prepared for the project and is summarized in the following sections. In addition, an *Air Quality Technical Report for Construction Emissions* was prepared for the POE and CVEF facilities, and is summarized in Section 3.16.3.

Criteria Air Pollutants

The seven air pollutants have been identified by the EPA as being of concern nationwide and their health effects are discussed below.

Carbon Monoxide

CO is a colorless and odorless gas which, in the urban environment, is associated primarily with the incomplete combustion of fossil fuels in motor vehicles. Relatively high concentrations are typically found near crowded intersections and along heavily used roadways carrying slow-moving traffic. Even under the severest meteorological and traffic conditions, high concentrations of CO are limited to locations within a relatively short distance (300 to 600 feet) of heavily traveled roadways. Overall, CO emissions are decreasing as a result of the Federal Motor Vehicle Control Program, which has mandated increasingly lower emission levels for vehicles manufactured since 1973. CO concentrations are typically higher in winter. As a result, California has required the use of oxygenated gasoline in the winter months to reduce CO emissions.

Ozone

O₃ is the principal component of smog and is formed in the atmosphere through a series of reactions involving reactive organic gases (ROG) and NO_x in the presence of sunlight. ROG and NO_x are called precursors of O₃. NO_x includes various combinations of nitrogen and oxygen, including nitrogen oxide, NO₂, NO₃, etc. O₃ is a principal cause of lung and eye irritation in the urban environment. Significant O₃ concentrations are normally produced only in the summer, when atmospheric inversions are greatest and temperatures are high. ROG and NO_x emissions are both considered critical in O₃ formation. Control strategies for O₃ have focused on reducing emissions from vehicles, industrial processes using solvents and coatings, and consumer products.

Nitrogen Dioxide

As noted above, NO₂ is part of the NO_x family and is a principal contributor to O₃ and smog.

Respirable Particulate Matter

Particulate matter includes both liquid and solid particles of a wide range of sizes and composition. While some PM₁₀ comes from automobile exhaust, the principal source in San Diego County is dust from construction and from the action of vehicle wheels on paved and unpaved roads. In other areas, agriculture, wind-blown sand, and fireplaces can be important sources. Control of PM₁₀ is achieved through the control of dust at construction sites, the cleaning of paved roads, and the wetting or paving of frequently used unpaved roads.

Fine Particulate Matter

The sources, health effects, and control of PM_{2.5} are similar to those of PM₁₀. In 1997, the EPA determined that the health effects of PM_{2.5} were severe enough to warrant an additional standard, and

standards for PM_{2.5} became effective on September 15, 1997. The U.S. Supreme Court affirmed the standards, and policies and systems to implement these new standards. Formal attainment classifications for PM_{2.5} were formally published on December 17, 2004, by the EPA (EPA 2004).

On June 20, 2002, the ARB adopted amendments for statewide annual ambient particulate matter air quality standards. These standards were revised/established due to increasing concerns by the ARB that previous standards were inadequate, as almost everyone in California is exposed to levels at or above the current state standards during some part of the year, and the statewide potential for significant health impacts associated with particulate matter exposure was determined to be large and wide-ranging (ARB 2002). Based upon a desire to set clean air goals throughout California, the ARB created a new annual average standard for PM_{2.5} at 12 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$). The EPA revised the NAAQS for PM_{2.5} in 2006, reducing the 24-hour standard from 65 $\mu\text{g}/\text{m}^3$ to 35 $\mu\text{g}/\text{m}^3$.

Sulfur Dioxide

SO₂ is a combustion product, with the primary source being power plants and heavy industries that use coal or oil as fuel. In the SDAB, there is relatively little use of coal and oil; therefore, SO₂ is of lesser concern than in many other parts of the country.

Lead

Lead is a stable compound that persists and accumulates both in the environment and in animals. Previously, the lead used in gasoline anti-knock additives represented a major source of lead emissions to the atmosphere. The EPA began working to reduce lead emissions soon after its inception, issuing the first reduction standards in 1973, which called for a gradual phase down of lead to one tenth of a gram per gallon by 1986. The average lead content in gasoline in 1973 was 2 to 3 grams per gallon or about 200,000 tons of lead per year. In 1975, passenger cars and light trucks were manufactured with a more elaborate emission control system, which included a catalytic converter that required lead-free fuel. In 1995, leaded fuel accounted for only 0.6 percent of total gasoline sales and less than 2,000 tons of lead per year. Effective January 1, 1996, the FCAA banned the sale of the small amount of leaded fuel that was still available in some parts of the country for use in on-road vehicles. Lead emissions have significantly decreased due to the near elimination of the use of leaded gasoline.

Climate and Meteorology

The project is located in the San Diego Air Basin (SDAB), which is coincident with San Diego County. The climate of San Diego County is characterized by warm, dry summers and mild, wet winters. One of the main determinants of the climatology is a semipermanent high pressure area (the Pacific High) in the eastern Pacific Ocean. In the summer, this pressure center is located well to the north, causing storm tracks to be directed north of California. This high pressure cell maintains clear skies for much of the year. When the Pacific High moves southward during the winter, this pattern changes, and low pressure storms are brought into the region, causing widespread precipitation. The Pacific High also influences the wind patterns of California. The predominant wind directions are westerly and west-southwesterly throughout the year, and the average annual wind speed is 5.6 miles per hour (mph).

A common atmospheric condition known as a temperature inversion affects air quality in San Diego. During an inversion, air temperatures get warmer rather than cooler with increasing height. Subsidence inversions occur during the warmer months (May through October) as descending air associated with the Pacific High comes into contact with cooler marine air. The boundary between the layers of air represents a temperature inversion that traps pollutants below it. The inversion layer is approximately 2,000 feet above MSL during the months of May through October; during the remaining months

(November through April), the temperature inversion is approximately 3,000 feet above MSL. Inversion layers are important elements of local air quality because they inhibit the dispersion of pollutants, thus resulting in a temporary degradation of air quality.

Regional and Local Air Quality

The SDAB currently meets the federal standards for all criteria air pollutants, except O₃; and state standards for almost all criteria air pollutants. The SDAB is currently classified as a state “serious” O₃ nonattainment area, and a state nonattainment area for PM_{2.5} and PM₁₀, according to the ARB (2009a). On April 15, 2004, the EPA issued the initial designations for the eight-hour O₃ standard, and the SDAB is classified as a federal nonattainment area for the eight-hour O₃ standard under Subpart 1 – Basic nonattainment. “Basic” is the least severe of the six degrees of O₃ nonattainment. The APCD submitted an air quality plan to the EPA in 2007; the plan demonstrated how the eight-hour O₃ standard would be attained by 2009. The SDAB is a CO attainment-maintenance area, following a 1998 re-designation as a CO attainment area.

Ambient air pollutant concentrations in the SDAB are measured at 10 air quality monitoring stations operated by the APCD. The APCD air quality monitoring station that represents the project area is the Otay Mesa Monitoring Station, shown in Figure 3.16-1, *CO Hotspot Analysis Locations and Air Quality Monitoring Stations*. This station is located approximately 0.8 mile south of the project site, and monitors CO, NO₂, O₃, SO_x, and PM₁₀. According to the APCD, PM₁₀ concentrations measured at the Otay Mesa Monitoring Station are heavily influenced by the site’s proximity to the truck border crossing at the U.S. - Mexico POE. To better measure PM₁₀ concentrations representing the Otay Mesa area as a whole, a parallel monitor was established at the Donovan Correctional Center, located two miles north of the existing monitoring station (APCD 2009; approximately 0.9 mile north of the project site). PM₁₀ data from this monitoring station were considered more representative of the project area. Table 3.16-2, *Ambient Air Quality Summary*, summarizes the excesses of standards and the highest pollutant levels recorded at these stations for the years 2006 to 2008. It should be noted that the highest exceedances of the 24-hour federal PM₁₀ and PM_{2.5} standards occurred during the southern California fire event of 2007.

**Table 3.16-2
AMBIENT AIR QUALITY SUMMARY**

Pollutant Standards	2006	2007	2008	2009	2010
Carbon Monoxide (CO)^a					
Maximum 1-hour concentration (ppm)	5.1	5.7	4.3	*	*
Maximum 8-hour concentration (ppm)	3.36	3.39	3.51	3.06	2.21
Number of Days Standard Exceeded					
NAAQS 1-hour (≥ 35 ppm)	0	0	0	*	*
CAAQS 1-hour (≥ 20 ppm)	0	0	0	0	0
NAAQS 8-hour (≥ 9 ppm)	0	0	0	0	0
CAAQS 8-hour (≥ 9.0 ppm)	0	0	0	0	0
Nitrogen Dioxide (NO₂)^a					
Maximum 1-hour concentration (ppm)	0.097	0.101	0.123	0.091	0.091
Annual Average (ppm)	0.024	0.022	0.024	0.021	0.021
Number of Days Standard Exceeded					
CAAQS 1-hour	0	0	0	0	0
NAAQS 1-hour	0	0	0	0	0
Sulfur Dioxide (SO_x)^a					
Maximum 24-hour concentration (ppm)	0.007	0.009	0.006	0.007	0.008
National annual average concentration (ppm)	0.003	0.003	0.002	0.003	0.001
Number of Days Standard Exceeded					
NAAQS 24-hour (>0.14 ppm) ^b	0	0	0	0	0
CAAQS 24-hour (>0.04 ppm)	0	0	0	0	0

**Table 3.16-2 (cont.)
AMBIENT AIR QUALITY SUMMARY**

Pollutant Standards	2006	2007	2008	2009	2010
Ozone (O₃)^a					
Maximum 1-hour concentration (ppm)	0.087	0.092	0.099	0.098	0.076
Maximum 8-hour concentration (ppm)	0.068	0.072	0.088	0.068	0.068
Number of Days Standard Exceeded					
CAAQS 1-hour (>0.09 ppm)	0	0	2	1	0
CAAQS 8-hour (>0.070 ppm)	0	1	3	0	0
NAAQS 8-hour (>0.075 ppm)	0	0	2	0	0
Particulate Matter (PM₁₀)^{c,d}					
National maximum 24-hour concentration (µg/m ³)	75	170	99	81	57
National second highest 24-hour concentration (µg/m ³)	56	146	79	70	56
State maximum 24-hour concentration (µg/m ³)	75	170	99	81	57
State second highest 24-hour concentration (µg/m ³)	56	146	79	70	56
National ^e annual average concentration (µg/m ³)	21.1	34.2	30.8	34.2	29.9
State ^f annual average concentration (µg/m ³)	N/A	36.6	31.2	34.2	29.9
Number of Days Standard Exceeded					
NAAQS 24-hour (>150 µg/m ³)	0	1	0	0	0
CAAQS 24-hour (>50 µg/m ³)	3	10	8	10	3
Particulate Matter (PM_{2.5})^g					
Maximum 24-hour concentration (µg/m ³)	30.2	77.8	32.9	43.7	22.7
Second highest 24-hour concentration (µg/m ³)	25.0	45.7	29.5	25.9	21.2
Third highest 24-hour concentration (µg/m ³)	24.0	36.1	28.4	43.7	22.7
Fourth highest 24-hour concentration (µg/m ³)	22.6	32.3	26.5	25.9	21.2
National ^e annual average concentration (µg/m ³)	11.2	12.6	12.3	11.4	*
State ^f annual average concentration (µg/m ³)	11.2	*	12.3	11.4	*
Number of Days Standard Exceeded					
NAAQS 24-hour (>65 µg/m ³ Pre-2007; >35 µg/m ³ Post-2007)	1	0	0	1	0

* Data unavailable

a Monitoring data from Otay Mesa Monitoring Station. 1-Hour SO₂ standard was adopted in 2010; exceedances are based on previously applicable standards.

b This standard was revoked on August 23, 2010.

c Measurements usually collected every six days.

d Monitoring data from Donovan Correctional Center Monitoring Station.

e National annual average based on arithmetic mean.

f State annual average based on geometric mean.

g Monitoring data from Chula Vista Monitoring Station.

µg/m³ = micrograms per cubic meter

Sources: ARB 2012

Sensitive Receptors

Sensitive receptors are typically defined as schools, hospitals, nursing homes, and day care centers. Based on Table 3.16-3, *Sensitive Receptors in the Project Area*, no sensitive receptors have been identified within one mile of the SR-11 alignment. The Southwestern College campus located at 8100 Gigantic Street in San Diego is approximately 0.04 mile from the alignment. Although Southwestern College is an educational facility, colleges are not typically considered sensitive receptors because they cater to adults rather than children who have a more sensitive respiratory system.

**Table 3.16-3
SENSITIVE RECEPTORS IN PROJECT AREA**

Name	Address	City	Distance (Miles)
Schools			
Olympian High School	1925 Magdalena Avenue	Chula Vista	2.67
Wolf Canyon Elementary School	1950 Wolf Canyon Loop	Chula Vista	3.04
San Ysidro High School	5353 Airway Road	San Diego	1.86
Preschools			
Concordia Preschool and Child Care Center	1695 Discovery Falls Drive	Chula Vista	4.43
San Ysidro Head Start	249 Willow Road	San Ysidro	3.42
Hospital/Nursing Home Facilities			
Sharp Chula Vista Medical Center	751 Medical Center Court	Chula Vista	4.66
Parks			
Otay Lakes County Park	2270 Wueste Road	Chula Vista	3.61
Valle Lindo Park	Sequoia Street	Chula Vista	3.85

Source: Scientific Resources Associated 2010

3.16.3 Environmental Consequences

Preferred Alternative and Draft EIR/EIS Build Alternatives and Variations

Permanent and temporary air quality impacts associated with the Preferred Alternative, or the Two Interchange, One Interchange, and No Interchange alternatives and the variations analyzed in the Draft EIR/EIS, would be similar for most air quality issues, because the build alternatives would occur in the same location with very similar footprints and sensitive receptors would be within similar distances from proposed improvements. The following assessment characterizes all of the build alternatives and their potential variations, with differences noted, where appropriate.

Regional Air Quality Conformity

The FCAA requires a demonstration that federal actions conform to the SIP and similar approved plans in areas that are designated as nonattainment. Transportation measures, such as the proposed project, are analyzed for conformity as part of the RTP and RTIP. The RTIP is the implementing document for the RTP. If the design concept and scope of a proposed transportation project are consistent with the project description in the applicable RTP and RTIP, including the assumptions in the regional emissions analysis for the RTP and RTIP, then the project would conform to the SIP, and no adverse regional air quality impact would occur as a result of the project.

The applicable transportation plans for the proposed project are the 2030 RTP, adopted on November 30, 2007 (SANDAG 2007a), as well as the Final 2010 RTIP, as amended. The 2050 RTP was adopted subsequently (in October 2011), but the conformity analysis was prepared based on the 2030 RTP, which was the approved RTP at the time the Draft EIR/EIS was circulated.

The project is listed in the San Diego 2030 revenue constrained RTP, which was found to conform by SANDAG on November 30, 2007 (and is also listed in the recently adopted 2050 RTP). FHWA and FTA made a regional conformity determination on December 10, 2007 and a redetermination on December 14, 2010 (U.S. DOT 2010). Specifically, the proposed project is included as Table A.2, Phased Highway Projects – Revenue Constrained Plan, on page A-9 of the 2030 San Diego RTP, as SR-11 from SR-905 to

Mexico. The project is also included in Table A.6, Major Capital Improvements – Reasonably Expected Revenue Scenario, under Highway System Completion (page A-20).

The project is also included in the SANDAG revenue constrained 2010 RTIP, page 39 and Amendment 2 page 2. The project is identified as CAL66, RTIP #10-02, “SR-11 from Border of Mexico east of SR-905/Otay Mesa Border Crossing to future SR-125/905 junction – from Britannia Blvd. overcrossing to SR-905/SR-11 separation and on SR11 from SR905/SR11 separation to the Mexico Border – construction of a 4-lane toll highway facility” (EA NO: 05631; PPNO: 0999). The 2010 RTIP, as amended, was last determined to conform by FHWA and FTA through Amendment 8 on March 18, 2011. The design concept and scope of the proposed project is consistent with the project description in the 2030 RTP and the 2010 RTIP, as amended, and the “open to traffic” assumptions of SANDAG’s regional emissions analysis. In a letter dated May 24, 2011 (refer to Appendix Q), FHWA provided a Conformity Determination for the SR-11 and the Otay Mesa East Port of Entry Project in San Diego County, finding that the project conforms to the SIP in accordance with 40 CFR Part 93.

Local Air Quality Conformity

Carbon Monoxide Impacts

The Transportation Conformity Rules require a statement that “federal projects must not cause or contribute to any new localized CO violations or increase the frequency or severity of any existing CO violations in CO nonattainment and maintenance areas.” The CO portion of the requirement applies to the proposed project because the SDAB is a federal CO maintenance area. The air quality analyses of projects included in the RTP and RTIP do not include the analyses of local CO impacts; these must be addressed on a project level.

Procedures and guidelines for use in evaluating the potential local-level CO impacts of a project are contained in Transportation Project-Level Carbon Monoxide Protocol (Protocol; University of California Davis 1997). The Protocol provides a methodology for determining the level of analysis, if any, required on a project.

The SDAB was redesignated as a CO attainment area subsequent to the passage of the 1990 FCAA amendments. Continued attainment has been verified with the APCD. In areas meeting those conditions, in accordance with the Protocol, only projects that are likely to worsen air quality necessitate further analysis. Projects that worsen air quality are defined as those that substantially increase the percentage of vehicles in cold start mode, defined as an increase in the number of vehicles operating in cold start mode of two percent or more; those that substantially increase traffic volumes, defined as an increase in volume in excess of five percent; and those that worsen traffic flow, defined for intersections as increasing average delay at signalized intersections operating at LOS E or F. The proposed project is not exempt from further analysis because certain build alternatives would degrade some analyzed intersections to LOS E or F in the horizon year (2030). It is assumed that the traffic conditions for the 2035 Horizon Year analyzed in the *Tier II Traffic Technical Report* (Traffic Report; VRPA 2011) would be representative of 2030 conditions that are applied in the CO hot spot model; this would result in a “worst case” analysis because it likely assumes a higher traffic volume than would occur in 2030. The year 2030 was used to evaluate air quality impacts because the RTP addresses buildout for transportation in the SDAB for the year 2030. To be consistent with the RTP, it is appropriate to use the year 2030 to evaluate the potential for air quality impacts.

A summary of the forecast LOS for project-affected intersections (i.e., those intersections operating at LOS E or F for any project alternative) is provided in Section 3.8 of this Final EIR/EIS.

As required by the Protocol, a detailed CO concentration analysis was conducted for AM and PM periods using EMFAC2007 and CALINE4 models for the following intersections using 2030 conditions under the No Build Alternative, Preferred Alternative, and the three Draft EIR/EIS baseline build alternatives without variations:

- Otay Mesa Road/La Media Road (LOS F/F for No Build and No Interchange alternatives; LOS E/F for Preferred, Two Interchange, and One Interchange alternatives)
- La Media Road/SR-905 WB off-ramp (LOS C/E for No Interchange Alternative; LOS B/B for No Build, Preferred, Two Interchange, and One Interchange alternatives)
- Siempre Viva Road/SR-905 NB ramps (LOS E/E for No Interchange Alternative; LOS D/D or better for No Build, Preferred, Two Interchange, and One Interchange alternatives)
- Siempre Viva Road/Paseo de las Americas (LOS E/F for No Interchange Alternative; LOS D/D for No Build, Preferred, Two Interchange, and One Interchange alternatives)
- Siempre Viva Road/Enrico Fermi Drive (LOS D/E for No Interchange Alternative; LOS C/C for No Build, Preferred, Two Interchange, and One Interchange alternatives)

The eight-hour average maximum CO concentration was calculated by applying a persistence factor of 0.7 to the predicted one-hour average maximum CO concentrations obtained from each modeled run. The background concentrations were then added to the predicted concentrations to calculate the modeled maximum CO concentrations, which were then compared to the CAAQS and NAAQS in order to determine if the project would result in any exceedances.

The CO analysis indicated that the proposed project future traffic conditions would not result in an exceedance of the CO standards (Table 3.16-4, *CO Concentrations 2030*).

Table 3.16-4
CO CONCENTRATIONS 2030
(1-Hour and 8-Hour Concentrations plus background, ppm)

Intersection Number/Location	No Build Alternative		Preferred Alternative		Two Interchange Alternative		One Interchange Alternative		No Interchange Alternative	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1-Hour CO Concentrations (background = 5.7 ppm)										
1. Otay Mesa Road and La Media Road	6.5	6.6	6.5	6.6	6.5	6.6	6.7	6.5	6.6	6.7
2. SR-905 La Media Road WB off-ramp	6.4	6.5	6.4	6.5	6.4	6.5	6.4	6.5	6.5	6.6
3. Siempre Viva Road and SR-905 NB ramps	6.8	6.9	6.7	6.8	6.7	6.8	6.8	6.9	6.9	7.0
4. Siempre Viva Road and Paseo de las Americas	6.6	6.7	6.5	6.5	6.5	6.5	6.5	6.6	6.8	6.9
5. Siempre Viva Road and Enrico Fermi Drive	6.3	6.3	6.2	6.2	6.2	6.2	6.2	6.3	6.5	6.5
Federal standard	35									
State standard	20									

Table 3.16-4 (cont.) CO CONCENTRATIONS 2030 (1-Hour and 8-Hour Concentrations plus background, ppm)										
Intersection Number/Location	No Build Alternative		Preferred Alternative		Two Interchange Alternative		One Interchange Alternative		No Interchange Alternative	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
8-Hour Concentrations¹ (background = 3.51 ppm)										
1. Otay Mesa Road and La Media Road	4.07	4.14	4.07	4.14	4.07	4.14	4.21	4.07	4.14	4.21
2. SR-905 La Media Road WB off-ramp	4.00	4.07	4.00	4.07	4.00	4.07	4.00	4.07	4.07	4.14
3. Siempre Viva Road and SR-905 NB ramps	4.28	4.35	4.21	4.28	4.21	4.28	4.28	4.35	4.35	4.42
4. Siempre Viva Road and Paseo de las Americas	4.13	4.21	4.07	4.07	4.07	4.07	4.07	4.14	4.28	4.35
5. Siempre Viva Road and Enrico Fermi Drive	3.93	3.93	3.86	3.93	3.86	3.93	3.86	3.93	4.07	4.07
Federal standard	9									
State standard	9.0									

¹ 8-hour concentrations are extrapolated based on a 0.7 persistence factor.

Source: Scientific Resources Associated 2010, 2011

The federal and state one-hour CO standards are 35 parts per million (ppm) and 20 ppm, respectively, and the federal and state eight-hour CO standards are 9 ppm and 9.0 ppm, respectively. As shown in Table 3.16-4, the proposed project's future traffic conditions would not lead to any exceedances of these thresholds during the AM or PM peak periods at any of the analyzed intersections under the Preferred Alternative or any of the other build alternatives. All other intersections in the project area are predicted to experience less delay time and improved operating conditions with the project alternatives, compared with the No Build Alternative. Therefore, the proposed project would not result in or contribute to any significant local air quality impacts due to future operations.

Particulate Matter Impacts

On March 10, 2006, the EPA published a final rule that establishes the transportation conformity criteria and procedures for determining which transportation projects must be analyzed for local air quality impacts in PM_{2.5} and PM₁₀ nonattainment and maintenance areas. Based on that rule, the EPA and FHWA published Transportation Conformity Guidance for Qualitative Hot-spot Analyses in PM_{2.5} and PM₁₀ Nonattainment and Maintenance Areas (PM Guidance; FHWA 2006a). While the SDAB is not a federally designated PM_{2.5} or PM₁₀ nonattainment or maintenance area, it is designated as a state nonattainment area for both pollutants. Thus, to meet state requirements, the proposed project has been assessed using the procedure outlined in the PM Guidance.

To meet statutory requirements, the March 10, 2006 final rule requires PM_{2.5} and PM₁₀ hot spot analyses to be performed for projects of air quality concern (POAQC). Qualitative hot spot analyses would be done for these projects. Projects not identified as POAQC are considered to meet statutory requirements without any further hot spot analyses.

Pursuant to 40 CFR 93.123(b)(i) and (ii), a new or expanded highway or expressway project would be considered a POAQC if it resulted in both a significant Annual Average Daily Traffic (AADT)¹ volume (AADT volume of 125,000 or more), and a significant number of diesel vehicles (defined as eight percent or more of that total AADT). Based on screening using PM Guidance, the proposed project is not a POAQC because it does not meet the criteria, due to relatively low total Annual Average Daily Traffic (AADT), comparing the Build Alternatives and No Build Alternative. The percentage of diesel-fueled trucks within the project limits is forecast to be 15 percent of AADT, which exceeds the threshold of 8 percent. Based on the Traffic Report (VRPA 2011), however, no build alternative or variation would result in an AADT volume of 125,000 or more. Among the Preferred Alternative and three Draft EIR/EIS baseline build alternatives, the highest AADT for any segment of SR-11 is 66,600 on the segment from the interchange with SR-905 to the interchange with Enrico Fermi Drive for the Preferred Alternative. Because the project does not meet the criteria to be considered a POAQC, the project would be in conformance with federal PM₁₀ and PM_{2.5} standards.

Table 3.16-5, *PM₁₀ and PM_{2.5} Trends at the Donovan Correctional Center Monitoring Station*, shows the PM₁₀ and PM_{2.5} concentrations 2006 through 2008, in comparison with federal and state standards. It should be noted that the highest concentrations were measured during the southern California fire events in 2007.

Table 3.16-5 PM ₁₀ AND PM _{2.5} TRENDS AT THE DONOVAN CORRECTIONAL CENTER MONITORING STATION						
Pollutant	Averaging Time	Federal Primary Standards	California Air Quality Standards	Maximum Concentrations, µg/m ³		
				2006	2007	2008
PM ₁₀	24 hours	150 µg/m ³	50 µg/m ³	75	170	99
	Annual	Revoked	20 µg/m ³	21.1	34.2	30.8
PM _{2.5}	24 hours	35 µg/m ³	none	30.2	77.8	32.9
	Annual	15 µg/m ³	12 µg/m ³	11.2	12.6	12.3

Source: Scientific Resources Associated 2010

Mobile Source Air Toxics Impacts

The EPA is the lead federal agency for administering the FCAA and has certain responsibilities regarding the health effects of mobile source air toxics (MSATs). The EPA regulates 188 air toxics, known as hazardous air pollutants, under the FCAA and has identified a group of 93 compounds emitted from mobile sources that are listed in their Integrated Risk Information System (IRIS) (<http://cfepub.epa.gov/ncea/iris/index.cfm>). In addition, the EPA has identified seven compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers from their 1999 National Air Toxics Assessment (NATA): acrolein, benzene, 1,3-butadiene, diesel particulate matter plus diesel exhaust organic gases (diesel PM), formaldehyde, naphthalene, and polycyclic organic matter. While FHWA considers these the priority MSATs, the list is subject to change and may be adjusted in consideration of future EPA rules.

The 2007 EPA rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Vol. 72, No. 37, Page 8430, February 20, 2007) requires controls that will dramatically decrease MSAT emissions through cleaner fuels and cleaner engines. According to an FHWA analysis using the EPA's

¹ AADT is the total volume of vehicle traffic on a highway or road for a year divided by 365 days.

MOBILE6.2 model, even if vehicle activity (vehicle miles travelled; VMT) increases by 145 percent as assumed, a combined reduction of 72 percent in the total annual emission rate for the priority MSATs is projected from 1999 to 2050.

Incomplete or Unavailable Information for Project Specific MSAT Impact Analysis: In FHWA's view, information is incomplete or unavailable to credibly predict the project-specific health impacts due to changes in MSAT emissions associated with a proposed set of highway alternatives. The outcome of such an assessment, adverse or not, would be influenced more by the uncertainty introduced into the process through assumption and speculation rather than any genuine insight into the actual health impacts directly attributable to MSAT exposure associated with a proposed action.

The methodologies for forecasting health impacts include emissions modeling, dispersion modeling, exposure modeling, and then final determination of health impacts - each step in the process building on the model predictions obtained in the previous step. All are encumbered by technical shortcomings or uncertain science that prevents a more complete differentiation of the MSAT health impacts among a set of project alternatives, particularly when considered over a lifetime (i.e., 70 years) because unsupportable assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects emissions rates) over that timeframe.

Existing estimates of toxicity of the various MSATs present considerable uncertainties because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population, a concern expressed by Health Effects Institute (2007). As a result, there is no national consensus on air dose-response values assumed to protect the public health and welfare for MSAT compounds, and in particular for diesel PM. The EPA and the Health Effects Institute have not established a basis for quantitative risk assessment of diesel PM in ambient settings.

There is also a lack of a national consensus on an acceptable level of risk. The current context is the process used by the EPA to determine whether more stringent controls are required in order to provide an ample margin of safety. The first step in the decision framework requires the EPA to determine a "safe" or "acceptable" level of risk due to emissions from a source, which is generally no greater than approximately 100 in a million. Additional factors are considered in the second step, the goal of which is to maximize the number of people with risks less than 1 in a million due to emissions from a source. The results of this statutory two-step process do not guarantee that cancer risks from exposure to air toxics are less than 1 in a million; in some cases, the residual risk determination could result in maximum individual cancer risks that are as high as approximately 100 in a million.

Because of the limitations in the methodologies for forecasting health impacts described, any predicted difference in health impacts between alternatives is likely to be much smaller than the uncertainties associated with predicting the impacts. Consequently, the results of such assessments would not be useful to decision makers, who would need to weigh this information against project benefits, such as reducing traffic congestion, accident rates, and fatalities plus improved access for emergency response, that are better suited for quantitative analysis.

| This document provides a quantitative assessment of MSAT emissions relative to the various alternatives and acknowledges that any of the project alternatives may result in increased exposure to MSAT emissions in certain locations.

Evaluation of Project MSAT Impacts. A qualitative analysis provides a basis for identifying and comparing the potential differences among MSAT emissions from the various alternatives. The qualitative assessment presented below is derived in part from FHWA's "Interim Guidance Update

on Mobile Source Air Toxic Analysis in NEPA Documents,” dated September 30, 2009, found at http://www.fhwa.dot.gov/environment/air_quality/air_toxics/policy_and_guidance/100109guidmem.cfm. (FHWA 2009b).

The amount of MSATs emitted would be proportional to VMT, assuming that other variables such as fleet mix are the same for each alternative. The VMT estimated for the Build Alternatives is slightly higher than that for the No Build Alternative because the additional capacity would increase the efficiency of the roadway and could attract rerouted trips from elsewhere in the transportation network. This increase in VMT would lead to higher MSAT emissions for the action alternative along the highway corridor, along with a corresponding decrease in MSAT emissions along the parallel routes. The emissions increase would be offset somewhat by lower MSAT emission rates due to increased speeds; according to EPA’s MOBILE6 emissions model, emissions of all of the priority MSATs except for diesel PM decrease as speed increases. The extent to which these speed-related emissions decreases would offset VMT-related emissions increases cannot be reliably projected due to the inherent deficiencies of technical models.

The proposed project falls under Level 3, quantitative analysis projects with higher potential MSAT effects. Because the project creates a major intermodal freight facility that has the potential to concentrate high levels of diesel particulate matter in a single location, and because the project is in proximity to populated areas, the project is considered to be a Level 3 project, and a quantitative analysis to differentiate alternatives for projects with higher potential MSAT effects was conducted.

As described above, emission factors for five of the seven priority MSATs (acrolein, benzene, 1,3-butadiene, formaldehyde, and diesel particulate matter) have been obtained for the SDAB using CT-EMFAC V2.6. CT-EMFAC model runs were conducted based on the assumption in the Traffic Report that diesel truck traffic would comprise 15 percent of traffic on SR-11. CT-EMFAC V2.6 does not calculate emissions of the remaining two priority MSATs, naphthalene and polycyclic organic matter (POM). Based on information from the EPA on POM (<http://www.epa.gov/ttn/atw/hlthef/polycycl.html>), POM includes a broad class of compounds that includes the PAHs, of which benzo(a)pyrene is a member. The EPA has identified seven PAHs as probable human carcinogens: benzo(a)pyrene, benz(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene. The ARB does not provide speciation profiles for POM for vehicles, nor does it provide speciation profiles for the seven PAHs identified as probable human carcinogens. However, according to the ARB, one class of compounds typically present on diesel PM is polycyclic aromatic hydrocarbons (http://www.arb.ca.gov/research/diesel/dpm_health_fs.pdf). Because the majority of both naphthalene and POM emissions would be from diesel vehicles, and because diesel vehicles are assumed to make up 15 percent of the vehicles traveling on SR-11, naphthalene and POM were not evaluated separately from diesel PM.

Because existing conditions and the No Build Alternative do not involve construction of SR-11, it is not possible to compare existing MSAT emissions or MSAT emissions for the No Build Alternative with MSAT emissions with the proposed build alternatives. Results of the 2015 and 2030 analyses are shown in Table 3.16-6, *Total MSAT Emissions for 2015 and 2030*.

Table 3.16-6
TOTAL MSAT EMISSIONS FOR 2015 AND 2030

Alternative	Variation	Segment	Emissions, grams/day				
			Diesel PM	Formaldehyde	1,3-Butadiene	Benzene	Acrolein
Preferred Alternative	N/A	2015 Total	2160.72	537.07	119.93	597.34	28.04
		2015 Per VMT	0.01302	0.00324	0.00072	0.00360	0.00017
		2030 Total	2916.55	528.05	140.28	710.4	33.67
		2030 Per VMT	0.00984	0.00178	0.00047	0.00240	0.00011
		% Reduction per VMT	24.45	44.97	34.53	33.43	32.79
Two Interchange Alternative	No Toll	2015 Total	888.46	220.85	49.32	245.62	11.52
		2015 Per VMT	0.01302	0.00324	0.00072	0.00360	0.00017
		2030 Total	1,227.25	221.31	58.8	297.32	14.11
		2030 Per VMT	0.00812	0.00118	0.00039	0.00197	0.00009
		% Reduction per VMT	37.62	54.75	46.16	45.34	44.69
	Toll	2015 Total	780.91	194.1	43.34	215.88	10.14
		2015 Per VMT	0.01302	0.00324	0.00072	0.00360	0.00017
		2030 Total	1,131.39	204.45	54.37	274.67	13.04
		2030 Per VMT	0.00816	0.00147	0.00039	0.00198	0.00009
		% Reduction per VMT	37.33	54.44	45.73	44.96	44.37
	Toll (SR-125 Connector)	2015 Total	2160.72	537.07	119.93	597.34	28.04
		2015 Per VMT	0.01302	0.00324	0.00072	0.00360	0.00017
		2030 Total	2916.55	528.05	140.28	710.4	33.67
		2030 Per VMT	0.00984	0.00178	0.00047	0.00240	0.00011
		% Reduction per VMT	24.45	44.97	34.53	33.43	32.79
	No Toll (Siempre Viva Road Full Interchange)	2015 Total	2274.71	565.41	125.94	574.83	29.51
		2015 Per VMT	0.01302	0.00324	0.00072	0.00329	0.00017
		2030 Total	2838.75	513.47	136.13	624.86	32.74
		2030 Per VMT	0.00814	0.00147	0.00039	0.00179	0.000094
		% Reduction per VMT	37.52	54.53	45.88	45.58	44.45
	Toll (Siempre Viva Road Full Interchange)	2015 Total	2130.31	529.52	117.94	538.34	27.65
		2015 Per VMT	0.01302	0.00324	0.00072	0.00329	0.00017
		2030 Total	2726.96	492.79	130.57	599.38	31.4
		2030 Per VMT	0.00812	0.00147	0.00039	0.00178	0.000094
		% Reduction per VMT	37.66	54.68	46.09	45.78	44.70
One Interchange Alternative	No Toll	2015 Total	855.43	212.53	47.46	236.37	11.1
		2015 Per VMT	0.01303	0.00324	0.00072	0.00360	0.00017
		2030 Total	1,078.85	195.5	52.05	262.63	12.49
		2030 Per VMT	0.00821	0.00149	0.00040	0.00200	0.00010
	Toll	% Reduction per VMT	37.02	54.06	45.23	44.51	43.81
		2015 Total	754.33	187.5	41.87	208.54	9.79
		2015 Per VMT	0.01302	0.00324	0.00072	0.00360	0.00017
		2030 Total	983.94	178.3	47.47	239.53	11.39
		2030 Per VMT	0.00821	0.00149	0.00040	0.00200	0.00009
		% Reduction per VMT	36.99	54.06	45.23	44.51	43.80
	Toll (SR-125 Connector)	2015 Total	844.42	209.89	46.87	233.45	10.96
		2015 Per VMT	0.01302	0.00324	0.00072	0.00360	0.00017
		2030 Total	1,056.16	191.38	50.95	257.11	12.22
		2030 Per VMT	0.00821	0.00149	0.00040	0.00200	0.00009
		% Reduction per VMT	36.99	54.06	45.24	44.52	43.83

Table 3.16-6 (cont.)
TOTAL MSAT EMISSIONS FOR 2015 AND 2030

Alternative	Variation	Segment	Emissions, grams/day				
			Diesel PM	Formaldehyde	1,3-Butadiene	Benzene	Acrolein
No Interchange Alternative	No Toll	2015 Total	951.8	236.58	52.83	263.13	12.35
		2015 Per VMT	0.01302	0.00324	0.00072	0.00360	0.00017
		2030 Total	1,020.56	184.93	49.24	248.44	11.81
		2030 Per VMT	0.00821	0.00149	0.00040	0.00200	0.00009
		% Reduction per VMT	36.99	54.06	45.23	44.51	43.80
	Toll	2015 Total	826.69	205.48	45.89	228.54	10.73
		2015 Per VMT	0.01302	0.00324	0.00072	0.00360	0.00017
		2030 Total	874.4	158.45	42.19	212.86	10.12
		2030 Per VMT	0.00821	0.00149	0.00040	0.00200	0.00009
		% Reduction per VMT	36.99	54.06	45.23	44.51	43.81

Source: Scientific Resources Associated 2010, 2011

Based on Table 3.16-6, differences in MSAT emissions between build alternatives would not be substantial. Based on the traffic analysis, the VMT for the Preferred Alternative would be the same as for the Two Interchange Alternative with a toll and with the SR-125 Connector Variation. The MSAT results for that combined Draft EIR/EIS alternative and variation were consequently applied to the Preferred Alternative without additional detailed MSAT analysis. For the year 2015, the Two Interchange Alternative with no toll and the Siempre Viva Road Full Interchange Variation would have the highest MSAT emissions among the build alternatives. The lowest MSAT emissions would result from the One Interchange Alternative with the toll. For the year 2030, the Preferred Alternative and the Two Interchange Alternative with a toll and with the SR-125 Connector Variation would have the highest MSAT emissions among the alternatives. The lowest MSAT emissions in 2030 would result from the No Interchange Alternative with the toll.

As shown in the table, a significant decrease in MSAT emissions can be expected for the proposed alternatives from 2015 through 2030 on a VMT basis. This decrease is prevalent throughout the highest-priority MSATs and the analyzed alternatives, regardless of the difference in mainline configurations. This decrease also is consistent with the aforementioned EPA's study that projects a significant reduction in on-highway emissions of benzene, formaldehyde, and 1,3-butadiene between 2000 and 2020. According to the result of analysis shown in Table 3.16-6, reductions in existing MSAT emission rates per VMT expected between 2015 and 2030 are between 24 and 38 percent of diesel PM, 33 and 46 percent of benzene, 35 and 46 percent of 1,3-butadiene, 33 and 45 percent of acrolein, and 33 and 55 percent of formaldehyde, depending on the build alternatives that is implemented.

The Preferred Alternative or any of the other build alternatives would substantially relieve congestion in the Otay Mesa region over existing conditions, resulting in an overall reduction in MSAT emissions in the region. There are sensitive land uses (commercial and industrial) within 500 feet of the nearest lane affected by such emissions. Therefore, reduced emissions would benefit those land uses adjacent to the freeway.

Regardless of the alternative chosen, emissions would likely be lower than present levels in the design year as a result of EPA's national control programs that are projected to reduce MSAT emissions by 57 to 87 percent between 2000 and 2020. Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. The magnitude of the EPA-projected reductions, however, is so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future in nearly all cases.

Asbestos Impacts

There would be no demolition or renovation of existing buildings and bridges; therefore, airborne asbestos would not be a concern within the project limits.

According to the report “A General Location Guide for Ultramafic Rocks in California - Areas More Likely to Contain Naturally Occurring Asbestos” (California Department of Conservation [CDC] 2000), in the coastal portion of San Diego County, NOA is not typically found in the geological formations present at the proposed project site (CDC 2000). Thus, hazardous exposure to asbestos-containing serpentine materials would not be a concern with the proposed project.

Construction Impacts

State Route 11

Regional Emissions. The principal criteria pollutants emitted during construction of SR-11 would be PM₁₀ and PM_{2.5}. The source of the pollutants would be fugitive² dust created during clearing, grubbing, excavation, and grading; demolition of structures and pavement; vehicle travel on paved and unpaved roads; and material blown from unprotected graded areas, stockpiles, and haul trucks. Generally, the distance that particles drift from their source depends on their size, emission height, and wind speed. About 50 percent of fugitive dust is made up of relatively large particles, greater than 100 microns in diameter. These particles are responsible for the reduced visibility often associated with construction, as well as the nuisance caused by the deposition of dust on vehicles, and in exterior areas used by people for recreation and business. Given their relatively large size, these particles tend to settle within 20 to 30 feet of their source. Small particles, less than 100 microns in diameter, can travel nearly 330 feet before settling to the ground, depending on wind speed. These smaller particles also contribute to visibility and nuisance impacts, and include PM₁₀ and PM_{2.5}, which are potential health hazards.

An additional important source of pollutants during construction would be the engine exhaust from construction equipment. The principal pollutants of concern would be NO_x and reactive organic gas emissions that would contribute to the formation of O₃, which is a regional nonattainment pollutant.

Federal conformity regulations require analysis of construction impacts for projects when construction activities would last for more than five years. SR-11 would be completed in 2015 and construction would last less than five years; therefore, no quantitative estimates of regional construction emissions have been made. It is, however, recommended that specific measures to control dust and particulates be incorporated into project specifications (see Section 3.16.5, *Avoidance, Minimization, and Mitigation Measures*).

Local Emissions. According to 40 CFR Section 93.123(5), CO, PM₁₀, and PM_{2.5} hot spot analyses are not required for construction-related activities that create a temporary increase in air emissions. Temporary is defined as increases that only occur during a construction phase and last five years or less at any individual site. The construction phase of the proposed project would last for approximately two to three years and would be considered temporary. Thus, no local hot spot is anticipated and a hot spot analysis is not required for construction of the proposed project.

Diesel particulate emissions may be a potential concern. While there is no formal guidance for impact analysis, potential adverse impacts would be increased if construction equipment and truck staging areas were to be located near schools, active recreation areas, or areas of higher population density. The nearest

¹ “Fugitive” is a term used in air quality analysis to denote emission sources that are not confined to stacks, vents, or similar paths.

school to the project, San Ysidro High School, is approximately two miles from the SR-11 alignment, which would represent a potential impact.³

During construction, diesel equipment operating at the site could generate some nuisance odors; however, due to the distance from existing sensitive receptors to the project site and the temporary nature of construction, this impact would not be substantial. Operation of the project would not involve any uses or activities that would be expected to result in objectionable odors.

Otay Mesa East Port of Entry and Commercial Vehicle Enforcement Facility

The POE and CVEF facilities subject to general conformity would be constructed in over a period of approximately two years. Construction is estimated to take 24 to 30 months and would be completed in 2015. During construction, short-term degradation of air quality may occur due to the release of particulate emissions (airborne dust) generated by excavation, grading, hauling, and various other activities. Emissions from construction equipment also are anticipated and would include CO, NO_x, VOCs, directly-emitted PM (PM₁₀ and PM_{2.5}), and toxic air contaminants such as diesel exhaust particulate matter. O₃ is a pollutant that is derived from NO_x and VOCs in the presence of sunlight and heat.

Construction-related effects on air quality would be greatest during site preparation because most engine emissions are associated with the excavation, handling, and transport of soils to and from the construction site(s). If not properly controlled, these activities would temporarily generate PM₁₀, PM_{2.5}, and small amounts of CO, SO₂, NO_x, and VOCs. Sources of fugitive dust would include disturbed soils at the construction site(s) and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site would deposit mud on local streets, which could be an additional source of airborne dust after it dries. PM₁₀ emissions would vary from day to day, depending on the nature and magnitude of construction activity and local weather conditions. PM₁₀ emissions would depend on soil moisture, silt content of soil, wind speed, and the amount of equipment operating. Larger dust particles would settle near the source, while fine particles would be dispersed over greater distances from the construction site.

In addition to dust-related PM₁₀ emissions, heavy trucks and construction equipment powered by gasoline and diesel engines would generate CO, SO₂, NO_x, VOCs, and some soot particulate (PM₁₀ and PM_{2.5}) in exhaust emissions. If construction activities were to increase traffic congestion in the area, CO and other emissions from traffic would increase slightly while those vehicles are delayed. These emissions would be temporary and limited to the immediate area surrounding the construction site(s).

The *Air Quality Technical Report for Construction Emissions* (Caltrans 2010d) evaluated construction emissions by comparing projected annual construction emissions of the POE structures with de minimis thresholds established under 40 CFR Part 93, the General Conformity Rule, which applies to federal projects in nonattainment areas. As stated earlier, the SDAB is currently considered a nonattainment area for O₃ and a maintenance area for CO. The de minimis thresholds for O₃ precursors (NO_x and VOCs) and CO are 100 tons per year.

Annual emissions for the construction phase would be below the de minimis thresholds for all pollutants (i.e., 100 tons per year) during construction of the POE facilities, as shown in Table 3.16-7, *Estimated Construction Emissions – All Build Alternatives*. No associated adverse impacts would occur during construction of the project.

³ While Southwestern College is an educational facility and is located nearer the proposed project than is San Ysidro High School, colleges are not typically considered sensitive receptors because they cater to adults rather than children, who have a more sensitive respiratory system.

Table 3.16-7 ESTIMATED CONSTRUCTION EMISSIONS – ALL BUILD ALTERNATIVES						
Emission Source	CO	ROC	NO_x	SO_x	PM₁₀	PM_{2.5}
Tons/Year						
<i>Phase I</i>						
Site Grading Fugitive Dust	-	-	-	-	4.88	1.02
Earthmoving Fugitive Dust	-	-	-	-	9.59	1.17
Heavy Construction Equipment	24.55	6.98	44.73	0.05	3.04	2.71
Worker Travel – Vehicle Emissions	4.86	0.23	0.45	0.01	0.06	0.03
Construction Truck Emissions	10.43	2.17	29.32	0.04	1.29	1.11
TOTAL	39.84	9.29	74.50	0.10	18.86	6.04
Significance Criteria	100	50	100	100	100	55
<i>Significant?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>

Source: Scientific Resources Associated 2010

No Build Alternative

To the extent that the build alternatives are anticipated to reduce delay time and improve operating conditions in the region, these benefits would not be realized under the No Build Alternative.

The No Build Alternative would not result in MSAT emissions in the immediate vicinity of the proposed corridor and would result in slightly less VMT. However, reductions in regional congestion that would contribute to higher speeds and a resultant regional reduction in MSAT emissions similarly would not be realized under the No Build Alternative.

Unlike the build alternatives, no construction-related emissions would occur under the No Build Alternative.

3.16.4 Avoidance, Minimization, and/or Mitigation Measures**Preferred Alternative and Draft EIR/EIS Build Alternatives and Variations**

The project would comply with Caltrans Standard Specifications Section 14 (2010e). The following typical Caltrans practices to be employed during project construction would minimize the emission of fugitive dust, PM₁₀, PM_{2.5} and diesel:

- Minimize land disturbance
- Use watering trucks to minimize dust; watering should be sufficient to confine dust plumes to the project work areas
- Suspend grading and earth moving when wind gusts exceed 25 mph unless the soil is wet enough to prevent dust plumes
- Stabilize the surface of inactive stockpiles
- Limit vehicular paths on unpaved surfaces and stabilize any temporary roads

- Minimize unnecessary vehicular and machinery activities
- Street sweeping should be conducted where sediment is tracked from the job site onto paved roads, and should be performed immediately after soil-disturbing activities occur or off-site tracking of material is observed
- Revegetate disturbed land, including vehicular paths created during construction, to avoid future off-road vehicular activities
- Locate construction equipment and truck staging and maintenance areas as far as feasible and nominally downwind of schools, active recreation areas, and other areas of high population density to minimize exposure to diesel particulates
- Use low-emission on-site mobile construction equipment where feasible
- Maintain equipment in tune per manufacturer's specifications
- Retard diesel engine injection timing by two to four degrees unless not recommended by manufacturer (due to lower emission output in-place)
- Use reformulated, low-emission diesel fuel
- Substitute electric and gasoline-powered equipment for diesel-powered equipment where feasible
- Use catalytic converters on gasoline-powered equipment
- Do not leave inactive construction equipment idling for prolonged periods

No Build Alternative

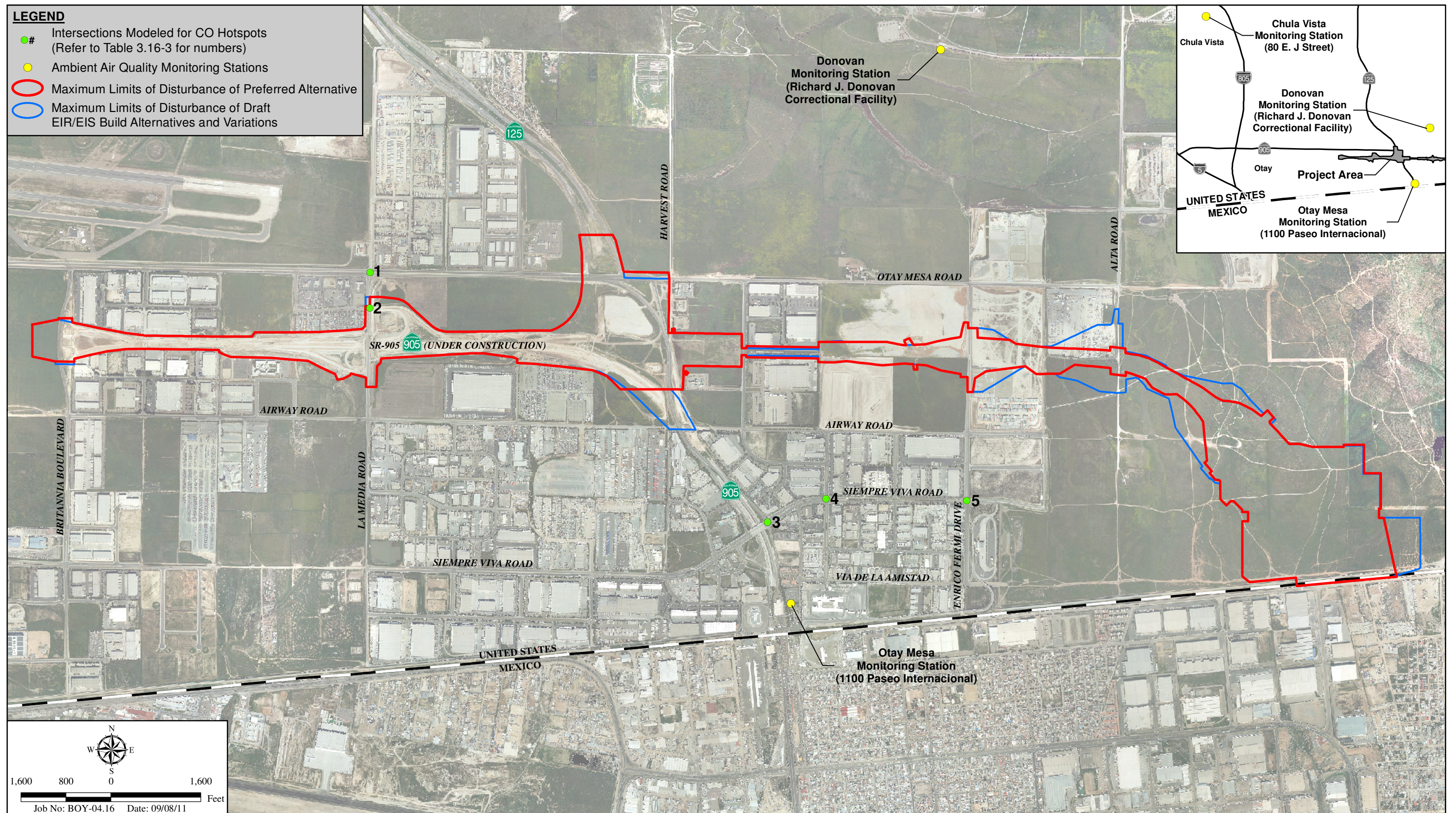
Because no project action would occur under the No Build Alternative, no associated avoidance, minimization, or mitigation measures would be required.

3.16.5 Climate Change

Climate change is analyzed in Section 4.7. Neither EPA nor FHWA has promulgated explicit guidance or methodology to conduct project-level greenhouse gas analysis. As stated on FHWA's climate change website (<http://www.fhwa.dot.gov/hep/climate/index.htm>), climate change considerations should be integrated throughout the transportation decision-making process—from planning through project development and delivery (FHWA 2009c). Although analysis of greenhouse gas emissions at the project level is not particularly meaningful or informative, addressing climate change mitigation and adaptation up front in the planning process will facilitate decision-making and improve efficiency at the program level, and will inform the analysis and stewardship needs of project level decision-making. Climate change considerations can easily be integrated into many planning factors, such as supporting economic vitality and global efficiency, increasing safety and mobility, enhancing the environment, promoting energy conservation, and improving the quality of life.

Because there have been more requirements set forth in California legislation and executive orders regarding climate change, the issue is addressed in the CEQA chapter of this environmental document and is used to inform the NEPA analysis and associated federal decisions. FHWA's efforts in reducing greenhouse gas (GHG) emissions include identification of California SB 375 furthering those goals. The four strategies set forth by FHWA to lessen climate change impacts do correlate with efforts that the state has undertaken and is undertaking to deal with transportation and climate change; the strategies include improved transportation system efficiency, cleaner fuels, cleaner vehicles, and reduction in the growth of vehicle hours travelled.

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STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

Figure 3.16-1

3.17 NOISE

3.17.1 Regulatory Setting

NEPA and CEQA provide the broad basis for analyzing and abating highway traffic noise effects. The intent of these laws is to promote the general welfare and to foster a healthy environment. The requirements for noise analysis and consideration of noise abatement and/or mitigation, however, differ between NEPA and CEQA.

California Environmental Quality Act

CEQA requires a strictly baseline versus build analysis to assess whether a proposed project will have a noise impact. If a proposed project is determined to have a significant noise impact under CEQA, then CEQA dictates that mitigation measures must be incorporated into the project unless such measures are not feasible. The rest of this section will focus on the NEPA-23 CFR 772 noise analysis; please see Chapter 4.0 of this document for further information on noise analysis under CEQA.

National Environmental Policy Act and 23 CFR 772

For highway transportation projects with FHWA involvement, the Federal-Aid Highway Act of 1970 and the associated implementing regulations (23 CFR 772) govern the analysis and abatement of traffic noise impacts. The regulations require that potential noise impacts in areas of frequent human use be identified during the planning and design of a highway project. The regulations contain NAC that are used to determine when a noise impact would occur. The NAC differ depending on the type of land use under analysis. For example, the NAC for residences (67 dBA) is lower than the NAC for commercial areas (72 dBA). The following matrix lists the noise abatement criteria for use in the NEPA-23 CFR 772 analysis.

Activity Category	NAC, Hourly A-Weighted Noise Level, dBA $L_{eq}(h)$	Description of Activities
A	57 Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose
B	67 Exterior	Picnic areas, recreation areas, playgrounds, active sport areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals
C	72 Exterior	Developed lands, properties, or activities not included in Categories A or B above
D	–	Undeveloped lands
E	52 Interior	Residence, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums

Table 3.17-1, *Noise Levels of Common Activities*, lists the noise levels of common activities to enable readers to compare the actual and predicted highway noise-levels discussed in this section with common activities.

Table 3.17-1 NOISE LEVELS OF COMMON ACTIVITIES		
Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
Jet Fly-over at 300m (1000 ft)	110	Rock Band
Gas Lawn Mower at 1 m (3 ft)	100	
Diesel Truck at 15 m (50 ft), at 80 km (50 mph)	90	Food Blender at 1 m (3 ft)
Noisy Urban Area, Daytime	80	Garbage Disposal at 1 m (3 ft)
Gas Lawn Mower, 30 m (100 ft)	70	Vacuum Cleaner at 3 m (10 ft)
Commercial Area		Normal Speech at 1 m (3 ft)
Heavy Traffic at 90 m (300 ft)	60	Large Business Office
Quiet Urban Daytime	50	Dishwasher Next Room
Quiet Urban Nighttime	40	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime	30	Library
Quiet Rural Nighttime	20	Bedroom at Night, Concert Hall (Background)
	10	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	0	Lowest Threshold of Human Hearing

In accordance with Caltrans' *Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects, August 2006* (2006c), a noise impact occurs when the future noise level with the project results in a substantial increase in the noise level (defined as a 12 dBA or more increase) or when the future noise level with the project approaches or exceeds the NAC. Approaching the NAC is defined as coming within one dBA of the NAC.

If it is determined that the project will have noise impacts, then potential abatement measures must be considered. Noise abatement measures that are determined to be reasonable and feasible at the time of final design are incorporated into the project plans and specifications. This document discusses noise abatement measures that would likely be incorporated in the project.

If undeveloped lands are *planned, designed and programmed* (i.e., all final discretionary approvals received from the local jurisdiction) before the final project approval under NEPA or CEQA, noise abatement must be considered as part of the transportation project. Undeveloped land adjacent to highway R/W that is planned, designed and programmed after the final project approval is considered an Activity Category D land use. Noise abatement is not considered for Activity Category D land uses.

Caltrans' *Traffic Noise Analysis Protocol* sets forth the criteria for determining when an abatement measure is reasonable and feasible. Feasibility of noise abatement is basically an engineering concern. A minimum five dBA reduction in the future noise level must be achieved for an abatement measure to be considered feasible. Other considerations include topography, access requirements, other noise sources and safety considerations. The reasonableness determination is basically a cost-benefit analysis. Factors used in determining whether a proposed noise abatement measure is reasonable include: residents' acceptance, the absolute noise level, build versus existing noise, environmental impacts of abatement, public and local agencies' input, newly constructed development versus development pre-dating 1978 and the cost per benefited residence.

3.17.2 Affected Environment

A Noise Study Report (HELIX 2010b) was prepared to assess the potential noise impacts associated with the proposed project. It is incorporated into this document by reference and forms the basis for this Noise section of the Final EIR/EIS. The report identifies noise-sensitive locations, and predicts future traffic noise levels for the No Build and build alternatives. Future noise levels for all alternatives were modeled using LOS C traffic volumes to obtain the worst-case noise scenario.

Existing Land Uses

A field investigation was conducted to identify land uses that could be subject to traffic and construction noise impacts from the proposed project. The area adjacent to the proposed project consists of commercial, industrial, and undeveloped uses, as well as one educational use (Southwestern College satellite campus). The project area west of Enrico Fermi Drive was previously approved as part of the SR-905 project. The surrounding industrial and commercial land uses are considered land use Activity Category C; the college is land use Activity Categories B and E; and the undeveloped parcels are land use Activity Category D.

Table 3.17-2 EXISTING NOISE LEVELS AT RECEIVERS IN THE PROJECT AREA				
Receiver Number	Address/Station Number¹	Assessors Parcel Number	Activity Category (NAC)	Existing Worst Hour Noise Levels Leq(h), dBA
R-1	7550 Panasonic Way/547+14	646-220-3100	C (72)	57 ²
R-2	1654 St. Andrews Avenue/549+84	646-221-3200	C (72)	57 ²
R-3	7558 Panasonic Way/550+45	646-220-0200	C (72)	57 ²
R-4	7651 St. Andrews Avenue/552+61	646-221-1600	C (72)	57 ²
R-5	7664 Panasonic Way/556+20	646-220-0400	C (72)	57 ²
R-6	7685 St. Andrews Avenue/557+28	646-221-2800	C (72)	57 ²
R-7	7664 Panasonic Way/559+82	646-220-0400	C (72)	57 ²
R-8	7701 St. Andrews Avenue/565+47	646-221-3100	C (72)	57 ²
R-9	7810 Waterville Road/568+01	646-220-2100	C (72)	57 ²

Table 3.17-2 (cont.) EXISTING NOISE LEVELS AT RECEIVERS IN THE PROJECT AREA				
Receiver Number	Address/Station Number¹	Assessors Parcel Number	Activity Category (NAC)	Existing Worst Hour Noise Levels Leq(h), dBA
R-10	Southwestern College, Higher Education Center, 8100 Gigantic Street/572+70	646-111-4200	B (67) ⁶	57 ²
R-11	Southwestern College, Higher Education Center, 8100 Gigantic Street/579+69	646-111-4200	B (67) ⁷ and E(52) ⁸	57 ²
R-12	8375 St. Andrews Avenue/591+17	646-111-4500	C (72)	57 ²
R-13	7810 Waterville Road/617+20	646-220-2100	C (72)	55 ³
R-14	9020 Airway Road/631+20	646-121-2600	C (72)	55 ³
R-15	1840 Dornoch Court/39+74 ^{9, 10, 11, 12}	646-131-0400	C (72)	62 ⁴
R-16	2001 Sanyo Avenue/40+80 ^{9, 11, 12}	646-131-1400	C (72)	62 ⁴
R-17	1855 Dornoch Court/47+55 ^{9, 11, 12}	646-131-0900	C (72)	62 ⁴
R-18	8389 St. Andrews Avenue/83+13 ¹²	648-070-0900	C (72)	51 ⁵
R-19	7247 Otay Mesa Road/93+16 ¹²	648-070-1300	C (72)	51 ⁵

¹ SR-905 station numbers, unless otherwise indicated.

² As measured at short-term monitoring locations ST-3 and ST-8.

³ As measured at short-term monitoring location ST-7.

⁴ As measured at long-term monitoring location LT-1.

⁵ As measured at long-term monitoring location LT-2.

⁶ At Southwestern College outdoor track

⁷ Outside Southwestern College building

⁸ Inside Southwestern College building

⁹ Building Entrance Areas

¹⁰ Outdoor Break Area

¹¹ Guard Station

¹² SR-11 station numbers

Source: HELIX 2010b

Land uses surrounding the proposed project are dominated by undeveloped land and industrial uses, along with several vehicle storage lots and the existing CVEF. Existing and proposed development in the land use study area consists primarily of industrial and transborder support uses, many of which were established with the expectation that facilities provided by the proposed project would be developed. SR-11 and the Otay Mesa East POE would be consistent with the County General Plan, EOMSP, the City General Plan and the OMCP.

Much of the planned development in the area is industrial use associated with the maquiladora industry, and is partially dependent upon or would benefit from the proposed project. Property owners/developers have been tracking the proposed project and have been planning/designing their development projects to accommodate SR-11 and the proposed POE, in the location that was selected in the Phase I ROD for the proposed project.

Ambient Noise Levels

The ambient noise environment in the project area is characterized below, based on short-term and long-term noise monitoring conducted for this study. Measurements were taken to determine existing noise levels. The sites were chosen as being representative of similar sites in the area. No traffic monitoring data were collected or needed for this study. Since this project would be all new construction and construction of SR-905 has not yet been completed, all noise in the project area would be considered ambient noise, and no separate background noise level is identified. Ambient noise was primarily generated by vehicular traffic, air traffic (Brown Field and Border Patrol aircraft), and commercial and industrial uses.

Six short-term measurements were taken, in the locations shown as ST-3 to ST-8 on Figure 3.17-1, *Noise Receiver and Monitoring Locations*. As reported in Table 6-2 of the NSR, the short-term measurements ranged from 46 to 65 dBA L_{EQ} in the project area.

As shown in Figure 3.17-1, long-term monitoring locations were sited near the southern terminus of Dornoch Court, north of SR-11 Station 45+72 (LT-1), and in the undeveloped area near SR-11 Station 125+64 (LT-2). As reported in Figures 6-2 and 6-3 of the NSR, the long-term measurements ranged from 46 to 62 dBA L_{EQ} .

3.17.3 Environmental Consequences

To determine traffic noise impacts, 19 receiver locations were identified in the study area (refer to Figure 3.17-1), and the noise levels at these receivers were modeled (refer to Table 3.17-3, *Predicted Future Noise Levels for the Draft EIR/EIS Build Alternatives*). Traffic noise levels were predicted using the FHWA Traffic Noise Model Version 2.5 (TNM 2.5). Key inputs to the traffic noise computer model were the locations of roadways, shielding features (e.g., topography and buildings), noise barriers, ground type, and receivers. The proposed project is a Type I project (a proposed Federal or Federal-aid highway project for the construction of a highway on a new location). Because SR-11 would be a new roadway located in a predominately undeveloped area, and SR-905 in this location would be a new roadway that is not yet complete, no comparison of TNM modeled noise levels to measured levels is possible.

Worst-case traffic noise typically occurs when traffic is operating under LOS C conditions. Under LOS C conditions, traffic is heavy, but remains free flowing. The noise analysis assumes LOS C traffic conditions, which would constitute a worst case scenario for both the toll and no toll versions of the project. Since the analysis would be identical, the predicted noise levels are the same for both toll and no toll versions of the project, and the No Toll Variation is not analyzed separately in the NSR or this section of the Final EIR/EIS. Similarly, all alternatives analyzed in the Draft EIR/EIS were assumed to include the SR-905/SR-125/SR-11 Full Interchange Variation (i.e., all potential future connectors), to assess the worst case scenario for any of the build alternatives. The Preferred Alternative includes fewer connectors in this interchange (comparable to the SR-125 Connector Variation of the Two Interchange Alternative), so noise levels in this area would be less than the worst case scenario analyzed for the Draft EIR/EIS alternatives.

The model was run with the most conservative traffic conditions: LOS C volumes for each lane, with 15 percent trucks in the two outside lanes. Therefore, the model produces the loudest possible noise levels, regardless of hour of day.

Impacts at the receiver locations are evaluated below through comparison of predicted future noise levels to ambient noise levels at the receiver locations (refer to Table 3.17-3). The NSR and this section analyze the significance of noise impacts from the proposed project alternatives based on consistency with the applicable NACs and whether the receiver has areas of frequent human use that would benefit from a lowered noise level. It is noted that no receivers currently are located adjacent to the POE and CVEF north of the border with Mexico; thus only the noise on SR-11 and the portion of SR-905 to be modified by the project is analyzed in this section.

Table 3.17-3
PREDICTED FUTURE NOISE LEVELS FOR THE DRAFT EIR/EIS BUILD ALTERNATIVES

Receiver Number	Land Use	Activity Category (NAC in dBA)	Existing Noise Levels, $L_{eq(h)}$, dBA ¹	Two Interchange Alternative		One Interchange Alternative		No Interchange Alternative	
				Noise Level with Project ²	Impact Type ³	Noise Level with Project ²	Impact Type ³	Noise Level with Project ²	Impact Type ³
R-1	I	C (72)	57 ⁴	68	None	68	None	68	None
R-2	I	C (72)	57 ⁴	70	S ⁵	70	S ⁵	70	S ⁵
R-3	I	C (72)	57 ⁴	73	S ⁵	73	S ⁵	73	S ⁵
R-4	I	C (72)	57 ⁴	75	S ⁵	75	S ⁵	75	S ⁵
R-5	I	C (72)	57 ⁴	79	S ⁵	79	S ⁵	79	S ⁵
R-6	I	C (72)	57 ⁴	77	S ⁵	77	S ⁵	77	S ⁵
R-7	I	C (72)	57 ⁴	79	S ⁵	79	S ⁵	79	S ⁵
R-8	I	C (72)	57 ⁴	77	S ⁵	77	S ⁵	77	S ⁵
R-9	I	C (72)	57 ⁴	79	S ⁵	79	S ⁵	79	S ⁵
R-10 ^{Cr}	E	B (67)	57 ⁴	74	A/E ⁶	74	A/E ⁶	74	A/E ⁶
R-11 (outside)	E	B (67)	57 ⁴	75	S ⁷	75	S ⁷	75	S ⁷
R-11 (inside)	E	E (52)	N/A	50 ⁸	None	50 ⁸	None	50 ⁸	None
R-12	I	C (72)	57 ⁴	69	S ⁵	69	S ⁵	69	S ⁵
R-13	I	C (72)	55 ⁹	72	S ⁵	72	S ⁵	72	S ⁵
R-14	I	C (72)	55 ⁹	71	S ⁵	71	S ⁵	71	S ⁵
R-15	I	C (72)	62 ¹⁰	68	None	67	None	67	None
R-16	I	C (72)	62 ¹⁰	67	None	65	None	65	None
R-17	I	C (72)	62 ¹⁰	67	None	65	None	65	None
R-18	I	C (72)	51 ^{11, 12}	69	S ⁵	64	S ⁵	64	S ⁵
R-19	I	C (72)	51 ^{11,12}	72	S ⁵	67	S ⁵	72	S ⁵

¹ At R-1 to R-17, the approved design of SR-905 (currently under construction) would produce the majority of the existing build-out noise. Cumulative noise levels associated with SR-11 improvements would not result in an audible change, as described in the qualitative discussion and reflected in NSR Worksheet A.

² With project build alternatives, without noise barriers.

³ S = Substantial increase (12 dBA or more); A/E = approaches or exceeds NAC; or None = Does not exceed NAC or result in substantial increase)

⁴ As measured at short term monitoring locations ST-3 and ST-8.

⁵ Although noise levels approach or exceed NAC, and increase would be substantial, the receiver does not have an outdoor use area that would benefit from reduced noise levels.

⁶ Although this receiver would experience a substantial increase when compared to existing noise levels, there would not be a substantial noise increase if compared to the build-out configuration of SR-905, as shown in NSR Worksheet A. In either case, noise levels would approach or exceed NAC.

⁷ In a location that does not function as an area of frequent outdoor use; measurement used for interior analysis.

⁸ Calculated based on modeled R-11 exterior noise level and exterior to interior analysis.

⁹ As measured at short term monitoring location ST-7.

¹⁰ As measured at long term monitoring location LT-1.

¹¹ As measured at long term monitoring location LT-2.

¹² Future No Build noise levels would be higher than existing noise levels, due to planned cumulative area development.

I = Industrial; E = Educational, Cr=Critical receiver

Source: HELIX 2010b

Operational Noise Impacts

Preferred Alternative and Draft EIR/EIS Build Alternatives

Preferred Alternative

The Preferred Alternative would be similar in most respects (including the Sanyo Avenue area) to the Two Interchange Alternative (with the SR-125 Connector Variation) discussed below, and it is expected that potential noise impacts would be similar. The distance of Preferred Alternative facilities from existing noise receivers (refer to Figures 2-13d, *Preferred Alternative – Major Project Features Sheet D*, and 3.17-1) would be the same as previously reported and analyzed for the Two Interchange Alternative. Therefore, it is estimated that LOS C traffic noise impacts with the Preferred Alternative would be similar to modeled noise impacts associated with the Two Interchange Alternative; noise levels would approach or exceed the NAC of 72 dBA Leq(h) for the Activity Category C land use, represented by R-19. As noted in the Two Interchange Alternative analysis below, there are no areas of frequent human use in this location that would benefit from a reduced noise level at the Siempre Viva Road Interchange; therefore, no noise barrier analysis for this area is required for the Preferred Alternative.

With respect to the SR-11 project modifications to the SR-905 project area, Preferred Alternative traffic noise impacts would be expected to be similar to those of the Two Interchange Alternative. The analysis presented below for the Two Interchange Alternative concludes that noise abatement should be considered only at receiver R-10 (the outdoor track area at Southwestern College). The NSR found that a noise barrier (NB-1) to reduce potential noise impacts at this location would be feasible to construct, but the NADR (Caltrans 2010f) found that it would not be reasonable from a cost perspective. Therefore, no noise barrier was recommended in the Draft EIR/EIS, and none is proposed for the Preferred Alternative.

Two Interchange Alternative

Traffic noise impacts under the Two Interchange Alternative are predicted to occur at receivers R-2 through R-14, and R-18 and R-19, which represent 17 developed commercial/industrial properties and the Southwestern College outdoor track area. Existing noise levels range from 51 to 62 dBA and future predicted noise levels range from 50 to 79 dBA. Substantial noise increases (12 dBA increase or greater) are predicted at receivers R-2 through R-9, R-11 through R-14, and R-18. Approach/exceed noise impacts are predicted at receivers R-10 and R-19. With the exception of receiver R-10, there are no outdoor areas of frequent human use that would benefit from reduced noise levels at the commercial/industrial receptors that would experience substantial noise increases or that would approach or exceed the NAC. Therefore, noise abatement is only considered at receiver R-10.

Receiver R-10 represents the outdoor track area at Southwestern College. Parking lots and other outdoor areas at the college that are not used for educational activities are not considered to be benefited uses. Indoor uses at receiver R-11 would not experience noise levels approaching or exceeding the Activity Category E NAC of 52 dBA L_{eq}.

A noise barrier (NB-1) 10 feet in height and 591 feet in length was considered along the edge of shoulder since it would meet the minimum five dBA feasibility requirement. While the noise barrier was found to be feasible to construct, the NADR (Caltrans 2010f) found that it would not be reasonable from a cost perspective. Therefore, no noise barrier is recommended.

It is noted that the unusually low noise levels identified immediately adjacent to proposed SR-11 in the Sanyo Avenue area are attributed to the roadway design. SR-11 would be elevated as it passes between the buildings at this location (refer to Figure 2-5, *Cross-Sections of SR-11 in the Sanyo Avenue Area: Two*

Interchange Alternative [with 22-foot Median] and 46-foot Median Variation). The elevation difference and the three-foot high concrete barrier along the outer edge of the roadway would minimize noise at the adjacent buildings. Thus, noise levels immediately adjacent to SR-11 in the Sanyo Avenue area would not approach or exceed the NAC, and no noise barrier analysis is required.

One Interchange Alternative

Similar to the Two Interchange Alternative, only the outdoor track at the Southwestern College (represented by receiver R-10) would experience noise levels exceeding the NAC, and would also benefit from a reduced noise level under the One Interchange Alternative (refer to Table 3.17-3).

Predicted traffic noise levels under the One Interchange Alternative would not approach or exceed the NAC of 72 dBA Leq(h) for Activity Category C land uses represented by receiver number R-19, because the R-19 modeling location was close enough to the proposed Alta Road Interchange under this alternative to experience some shielding from the three-foot high concrete barrier along the outer edge of the roadway (refer to Table 3.17-3 and Figure 3.17-1). However, even if noise levels farther away from proposed SR-11 on this parcel were to approach or exceed the NAC, there are no areas of frequent human use that would benefit from a reduced noise level in the vicinity of receiver number R-19, so no noise control analysis is required.

Therefore, substantial noise impacts under the One Interchange Alternative would only be experienced at the Southwestern College outdoor track at receiver location R-10, and this is the only location considered for noise abatement, as discussed above.

No Interchange Alternative

Predicted noise levels for the No Interchange Alternative would be the same as those for the One Interchange Alternative for all of the identified receiver locations except R-19, where predicted traffic noise levels would approach or exceed the Activity Category C NAC of 72 dBA Leq(h) (refer to Table 3.17-3 and Figure 3.17-1). There are no areas of frequent human use that would benefit from a reduced noise level in the vicinity of receiver number R-19, however, so no noise control analysis is required.

Therefore, as in the case of the Two and One Interchange Alternatives, substantial noise impacts under the No Interchange Alternative would only be experienced at the Southwestern College outdoor track at receiver location R-10, and this is the only location that must be considered for noise abatement.

Variations on the Draft EIR/EIS Build Alternatives

No Toll Variation

As previously noted, the NSR analysis assumes LOS C traffic conditions, which would constitute a worst case scenario for both the toll and no toll versions of the project. Since the analysis would be identical whether or not the project included a toll, the No Toll Variation is not analyzed separately here. Implementation of the No Toll Variation would not alter the conclusions identified for the project build alternatives.

46-foot Median Variation

Under the 46-foot Median Variation of any of the Draft EIR/EIS build alternatives, the outer edge of SR 11 would be closer to adjacent industrial buildings in the Sanyo Avenue area than it would be under the baseline build alternatives that would incorporate a 22-foot median. Modeled noise levels at the receiver locations in the Sanyo Avenue area where the median would be wider (R-15, R-16 and R-17) under the three build alternatives with the 46-foot Median Variation are presented in Table 3.17-4, *Predicted Future Noise Levels in the Sanyo Avenue Area with the 46-foot Median Variation of the Draft EIR/EIS Alternatives*.

Table 3.17-4 PREDICTED FUTURE NOISE LEVELS IN THE SANYO AVENUE AREA WITH THE 46-FOOT MEDIAN VARIATION OF THE DRAFT EIR/EIS ALTERNATIVES							
Receiver Number	Land Use	Activity Category (NAC In dBA)	Existing Noise Levels, $L_{eq(h)}$, dBA ¹	Two Interchange Alternative		One and No Interchange Alternative	
				Noise Level with Project ^{2,3}	Impact Type ⁴	Noise Level with Project ^{2,3}	Impact Type ⁴
R-15	I	C (72)	62	67	None	65	None
R-16	I	C (72)	62	67	None	64	None
R-17	I	C (72)	62	67	None	64	None

¹ Long-term noise level measurement - Maximum hour noise measurement for area type (LT-1: Industrial/Commercial).

² The approved design of SR-905 (currently under construction), would produce a majority of the existing build-out noise. Cumulative noise levels associated with SR-11 improvements would not result in an audible change, as described in the qualitative discussion and reflected in Worksheet A.

³ With project build alternatives, without noise barriers

⁴ None = Does not exceed NAC or result in substantial increase).

I = Industrial

Source: HELIX 2010b

As in the case of the baseline build alternatives, Table 3.17-4 indicates that implementation of the 46-foot Median Variation of any of the Draft EIR/EIS build alternatives would result in predicted traffic noise levels that would not approach or exceed the NAC of 72 dBA $L_{eq(h)}$. The 46-foot Median Variation would not result in noise impacts over and above those resulting from the baseline Draft EIR/EIS build alternatives, and no additional noise abatement analysis would be required.

SR-905/SR-125/SR-11 Interchange Variations

To analyze the worst case scenario for each alternative, the noise modeling included the noise associated with the full SR-905/SR-125/SR-11 Interchange (i.e., all potential future interchange connectors). Scenarios involving fewer connectors (e.g., the SR-125 Connector Variation or the baseline project alternatives that would exclude other connectors [the southbound SR-125 to eastbound SR-11 connector, the westbound SR-11 to eastbound SR-905, and the westbound SR-905 to eastbound SR-11]) would likely result in marginally less noise than is shown in Table 3.17-3. Implementation of scenarios involving fewer connectors would not alter the conclusions identified for the project build alternatives as analyzed with the full SR-905/SR-125/SR-11 Interchange.

Siempre Viva Road Full Interchange Variation

If constructed, the Siempre Viva Road Full Interchange Variation would occupy an additional approximately 20.2 acres, compared to the half interchange at Siempre Viva Road contemplated as part of

the baseline Two Interchange Alternative. The northwestern edge of the full interchange would be approximately 1,500 feet from the nearest receiver (the vehicle auction yard adjacent to Alta Road, represented by receiver number R-19; refer to Figure 3.17-1). This would be approximately 300 feet closer to the receiver than the northwestern edge of the half interchange. It is estimated that LOS C traffic noise levels with the project would be similar to or less than one dBA higher than modeled noise levels associated with the Two Interchange Alternative with the half interchange at this location; noise levels would approach or exceed the NAC of 72 dBA Leq(h) for this Activity Category C land use. As noted for the Two Interchange Alternative, there are no areas of frequent human use that would benefit from a reduced noise level in the eastern project area adjacent to the Siempre Viva Road Interchange; therefore, no noise barrier analysis is required.

No Build Alternative

At receivers R-1 through R-14, the difference between proposed project noise levels and the noise generated by traffic associated with built-out SR-905 would be below audible levels. Therefore, under the No Build Alternative, it is anticipated that future traffic noise levels at analyzed receivers where approved SR-905 is under construction would be similar to noise levels predicted for the proposed project, and higher than existing noise levels.

Under the No Build Alternative, the SR-905 project would proceed with the construction of a local access ramp to Enrico Fermi Drive through the Sanyo Avenue area, near receivers R-15, R-16 and R-17. The design of this SR-905 ramp would likely be similar to the No Interchange Alternative through this area, although traffic volumes would likely be lower on the SR-905 local access ramps than on SR-11. Considering this, future noise levels at R-15 through R-17 under the No Build Alternative would be similar to or lower than noise associated with the proposed project build alternatives, including the Preferred Alternative.

Currently, the area east of Enrico Fermi Drive is largely undeveloped or subject to temporary uses such as truck parking. It is anticipated that if the No Build Alternative were selected for the proposed project, planned development in the area east of Enrico Fermi Drive would proceed, including the construction of County Circulation Element roads. Therefore, it is anticipated that future traffic noise levels under the No Build Alternative would be lower than those predicted for the proposed project in this area (e.g., near receivers R-18 and R-19), but higher than existing noise levels.

Construction Noise

Construction noise is regulated by Caltrans Standard Specifications Section 7-1.01(I), “Sound Control Requirements” (Caltrans 2006d), which states that noise levels generated during construction shall comply with applicable local, state, and federal regulations, and that all equipment shall be fitted with adequate mufflers according to the manufacturers’ specifications.

Table 3.17-5, *Construction Equipment Noise*, summarizes noise levels produced by equipment that is commonly used on roadway construction projects.

**Table 3.17-5
CONSTRUCTION EQUIPMENT NOISE**

Equipment	Maximum Noise Level (dBA at 50 feet)
Scrapers	89
Bulldozers	85
Heavy Trucks	88
Backhoe	80
Pneumatic Tools	85
Concrete Pump	82
Impact Pile Driver	101

Source: Federal Highway Administration Roadway Noise Construction Model Version 1.0, 2006

Construction equipment is expected to generate noise levels ranging from 70 to 90 dB at a distance of 50 feet, and noise produced by construction equipment would be reduced over distance at a rate of about 6 dB per doubling of distance.

3.17.4 Avoidance, Minimization, and/or Mitigation Measures

Operational Noise

In accordance with 23 CFR 772, noise abatement is considered where noise impacts are predicted in areas of frequent human use that would benefit from a lowered noise level. Receiver R-10 represents the outdoor track area at Southwestern College. Measurements taken at receiver R-10 indicate that the existing noise level at that location is 57 dBA. Once SR-905 is built and operational, the noise level at this location is predicted to be 74dBA. The future noise level at receiver R-10 with the project is also predicted to be 74 dBA. Because the predicted future noise level would exceed the NAC for recreational uses (67 dBA), the three frontage units represented by receiver R-10 would be adversely affected by noise.

Noise abatement is considered acoustically feasible if it would achieve a minimum five-dBA reduction at the receptor. Other non-acoustical factors related to sight distance standards, safety, maintenance, and security also could affect feasibility. Noise barriers are considered reasonable if the estimated cost of abatement is equal to or less than the calculated allowance. The project NSR identifies one potential feasible noise barrier in the project area (NB-1). The feasible noise barrier was then further evaluated for cost reasonableness in the NADR.

To achieve the minimum five dBA reduction required by Caltrans guidelines feasibility requirements, a 10-foot noise wall (NB-1) would be needed at receiver R-10. If the total cost of the wall at this location is less than the total cost allowance, then the wall would likely be incorporated into the project. The total cost allowance, calculated in accordance with Caltrans' Traffic Noise Analysis Protocol, is \$105,000. The current estimated cost of the wall is \$289,457, which would exceed the cost allowance. Therefore, construction of noise barrier NB-1 is not recommended, and is not proposed in the Preferred Alternative.

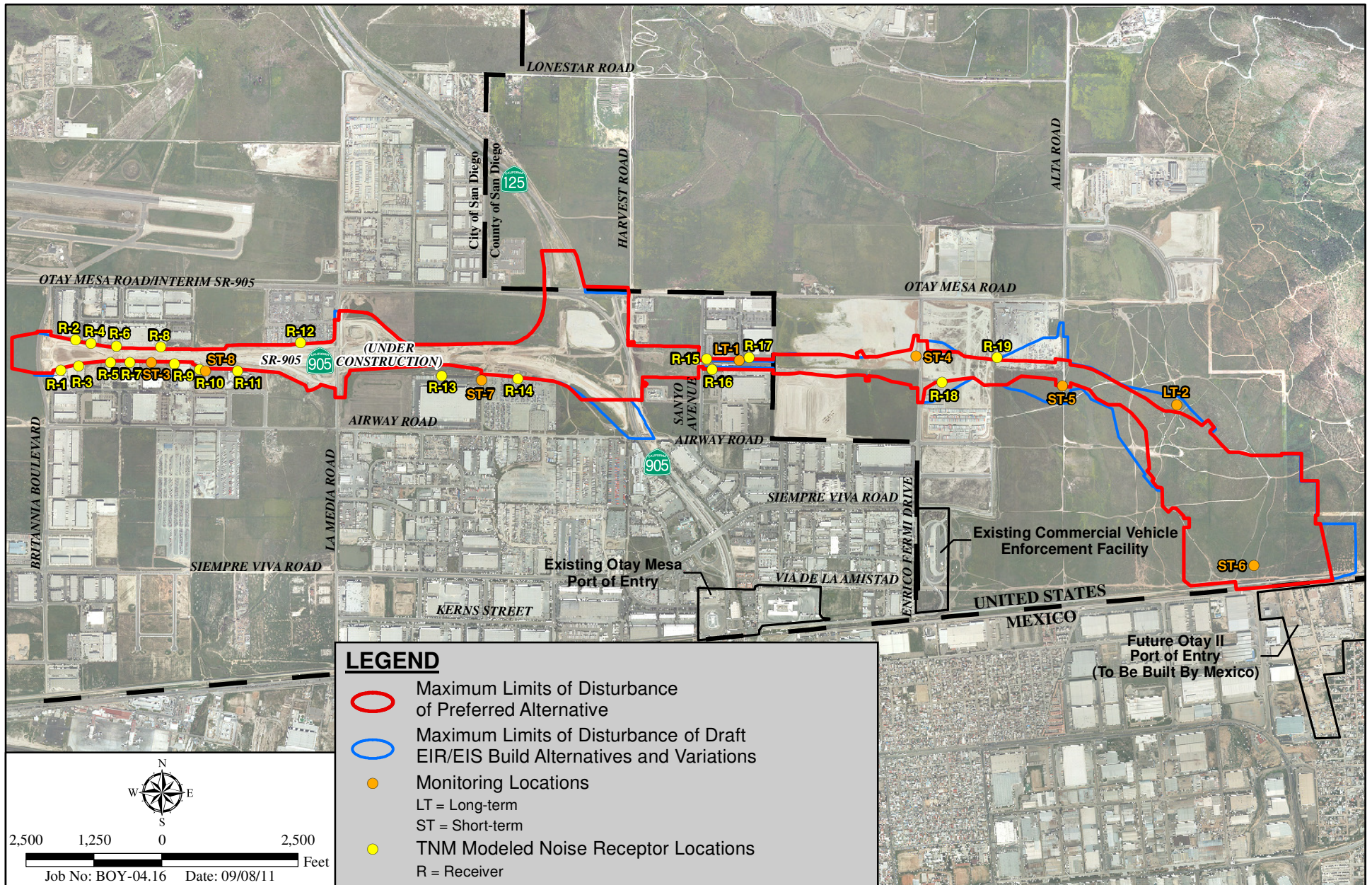
Construction Noise

Because Caltrans Standard Specifications Section 7-1.01(I) (Caltrans 2006d) requires the contractor to comply with the applicable local noise standards, the project NSR notes the following:

- All equipment should have sound-control devices that are no less effective than those provided on the original equipment. No equipment should have an unmuffled exhaust.

- As directed by Caltrans, the contractor should implement appropriate additional noise minimizing measures, such as changing the location of stationary construction equipment, turning off idling equipment, rescheduling construction activity, notifying adjacent residents in advance of construction work, and installing acoustic barriers around stationary construction noise sources.

Required contractor compliance with applicable local noise standards would avoid or minimize temporary adverse noise from construction.



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Noise Receiver and Monitoring Locations

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

Figure 3.17-1

3.18 ENERGY

3.18.1 Regulatory Setting

The CEQA Guidelines, Appendix F, Energy Conservation, state that EIRs are required to include a discussion of the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful and unnecessary consumption of energy.

NEPA (42 USC Part 4332) requires the identification of all potentially significant impacts to the environment, including energy impacts.

3.18.2 Affected Environment

Gasoline Consumption

In 2007¹, motor gasoline accounted for 53 percent of total petroleum use in California; in the same year, transportation uses accounted for 39.8 percent of total energy use in California, with residential uses accounting for 18.1 percent, commercial uses accounting for 19.0 percent and industrial uses accounting for 23.0 percent (U. S. Department of Energy 2007). While state and federal policies, such as the California Low-Emission Vehicle Program and the Federal Energy Policy Act of 1992, are increasing the use of alternative-fuel and low-emission vehicles, the consumption of non-renewable resources, such as fossil-fuels, remains high and points to the need to conserve such energy resources. The need to develop energy efficient projects is also highlighted in the Caltrans Director's Policy on Energy Efficiency, Conservation and Climate Change (Caltrans 2007f), which states:

“Caltrans incorporates energy efficiency, conservation, and climate change measures into transportation planning, project development, design, operations, and maintenance of transportation facilities, fleets, buildings, and equipment to minimize use of fuel supplies and energy sources and reduce GHG² emissions.

The intent of this policy is to implement a comprehensive, long-term departmental energy policy, interagency collaboration, and a coordinated effort in energy and climate policy, planning, and implementation.”

Electricity Consumption

In 2008, California used 285,574 gigawatt hours of electricity, of which 208,519 gigawatt hours (73 percent) were generated in-state (California Energy Commission [CEC] 2009a). In 2008, natural gas accounted for 45.7 percent of total system power, coal 18.2 percent, nuclear 14.5 percent, renewable sources 10.6 percent, and large hydro 11.0 percent (CEC 2009b). California's population is projected to exceed 54 million by the year 2040. Increased populations, economic activity, and a trend of higher growth rates in the central portion of the state than in the coastal areas indicates the growing pressure on California's energy system and the increasing importance of energy efficiency (CEC 2008).

Natural Gas Consumption

In 2008, natural gas accounted for more than 45 percent of California's total system needs (140,215 gigawatt hours). Eighty-five percent of natural gas supplies are imported via pipelines from the

¹ This provides the most recent data available from the U.S. Department of Energy, Energy Information Administration.

² Greenhouse gas.

Southwest, Rocky Mountains and Canada (CEC 2009a). Since 1970, the number of households in California has almost doubled from 6.5 million to 12.5 million, pushing total residential natural gas consumption from about 5,500 million therms in 1970 to about 6,700 million therms in 2007. However, the average annual gas consumption per household has dropped more than 36 percent, from 845 therms to 538 therms. Commercial uses are utilizing approximately 10 percent of the natural gas consumed by the state. Natural gas has become an increasingly important source of energy since more of the state's power plants rely on this fuel (CEC 2007).

3.18.3 Environmental Consequences

Preferred Alternative and Draft EIR/EIS Build Alternatives

The following analysis of potential energy impacts is applicable to the Preferred Alternative and the Draft build alternatives. All of the build alternatives would consume similar types and amounts of energy during and after construction, with the type and nature of associated impacts therefore also the same. While the specific amounts of energy used and saved could vary slightly among the various alternatives, the level of impact and associated requirements to address these potential effects would be the same.

The main sources of energy saved and consumed are vehicle fuels (primarily gasoline and diesel fuels), electricity and natural gas.

Gasoline, Diesel and Other Vehicle Fuels

Throughout construction, local circulation and travel on any portions of SR-905 that have been completed and opened to vehicles would be maintained; however, temporary detours and reduced numbers of available lanes may be required, resulting in some temporary delays. As a result, idling times could increase for vehicles traveling in the area, which may result in additional gasoline consumption. In addition, construction equipment, delivery trucks and employee vehicles traveling to the construction site would consume diesel and gasoline fuels.

After construction, energy would be used by vehicles traveling on SR-11 and SR-905 and for long-term maintenance and operation of these facilities. The proposed facilities would increase the rate of traffic movement across the border and would reduce wait times at the existing and proposed POEs. In addition, the new facilities would reduce congestion on many local roads. The project would be beneficial to energy consumption, as vehicles would spend less time idling and use less fuel. The proposed toll facilities would be designed to maintain vehicle wait times at 30 minutes or less. Employees at the POE, CVEF and toll administration building (estimated at 615 total employees) would use vehicle fuels to travel to these new places of employment. This is a minor component of the overall fuel use associated with the proposed project.

When balancing vehicle fuel consumption during construction and operation against fuel consumption saved by reducing congestion and improving other transportation efficiencies, the build alternatives would not result in adverse energy impacts related to vehicle fuel consumption. While the decreased wait times may provide an incentive for additional trips across the border, the reduction in idling times associated with the maintained or improved LOS discussed in Section 3.8 of this Final EIR/EIS would result in an overall decrease in vehicle fuel consumption that would more than offset the impacts associated with any additional trips. Per modeling completed as part of Caltrans' Climate Action Program (Caltrans 2006e), implementation of the Two and One Interchange Alternatives would be expected to decrease overall energy consumption compared to the No Build Alternative for 2015 and 2035 (refer to the analysis presented in Section 4.7 of this Final EIR/EIS). Energy consumption under the Preferred Alternative would be similar to the Two Interchange Alternative. The No Interchange

Alternative would not provide a reduction in energy consumption. The decreases in energy consumption would be attributed to the efficiency of vehicles moving through the POE, the lack of congestion, and improved travel times along the SR-11 corridor and the local street network. Despite the localized increase in traffic levels along the SR-11 corridor between opening day and the horizon year, regional transportation efficiency would be increased and overall energy use would be reduced.

Electricity and Natural Gas

During the construction period of SR-11 and the POE, CVEF and SR-11/SR-905 connectors with associated improvements to SR-905, energy would be used for the manufacture of the materials that would be used for the construction and interior furnishing of proposed project facilities. This would be a short-term, temporary impact.

Operations of SR-11 would consume electricity for lighting, landscape irrigation (if required) and operation of automated toll facilities. Operations at the POE and CVEF would consume electricity and natural gas for office equipment, heating/cooling, and interior and exterior lighting.

According to the PDS (GSA 2011), GSA identifies sustainability and energy performance as basic tenets of the agency's General Design Philosophy; it is therefore a requirement that the POE achieve the status of LEED Gold. The LEED Gold certification includes achieving a high degree of excellence in site planning, water efficiency, energy efficiency, indoor air quality and material consumption. The PDS also notes that due to the relatively remote location of the POE site, some LEED credits may be unachievable. The final Design Energy Target (DET) goal for the POE will be set by GSA's Office of the Chief Architect, and will be determined in conjunction with the GSA-stated LEED Gold certification objective for the project. In addition, the POE design should comply with the GSA Strategic Sustainability Plan and the Energy Independence and Security Act. Per California Executive Order S-20-04, the CVEF would be designed with the goal of achieving LEED Silver certification.

Electricity and natural gas consumption for SR-11, the POE and the CVEF would not be excessive and would be reduced by implementing a series of standards for environmentally sustainable construction, based on incorporation of the avoidance, minimization and mitigation measures listed below, to the maximum extent feasible. The energy savings requirements of the Energy Independence and Security Act would further result in less consumption of fossil fuels and electricity. The project facilities would be new energy uses in an area where energy use is currently minimal, but as presented below, opportunities exist to minimize the potential energy usage of the POE.

Variations on the Draft EIR/EIS Build Alternatives

Implementation of the SR-905/SR-125/SR-11 Interchange Variation and the 46-foot Median Variation would result in similar energy expenditures and savings to those described above for the Draft EIR/EIS build alternatives.

Implementation of the No Toll Variation would also be expected to result in similar energy consequences to those described for the build alternatives. Border wait time studies indicate that the toll alternatives would improve border wait times and reduce idling time at the new POE more than the No Toll Variation. In view of the "smart technology" to be implemented for the toll system, the toll facilities are expected to operate efficiently to minimize vehicle idling. Energy use from idling at the Otay Mesa East POE would therefore be reduced more by implementing a toll facility than by eliminating the toll facilities. The elimination of tolls from the build alternatives would be expected to result in the diversion of a larger number of trips from the existing Otay Mesa POE to the new POE, thereby resulting in shorter idling times at the existing POEs, while increasing idling times at the new POE, compared to the toll scenario.

Per modeling completed as part of Caltrans' Climate Action Program (December 2006), implementation of the Two and One Interchange Alternatives, with or without a toll, would be expected to increase the vehicle processing capacity at the border, thereby shortening the overall wait time per vehicle compared to the No Build Alternative. The No Interchange Alternative, with or without a toll, would not provide a reduction in energy consumption. Overall, energy use under the No Toll Variation is expected to be improved compared to the No Build Alternative and similar to or slightly decreased from that for the proposed build alternatives with a toll.

No Build Alternative

Under the No Build Alternative, the described development actions for the build alternatives and variations would not occur, and no associated impacts related to energy would occur. The No Build Alternative could contribute to continued long wait times to cross the border, with associated traffic congestion and inefficient energy use by vehicles waiting at the border. These impacts would be expected to increase over time without implementation of the proposed project.

3.18.4 Avoidance, Minimization, and/or Mitigation Measures

Preferred Alternative and Draft EIR/EIS Build Alternatives and Variations

The following measures are included in the PDS and are being considered by GSA, to reduce the electric load and consumption of the POE:

- Orientation of buildings on an east-west axis and facing south, to reduce thermal heat load, if feasible
- Layout of exterior lighting to be spaced appropriately so that lighting zones do not overlap
- Incorporation of daylight sensors to automatically shut off night lighting
- Incorporation of shading overhangs on the southern building façades
- Use of high albedo pavements and roofing for greater heat reflection, to reduce surface temperatures and associated heat island effects during warm periods
- Use of thermal mass in the building design to reduce night-time cooling (e.g., walls constructed of rammed earth, adobe, clay or mud brick, stone, logs, insulated concrete or specially cured concrete), if feasible
- Use of solar panels on the roofs of on-site structures to generate solar energy to power the POE and potentially also contribute energy to the electricity grid, if feasible
- Incorporation of energy-efficient exterior and interior lighting, including LED lighting
- Use of energy-efficient appliances, computers, copiers and other equipment
- Provision of light sensors in occupied spaces (with manual override), to automatically shut off lights when no motion/activity is detected or at certain times of the day
- Incorporation of variable speed and frequency pumping systems with premium efficiency motors and drives
- Use of high performance glazing on windows
- Provision of building automation and building management system (BMS) controls for lighting, heating and cooling space
- Incorporation of eco-feedback devices such as smart meters accessible via local intranet

The following measures recommended by the California Attorney General (California Department of Justice 2008) could be implemented to minimize the effects of energy use by the project. As described above, many of these measures are currently under consideration by GSA for the POE.

Otay Mesa East POE/CVEF

- Design buildings to be energy efficient
- Install efficient lighting control systems. Partition or segment lighting for separate uses within the facility for energy efficiency.
- Site and design buildings to take advantage of daylight
- Use landscaping and sun screens on west and south exterior building walls to reduce energy use, where practical
- Install light-colored “cool” roofs and cool pavements
- Install solar panels on roofs of buildings and inspection bays where feasible
- Use combined heat and power in appropriate applications for building HVAC systems
- Reuse and recycle construction waste (including but not limited to soil, vegetation, lumber, metal and cardboard) where feasible
- Provide interior and exterior storage areas for recyclables and green waste and adequate recycling containers located in public areas
- Continue to work with SANDAG, GSA, and EPA to evaluate the potential for truck stop electrification at the Otay Mesa East POE or at the other POEs in the region, as appropriate, to achieve the greatest possible benefit from this technology
- Use low- or zero-emission construction vehicles
- Provide the necessary facilities and infrastructure to encourage the use of low or zero-emission vehicles by employees, including bicycles
- Design the POE to be transit, pedestrian and bicycle friendly, by maximizing the safety and efficiency of the facilities and processes serving these border crossers
- Incorporate low water use landscaping to save energy associated with water production and delivery

SR-11

- Install solar-powered street lighting
- Reuse and recycle construction and demolition waste (including but not limited to soil, vegetation, concrete, lumber, metal and cardboard) where feasible
-
- Institute a low-carbon fuel vehicle incentive program, such as toll free access to the project facilities
- Incorporate bicycle-friendly intersections at interchange ramps
- Incorporate low water use landscaping
- Develop a construction phasing plan to identify the sequence of construction and help minimize traffic delays
- Control traffic delays to the extent feasible during periods of many simultaneous construction operations
- Implement a comprehensive TMP to further minimize delays during construction. The TMP is designed to increase driver awareness, ease congestion, and minimize delay during construction

No Build Alternative

There is a potential for energy impacts to occur associated with greater traffic congestion under the No Build Alternative. Because no project action would occur under the No Build Alternative, no associated avoidance, minimization or mitigation measures would be required.

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BIOLOGICAL ENVIRONMENT

3.19 NATURAL COMMUNITIES

This section of the document discusses natural communities of concern. The focus of this section is on biological communities, not individual plant or animal species. This section also includes information on wildlife corridors and habitat fragmentation. Wildlife corridors are areas of habitat used by wildlife for seasonal or daily migration. Habitat fragmentation involves the potential for dividing sensitive habitat and thereby lessening its biological value.

Habitat areas that have been designated as critical habitat under FESA are discussed below in Section 3.23, *Threatened and Endangered Species*. Wetlands and other waters are also discussed below in Section 3.20, *Wetlands and Other Waters*.

A natural community is a distinct, identifiable, and recurring association of plants and animals that are ecologically related (California Fish and Game Code subsection 2702[d]). Three natural community types occur in the Biological Study Area (BSA): wetland, shrubland, and grassland.

Generally, wetlands are lands where saturation with water is the dominant factor determining the nature of soil development and the types of plant and animal communities living in the soil and on its surface (Cowardin 1979). Examples of wetlands in the BSA include mule fat scrub-disturbed, freshwater marsh, and disturbed wetland.

Shrubland is a natural community dominated by woody shrubs. A shrub is a perennial, woody plant that branches at ground level to form several stems. Shrublands form in several different biomes, and may be either a permanent habitat type that is stable over time, or a transitional one, caused when another habitat type is disturbed by natural or human causes, such as fire. Diegan coastal sage scrub is the shrubland found in the BSA.

Grassland is land where grass or grass-like vegetation grows and is the dominant form of plant life. Grassland in the BSA consists primarily of non-native vegetation.

3.19.1 Regulatory Setting

The proposed project is subject to a number of federal and state regulatory requirements related to the biological environment, as described below and in subsequent sections.

National Environmental Policy Act

NEPA directs “a systematic, interdisciplinary approach” to planning and decision-making and requires environmental statements for “major federal actions significantly affecting the quality of the human environment.” Implementing regulations by the CEQ (40 CFR Parts 1500-1508) require federal agencies to identify and assess reasonable alternatives to proposed actions that will restore and enhance the quality of the human environment and avoid or minimize adverse environmental impacts. NEPA issues relevant to natural communities may include potential impacts to natural communities of concern, wildlife corridors, habitat fragmentation, and regional conservation plans, such as Habitat Conservation Plans (HCPs) or MSCPs.

Title 23 United States Code Section 109 – Standards

The goal of 23 USC 109(h) is to “...assure that possible adverse economic, social, and environmental effects relating to any proposed project on any federal-aid system have been fully considered in developing such project, and that the final decisions on the project are made in the best overall public interest, taking into consideration the need for fast, safe and efficient transportation, public services, and the costs of eliminating or minimizing such adverse effects.” Among the potential adverse effects to be considered is the “destruction or disruption of... natural resources,” which could include natural communities.

California Environmental Quality Act Guidelines

CEQA identifies the following potential CEQA issues relevant to natural communities: substantial adverse effects on sensitive natural communities, substantial interference with the movement of any resident or migratory fish or wildlife species, and conflict with local policies or ordinances or with the provisions of an adopted HCP.

Multiple Species Conservation Program

The NCCP initiated by the State of California in 1991 resulted in the promulgation of the special 4(d) rule of the FESA. This rule focuses on conserving coastal sage scrub habitat to avoid the need for future federal and state listing of each individual coastal sage scrub-dependent species. To meet the requirements of the NCCP, the City, County, USFWS, CDFG, and other local jurisdictions joined together in the late 1990s to develop the MSCP, a program to ensure the viability of covered habitat (generally upland) and species throughout the region, while still permitting some level of continued development. The County of San Diego Subarea Plan (County 1997) was created to avoid or reduce adverse effects to regionally sensitive biological resources through efforts such as avoiding or minimizing development in coastal sage scrub habitat, as well as mitigating impacts by habitat revegetation, creation, and/or preservation. The Subarea Plan regulates effects on natural communities throughout the region, including those on East Otay Mesa. Although the proposed project is located within the South County Segment of the Subarea Plan, Caltrans is not an enrolled entity in the MSCP. While Caltrans strives to be consistent with the MSCP, it is not required to comply with the Subarea Plan. Rather, because the proposed project has a federal nexus, it would be subject to permitting under Section 7 of the FESA.

Each segment of the Subarea Plan has been mapped according to the sensitivity of its biological resources, with named designations identified to reflect each mapped area’s relative level of constraint for proposed development in the County. Although the proposed project is not subject to these processes (because Caltrans is not an enrolled entity in MSCP, and the proposed project does not require County approval) the designations reflect the relative sensitivity of the biological resources in each mapped area (Figure 3.19-1, *MSCP Designations and Proposed Mitigation Sites*). The BSA for the proposed project contains three such designations: Take Authorized, Minor Amendment Area, and Minor Amendment Area Subject to Special Considerations.

Take Authorized area in the BSA includes Enrico Fermi Drive that occurs within the SR-905 approved Final Environmental Impact Statement/Final Environmental Impact Report (FEIS/FEIR) limits of disturbance for which impacts have already been permitted. The BSA also occurs in a Minor Amendment Area as identified in the Subarea Plan. According to the Subarea Plan, minor amendment properties contain habitat that could be partially or completely eliminated (with appropriate mitigation) without significantly affecting the overall goals of the Subarea Plan.

Additionally, Minor Amendment Areas Subject to Special Considerations occur in the southeastern portion of the BSA. These areas are subject to requirements of the County’s EOMSP (County 2002). The EOMSP states that prior to any development including clearing or grading, a Resource Conservation

Plan (RCP) shall be approved by the County for parcels with a “G” Designator (i.e., MSCP Minor Amendment Areas Subject to Special Consideration; County 2002). Caltrans would not be required to produce an RCP because it is not subject to the MSCP. However, this description of the proposed project’s context within the MSCP has been included because Caltrans strives to be consistent with the MSCP.

Cross-Border Biological Impacts

Regarding cross-border biological impacts and mitigation, it should be noted that Caltrans is one of the forty agency members on The California Biodiversity Council and is on the Biodiversity Along the Border subcommittee that focuses on implementing conservation along the border. The uncertainties regarding the legal ability to conserve land in perpetuity in Mexico are being addressed in this forum and would need to be resolved prior to any commitment on cross border mitigation. At this time, biological impacts of the SR-11/Otay Mesa East POE project and identified mitigation sites focus strictly on the U.S. side of the border. It is anticipated that the Mexican government will assess and mitigate impacts of the border projects in Mexico.

3.19.2 Affected Environment

An NES was completed for the proposed project addressing natural communities present in the BSA (HELIX 2010d, Section 4.1; Figures 3.19-2a and 3.19-2b, *Vegetation/Impacts Map*). Subsequent to identification of the Preferred Alternative, an NES Addendum (HELIX 2011) was prepared to document specific impacts of the Preferred Alternative, all of which are encompassed within the BSA addressed in the NES for the Draft EIR/EIS. Natural communities in the BSA were originally surveyed and mapped in 2000, 2004, and 2005, and the mapping was updated in 2006 and 2008. Mapping within the SR-905 approved FEIS/FEIR limits of disturbance is not shown on Figure 3.19-2a because this area is developed or developing, and/or the impacts have already been permitted by the resource agencies.

This section addresses natural communities that are of concern because they are: (1) considered rare within the region or sensitive by CDFG (Holland 1986) and/or (2) support special status plants or animals protected under the federal and/or state Endangered Species Acts (ESAs). Other communities, such as disturbed habitat, are not addressed because they are not natural communities of concern, and compensation is not proposed for impacts to them. This section also addresses wildlife corridors and habitat fragmentation because natural communities provide connections between habitat areas and linkages between large blocks of habitat; they occur within wildlife corridors; and they supply the resources (e.g., food and shelter) that wildlife need to survive and successfully reproduce.

Natural Communities of Concern

Twelve natural communities of concern occur within the BSA: vernal pool, basin with fairy shrimp, freshwater marsh, mule fat scrub-disturbed, disturbed wetland, Diegan coastal sage scrub, Diegan coastal sage scrub-disturbed, coastal sage scrub restoration, native grassland, non-native grassland, non-native grassland-disturbed, and grassland restoration (Figures 3.19-2a and 3.19-2b). Some of these communities occur within critical habitat for federally listed species; critical habitat is described in Section 3.23 of this Final EIR/EIS. Freshwater marsh, mule fat scrub-disturbed, and disturbed wetland are under the jurisdiction of the USACE and/or CDFG; these communities are described in Section 3.20.

Vernal Pools

Vernal pools are temporary wetland habitats formed under specific edaphic, topographic, and climatic conditions. The edaphic conditions include a subsurface hardpan, or claypan, characterized by very slow

permeability that inhibits the downward percolation of water. The landscape conditions usually consist of relatively level areas (e.g., mesas) with low hummocks (mima mounds) and shallow basins (vernal pools). The climate consists of cool, wet winters and hot, dry summers. Under these conditions, water ponds in the depressions during the rainy season gradually evaporate over time, and are completely dry over the summer and fall. Vernal pools are also identified by having at least one indicator plant species (USACE 1997, Zedler 1987). Road pools also occur in dirt roads and other disturbed places that have the seasonal hydrology of vernal pools. These road pools often exist in historic vernal pool areas. They may, however, also occur in non-historic locations due to soil compaction, removal of native vegetation, etc.

Bauder (1987) claimed that historical estimates of vernal pool habitat in the County consisted of 28,595 acres and that more than 97 percent of vernal pool habitat has been lost to urbanization and agricultural conversion since 1986. Remaining vernal pool habitat is mostly isolated, degraded, and/or fragmented. One vernal pool occurs in the eastern portion of the BSA (Figure 3.19-2b).

Basins with Fairy Shrimp

Although basins by themselves are not resources of concern, two basins in the eastern portion of the BSA support federally listed endangered San Diego or Riverside fairy shrimp. As a result, these two basins are mapped as a distinct natural community of concern (Figure 3.19-2b).

Diegan Coastal Sage Scrub (including disturbed)

Coastal sage scrub is one of the two major shrub types that occur in California. This habitat type occupies xeric sites characterized by shallow soils. Sage scrub is dominated by low subshrubs, many of which are drought-deciduous, an adaptation that allows them to withstand prolonged summer and fall drought periods (Holland 1986). Sage scrub species have relatively shallow root systems and open canopies, which allow for a substantial, seasonal, herbaceous plant component. Diegan coastal sage scrub in the BSA contains plant species such as California sagebrush (*Artemisia californica*), San Diego County viguiera (*Viguiera laciniata*), and California buckwheat (*Eriogonum fasciculatum*). The disturbed phase of this vegetation community has a lower cover of shrubs; the shrub cover has been replaced with non-native grassland species.

Coastal sage scrub supports a number of state and federally listed endangered, threatened, and rare vascular plants, as well as several bird and reptile species that are federally listed or are candidate species for federal listing. This habitat has long been under development pressure, originally from agriculture and in more recent decades from urbanization and human population growth. At the time the NCCP was instituted (1991), the USFWS estimated that about 343,000 to 444,000 acres of coastal sage scrub remained in California, representing about 14 to 18 percent of its historic extent (Pollak 2001). A more recent source, the California Wildlife Action Plan prepared for CDFG, also notes that as of the early 1990s, about 400,000 acres of coastal scrub remained, representing no more than 18 percent of its historic extent (CDFG 2007). According to Oberbauer (1991), the historical reduction of sage scrub in the County is approximately 72 percent. The primary mechanism for the loss of sage scrub within California has been grazing and, more recently, urbanization. Diegan coastal sage scrub (including disturbed) occurs on gentle slopes in the eastern-most portion of the BSA (Figure 3.19-2b).

Coastal Sage Scrub Restoration

One area in the eastern portion of the BSA is in the process of being restored to coastal sage scrub following installation of a natural gas pipeline (Figure 3.19-2b). The restoration includes a combination of container stock and hydroseeding. There is currently low cover of sage scrub species in this area.

Coastal sage scrub restoration is a natural community of concern for the same reasons as Diegan coastal sage scrub.

Native Grassland

Native grassland is a community dominated by species such as purple needlegrass (*Nassella pulchra*) or coastal saltgrass (*Distichlis spicata*). The majority of native grasslands in California have been displaced by non-native grassland dominated by introduced, annual species; however, native grasslands persist as small, isolated islands. Native grasslands are one of the most heavily impacted plant communities in California. The conversion from native to non-native grassland occurred so rapidly after European colonization that there is debate among ecologists as to the original species composition and physiognomy of this community when it was in a pristine condition. Native grassland occurs in two small areas adjacent to a drainage in the east-central portion of the BSA (Figure 3.19-2b). These patches are dominated by coastal saltgrass intermingled with non-native grasses and forbs such as oats (*Avena* sp.) and mustard (*Brassica* sp.).

Non-native Grassland (including disturbed)

Non-native grassland is a dense to sparse cover of annual grasses often associated with numerous species of showy-flowered, native, annual forbs. This association occurs on gradual slopes with deep, fine-textured, usually clay soils. This vegetation community covers the majority of the eastern portion of the BSA and small areas of the western portion of the BSA (Figures 3.19-2a and 3.19-2b). Typical species present include oats, red brome (*Bromus madritensis* ssp. *rubens*), ripgut grass (*Bromus diandrus*), filaree (*Erodium* spp.), Italian ryegrass (*Lolium multiflorum*), and mustard. Non-native grassland is the dominant vegetation community within the BSA. The disturbed phase of this community (Figure 3.19-2a) supports a substantial cover of non-native forbs, such as mustard. Non-native grassland (including disturbed) provides important foraging and/or nesting habitat for many special status birds of prey such as the burrowing owl (*Athene cunicularia*), white-tailed kite (*Elanus leucurus*), and northern harrier (*Circus cyaneus*).

Grassland Restoration

Two areas in the eastern part of the BSA are in the process of being restored to grassland following installation of a natural gas pipeline (Figure 3.19-2b). The areas support a dense cover of broad-leaved, exotic forbs that have been killed with herbicide. This strip of weeds passes through non-native grassland and is marked by signs that identify it as a restoration area. This community is a natural community of concern for the same reasons as non-native grassland (including disturbed).

Wildlife Corridors and Habitat Fragmentation

Wildlife Corridors

Wildlife corridors are areas of habitat used by wildlife for seasonal or daily migration. They represent areas where wildlife movement is concentrated due to natural or artificial constraints. Local corridors provide access to resources such as food, water, and shelter. Animals can use these corridors to travel between different habitats (i.e., riparian and upland habitats), which they may use at different points throughout their life histories. Regional corridors, on the other hand, link two or more large blocks of habitat, providing avenues for movement, dispersal, migration, as well as contact between otherwise distinct populations, including populations of large mammals such as mountain lion (*Felis concolor*), southern mule deer (*Odocoileus hemionus fuliginata*), bobcat (*Lynx rufus*), and coyote (*Canis latrans*).

The eastern portion of the BSA is a local corridor in that it provides access to resources for animals in the BSA, and it may provide access to resources for mammals that may enter the BSA, particularly from the east (Figure 3.19-3, *Wildlife Corridors*). The BSA does not connect large blocks of habitat, rather it is on the western edge of a large block of habitat. Therefore, it is not a regional corridor. The central and western portions of the BSA are disturbed and developed (or developing) and do not provide important resources for wildlife, so they are not considered part of a corridor.

Vegetation in the eastern portion of the BSA is limited almost exclusively to non-native grassland on relatively flat topography that may not provide adequate cover for mammals such as southern mule deer and mountain lion (Figure 3.19-2b). The land east of the BSA supports sage scrub vegetation that provides greater vegetative cover, and it has greater topographic variation (i.e., canyons and hills) than the BSA (Figure 3.19-3). Sign of mountain lion and mule deer has not been observed in the BSA during multiple years of surveys for the proposed project, but the southern mule deer is known to occur in the Bureau of Land Management Otay Mountain Wilderness Area east of the BSA (Mock 2002; Figure 3.19-4, *Conserved Land*). Coyote, a much more ubiquitous species, has been directly observed on numerous occasions in the eastern portion of the BSA during surveys for the proposed project. The eastern portion of the BSA is subject to daily and frequent border patrol and military training activities, illegal off-road vehicle activity, and various surveying/maintenance activities by contractors and utility personnel (e.g., border fence repair contractors and SDG&E and OWD personnel). All of these activities, along with the lack of adequate vegetative cover render the eastern portion of the BSA of low quality as a local corridor. It is more likely that most local wildlife movement remains and would remain east of the BSA.

In the vicinity of the BSA, Johnson Canyon is a local corridor because it essentially ends near Alta Road where the road and several developments interrupt its connection between the Otay River Valley to the west and the San Ysidro Mountains to the east (Figure 3.19-3). Therefore, it does not connect large blocks of habitat. Johnson Canyon is a tributary drainage to the Otay River, and mammals can travel up and down Johnson Canyon from the Otay River Valley. Johnson Canyon supports grassland, coastal sage scrub, and riparian scrub vegetation that may provide suitable cover for large mammals and provide access to resources such as food, water, and shelter.

Alternatively, O'Neal Canyon, east of Johnson Canyon, is a regional corridor in that it provides a direct connection between two large blocks of habitat: the San Ysidro Mountains and the Otay River Valley (Figure 3.19-3). O'Neal Canyon supports coastal sage scrub, chaparral, and riparian scrub vegetation that may provide suitable cover for large mammals. Alta Road crosses O'Neal Canyon over a large fill, and this may be an impediment to wildlife movement through the canyon. While there is a large concrete box culvert present to allow water to travel down the canyon under Alta Road (and presumably for mammals to move through the culvert as well), this culvert appears to be very long (perhaps up to 500 feet long), and mammals may not choose to travel through it. It is possible that they could travel up the fill slope and cross over Alta Road instead. The Otay River Valley is also a regional corridor because it connects conserved blocks of habitat around Lower Otay Reservoir in Otay Valley Regional Park with conserved habitats to the west throughout the Otay River Valley (Figures 3.19-3 and 3.19-4), eventually connecting with south San Diego Bay. The Otay River Valley supports a variety of vegetation types including, but not limited to, grassland, riparian, wetland, sage scrub, and chaparral communities.

Habitat Fragmentation

Habitat fragmentation involves dividing sensitive habitat, potentially severing connectivity between sensitive habitats, or potentially severing linkages between large blocks of habitats (e.g., conserved lands), thereby lessening their biological value.

A review of California Essential Habitat Connectivity Data (CDFG 2010) shows that there are no Interstate Connections, Essential Connectivity Areas, or Natural Landscape Blocks within the BSA.

The eastern portion of the BSA consists primarily of non-native grassland and patches of Diegan coastal sage scrub, which are sensitive habitats (i.e., natural communities of concern; Figure 3.19-2b). The central and western portions of the BSA consist primarily of disturbed habitat and developed land, which are not natural communities of concern (Figure 3.19-2a). The central and western portions of the BSA are largely surrounded by other land that is disturbed and developed and not natural communities of concern (Figures 3.19-2a and 3.19-2b).

The eastern portion of the BSA is directly connected to large blocks of conserved lands to the east. Those conserved lands continue north and west but with no direct connection to the BSA (Figure 3.19-4). Conserved lands include MSCP BRCAs, MSCP Subarea preserves (i.e., County Preserve, City of Chula Vista Preserve, and City of San Diego MHPA), and/or Bureau of Land Management Wilderness. Since there are no habitat linkages identified by the County, City, or City of Chula Vista MSCP Subarea Plans within or near the BSA (Figure 3.19-4), the proposed project would not sever any linkages between these conserved lands.

The conserved lands east of the BSA include the San Ysidro Mountains, Otay Mountain, and even farther east, Marron Valley. While the BSA presently provides a connection to these conserved lands with habitat to the south and west of the BSA, the area south and west of the BSA is planned for mixed industrial uses under the EOMSP, and projects are already proposed in this area (refer to Section 3.1). Furthermore, the County circulation element includes the extensions of Siempre Viva Road and Airway Road through this area as major roads (County 2010). This area south and west of the BSA currently supports approximately 227 acres of non-native grassland that support the burrowing owl and numerous other non-listed, special status plant and animal species. This area also supports 15 road or vernal pools with federally listed endangered San Diego and/or Riverside fairy shrimp.

Immediately north of the BSA lies Otay Mesa Road and then land that is undeveloped, but disturbed, and appears to have been historically farmed. It presently supports non-native, weedy vegetation or is cleared of vegetation. Some development also occurs to the north along Alta Road including, but not limited to, several detention facilities and a state prison. These developed or disturbed areas and Otay Mesa Road separate the BSA from the conserved lands to the north (Figure 3.19-4), so the proposed project would not affect connectivity between the BSA and those conserved lands since connectivity has already been lost.

The conserved lands that continue to the northwest of the BSA include Otay Valley Regional Park and the Otay River Valley (and its tributaries Johnson Canyon and O'Neal Canyon). Continuing south from the Otay River Valley, west of the BSA, conserved lands continue west and then south to the U.S. - Mexico international border and include areas such as Dennery Canyon, Moody Canyon, and Spring Canyon (Figure 3.19-4). Again, developed or disturbed areas and Otay Mesa Road separate the BSA from these conserved lands, so the proposed project would not affect connectivity between the BSA and those conserved lands.

There is virtually no habitat connectivity from the BSA south to the U.S. - Mexico border, except along Alta Road (south and west of the BSA) where non-native grassland still occurs. This grassland habitat ends at the U.S. - Mexico international border fence. There is no habitat remaining in Mexico south of the BSA; it has all been developed, and the presence of the U.S. - Mexico international border fence precludes habitat connectivity between the U.S. and Mexico for most species (Figures 3.19-2b, and 3.19-4).

3.19.3 Environmental Consequences

Preferred Alternative and Draft EIR/EIS Build Alternatives and Variations

The following analysis of potential impacts to natural communities of concern, as well as wildlife corridors and habitat fragmentation, addresses the Preferred Alternative and the Draft EIR/EIS build alternatives with or without the associated variations.

Direct Impacts

Natural Communities of Concern

Direct, permanent impacts to natural communities of concern would result from removal of the natural communities during construction and their replacement with paved roadways, cut and fill slopes, drainage features, retaining walls, and all POE/CVEF facilities. Temporary and permanent easements are proposed outside of the proposed project R/W. These easements would be necessary for the relocation of a natural gas pipeline along the northeastern boundary of the proposed POE/CVEF, as well as for modifying and maintaining a portion of an existing drainage along the western boundary of the Siempre Viva Interchange to minimize the potential for scour and associated erosion following project implementation. Impacts associated with these easements would be considered permanent (Figures 3.19-2a and 3.19-2b). Table 3.19-1, *Impact Summary for Natural Communities*, presents the direct permanent impacts to natural communities of concern for the Preferred Alternative and each of the Draft EIR/EIS build alternatives. The build alternatives would each impact 0.42 acre of disturbed mulefat scrub, 0.2 acre of native grassland, and 3.2 acres of grassland restoration. Impacts to non-native grassland would vary between 171.9 acres (Preferred Alternative) and 184.4 acres (One Interchange Alternative), depending on the alternative. Impacts would also occur to tamarisk scrub, non-native vegetation, disturbed habitat, and developed areas under each of the alternatives (Table 3.19-1), but these communities are either not natural or are not of concern.

Table 3.19-1 IMPACT SUMMARY FOR NATURAL COMMUNITIES				
Community	Impacted Acreage by Alternative (Acres) ¹			
	Preferred	Two Interchange ²	One Interchange	No Interchange
Natural Communities of Concern				
Vernal Pool	0.00	0.00	0.00	0.00
Vernal Pool Watershed	0.00	0.00	0.00	0.00
Basin with Fairy Shrimp	0.00	0.00	0.00	0.00
Freshwater Marsh	0.00	0.00	0.00	0.00
Mule Fat Scrub – Disturbed	0.42	0.42	0.42	0.42
Disturbed Wetland	0.00	0.00	0.00	0.00

Table 3.19-1 (cont.) IMPACT SUMMARY FOR NATURAL COMMUNITIES				
Community	Impacted Acreage by Alternative (Acres)¹			
	Preferred	Two Interchange²	One Interchange	No Interchange
Natural Communities of Concern (cont.)				
Diegan Coastal Sage Scrub (Including Disturbed and Restoration)	0.00	0.00	0.00	0.00
Native Grassland	0.2	0.2	0.2	0.2
Non-native Grassland	171.9	179.8	184.4	173.7
Non-native Grassland – Disturbed	0.00	0.00	0.00	0.00
Grassland Restoration	3.2	3.2	3.2	3.2
Total of Communities of Concern	175.72	183.62	188.22	177.52
Other Communities				
Tamarisk Scrub	0.08	0.08	0.08	0.08
Non-native Vegetation	0.2	0.2	0.3	0.2
Disturbed Habitat	28.6	31.3	28.5	26.3
Developed	8.0	12.2	13.2	5.2
Total of Other Communities	36.88	43.78	42.08	31.78
Total Acreage	212.6	227.4	230.3	209.3

Note: Impacts do not include those within the SR-905 approved FEIS/FEIR limits of disturbance.

¹ Upland habitats are rounded to the nearest 0.1 acre; wetland habitats are rounded to the nearest 0.01 acre. Total acreage includes 0.91 acre of impacts associated with easements outside of the proposed project R/W (described above), which are considered permanent impacts. Therefore, all project impacts would be permanent. Freshwater marsh, mule fat scrub-disturbed, and disturbed wetland are discussed in Section 3.20.

² An additional 19.6 acres of non-native grassland would be impacted under the Siempre Viva Road Full Interchange Variation of this alternative.

Source: HELIX 2010d

The direct impacts to natural communities would be unchanged under each of the Draft EIR/EIS build alternative variations, with the exception of the Siempre Viva Road Full Interchange Variation of the Two Interchange Alternative. Under this variation, an additional 19.6 acres of non-native grassland would be impacted. The impact areas associated with the remaining variations would all occur within developed areas or within the approved/developing SR-905 R/W, such that no additional impacts to natural communities would result. This includes the proposed 46-foot Median Variation, which would impact additional developed land east of Sanyo Avenue, and the proposed SR-905/SR-125/SR-11 Interchange variations would impact more of the existing highway R/W, which does not contain natural communities or natural communities of concern.

Because natural communities of concern are: (1) considered rare within the region or sensitive by CDFG (Holland 1986) and/or (2) support special status plants or animals protected under the federal and/or state ESAs, impacts to them must be avoided, minimized, and/or mitigated. Avoidance and minimization efforts and/or mitigation for impacts to natural communities of concern are described in Section 3.19.4.

Wildlife Corridors and Habitat Fragmentation

The BSA does not occur within a corridor for regional wildlife movement; and the eastern portion of the BSA only provides for local movement of mammals for access to resources such as food, water, and minimal shelter. Furthermore, such movement is limited due to the lack of good vegetative cover, the impediment of the U.S. - Mexico international border fencing, and the high level of border patrol, military, off-highway vehicle, and other human activity (e.g., utility or other contractor activity) that occurs around the clock. While the proposed project may affect local wildlife movement in the eastern portion of the BSA, the impact is expected to be minimal, and most local wildlife movement is expected to remain east of the BSA on land that provides greater vegetative cover and has greater topographic variation (i.e., canyons and hills).

Some wildlife may use the BSA and areas to the south and west of the BSA for foraging in spite of the lack of connectivity. Certain sensitive species are known to be present in this area, including burrowing owl and San Diego and Riverside fairy shrimp. While the proposed project would break up the connection between the area south and west of the BSA and habitat to the east of the BSA, this would be a temporary, short-term impact until the active industrial development proposals in that area are implemented (assuming SR-11 and the Otay Mesa East POE are constructed first). In addition, wildlife approaching the project from the east would generally be restricted from entering the R/W due to the six-foot high chain link fencing that would be installed at the edge of the R/W as part of the proposed project. Wildlife would likely turn back toward the east in this situation.

Due to the absence of habitat south of the U.S. - Mexico border as well as the presence of the border fence, virtually no habitat connectivity exists to the south of the BSA and impacts would not be anticipated.

On balance, project impacts to wildlife corridors and habitat fragmentation would not be substantial.

Indirect Impacts

The proposed western edge of the POE was shifted to the east to avoid direct and indirect impacts to the vernal pool and its watershed that are located within the BSA; therefore, no indirect impacts would occur to this habitat. As shown on Figure 3.19-4, a privately owned preserve parcel abuts SR-905 southeast of the interchange at La Media Road. In addition, sensitive habitats abut much of the proposed SR-11, POE, and CVEF R/W. There is the potential for indirect impacts to these natural communities during project construction due to encroachment by construction personnel and their pets; placement of construction equipment, materials or debris; and siltation/runoff of contaminants from the construction site.

It should be noted that most of the remaining land immediately surrounding the proposed project is developed or planned for development with industrial uses, with no areas currently designated for open space (Figure 3.1-2, *Characteristics of Proposed Public Works Projects in the Cumulative Study Area*). A number of proposed developments surround the project (Table 3.1-1, *Characteristics of Proposed Land Development Projects in the Cumulative Study Area*, and Figure 3.27-2, *Anticipated Cumulative Development within the Project Vicinity*), including the Otay Business Park to the west of the POE that would remove the subject vernal pool.

Impacts Within Proposed Off-site Mitigation Areas

Temporary impacts would occur to the existing habitats within both the Lonestar and Johnson Canyon mitigation sites, due to enhancement activities on portions of these sites to provide improved Diegan coastal sage scrub, vernal pool and wetland habitats, as well as the creation of owl burrows. This short-term, temporary disturbance is not expected to adversely affect sensitive habitats over the long-term as it will enhance such habitats and promote the establishment of sensitive plant and animal species, increasing species diversity and improving the quality of the habitat. Temporary impacts to natural communities of concern are therefore not expected to be substantial.

No Build Alternative

Under the No Build Alternative, the described development actions for the build alternatives and variations would not occur, and no associated impacts to natural communities would result.

3.19.4 Avoidance, Minimization, and/or Mitigation Measures

This section describes efforts that have been made to avoid or minimize impacts to natural communities of concern. Where impacts could not be avoided or minimized, this section describes the mitigation proposed to compensate for those impacts.

Preferred Alternative and Draft EIR/EIS Build Alternatives and Variations

Avoidance and Minimization Efforts

The SR-11 and Otay Mesa East POE Final PEIR/PEIS (Caltrans 2008a) evaluated two alternative project locations: the Western Alternative and Central Alternative. An Eastern Alternative was also considered but was withdrawn before preparation of the Draft PEIR/PEIS because it would have had much greater impacts to biological resources than either the Western or Central alternatives. Based on the results of the analysis in the Final PEIR/PEIS, the FHWA selected the Western Alternative as the preferred location for SR-11 and the Otay Mesa East POE as stated in its ROD (FHWA 2008). The FHWA determined, with support of the resource agencies, that the Western Alternative would require fewer acres of new R/W and would impact fewer biological resources than the Central Alternative. Thus, the selection of the Western Alternative resulted in the avoidance of and minimization of biological resources impacts.

For the Tier II build alternatives, including the Preferred Alternative, the design of the project elements has been substantially refined to accommodate required traffic movements for the interchanges, drainage facilities and grading. During this design process, every effort was made to minimize impacts to sensitive biological resources. The irregular shape of the Draft EIR/EIS version of the POE was a result of these considerations, as it was designed to avoid/minimize impacts to Diegan coastal sage scrub and Waters of the U.S. to the northeast and the vernal pool to the west. In response to USFWS and other resources agencies' comments on the Draft EIR/EIS, and based on the POE design that was developed in the PDS, the Preferred Alternative incorporates a modified eastern POE boundary that is shifted to the west to further minimize impacts to non-native grassland and the associated sensitive species. No additional avoidance or minimization efforts were determined feasible for the remaining communities of concern within the Preferred Alternative boundaries, that are considered herein (i.e., native grassland, non-native grassland, non-native grassland-disturbed, and grassland restoration; vernal pool is discussed separately below). The project limits have been reduced as much as is feasible and non-native grassland is present in much of the area surrounding the project, such that any potential alternative locations would also impact this habitat.

Selection of the Western Alternative in Phase I avoided or minimized impacts to wildlife movement that is expected to occur on land east of the BSA. Selection of this alternative also avoided impacts to conserved lands east of the BSA. The proposed project's effect on local wildlife movement is expected to be minimal; most local wildlife movement is expected to remain east of the BSA; and there is virtually no habitat connectivity from the BSA south to the U.S. - Mexico border (and no connectivity to Mexico). Therefore, no mitigation measures are proposed for wildlife corridors or habitat fragmentation.

The proposed western edge of the POE was shifted to the east to avoid direct impacts to the vernal pool and its watershed in the BSA. Indirect impacts could occur during project construction, however, to the privately owned preserve land south of SR-905 at La Media Road, and to other sensitive natural communities that abut the existing and proposed R/W associated with the proposed project. To address potential indirect impacts during construction, the project grading/construction limits shall be clearly delineated with orange construction fencing and silt fencing or fiber rolls to ensure that construction activity remains within the defined limits of work. Pets shall be prohibited at the construction site. A qualified biologist shall attend a pre-construction meeting and inspect the delineated areas prior to the initiation of vegetation clearing/grading, during clearing and grubbing of habitat that occurs within 200 feet of the grading limits, and during regularly scheduled construction monitoring visits. The monitoring biologist would periodically monitor adjacent habitats for excessive amounts of dust and recommend remedial measures to address dust control if necessary. The construction-related water quality measures listed in Section 3.12.4 would also serve to mitigate potential impacts related to discharge of silt and construction-related contaminants into adjacent natural communities. Detailed avoidance and minimization requirements are contained in the Environmental Commitments Record (ECR; Appendix N).

Mitigation Measures

For impacts to natural communities of concern from the proposed project that could not be avoided (presented in Table 3.19-1), mitigation is proposed as shown in, and following, Table 3.19-2. Freshwater marsh, mule fat scrub-disturbed, and disturbed wetland are discussed in Section 3.20. Proposed biological mitigation measures for the Preferred Alternative have been approved by the USFWS through a Biological Opinion issued November 23, 2011 (see Appendix R), and are equal to or greater than the requirements of the MSCP.

Mitigation for impacts to natural communities of concern is proposed to occur off site on three Lonestar parcels acquired by Caltrans on Otay Mesa. These parcels total approximately 184 acres and are located north/northeast of Brown Field, east and west of SR-125, and south of the Otay River Valley.

The Lonestar parcels support approximately 169.78 acres of non-native grassland, approximately 12.43 acres of Diegan coastal sage scrub, approximately 0.5 acre of eucalyptus woodland, an approximately 0.25-acre stock pond, approximately 0.85 acre of vernal pool, and approximately 0.1 acre of unvegetated basins (HELIX 2009a). The majority of the parcels are within the City MHPA; some of it is also designated as MSCP BRCA.

The off-site mitigation parcels would be placed in a conservation easement. A perpetual long-term management, maintenance, and monitoring plan would be prepared, addressing the method of protecting the resources in perpetuity; monitoring schedule; measures to prevent human and exotic species encroachment; funding mechanism; and contingency measures. A non-wasting endowment also would be provided to secure ongoing funding for the perpetual management, maintenance, and monitoring. Detailed requirements are contained in the ECR (Appendix N).

Interim management of the mitigation parcels would be the responsibility of Caltrans. Long-term management of the Lonestar parcels is expected to be conducted by the County of San Diego Department

of Parks and Recreation. In the event that the County Department of Parks and Recreation is unable to provide long-term management for the parcels, Caltrans would manage the parcels until they are transferred to an appropriate agency to manage and preserve the wildlife habitat in perpetuity. This would be done through a deed with restrictive covenants to protect and maintain the present and future uses of the parcels. These restrictive covenants would include a list of prohibitive uses that are inconsistent with the conservation purposes of the parcels. The parcels would be used for proposed project mitigation and mitigation for other projects, as applicable, to preserve habitat and to create, restore, and enhance vernal pool habitat. Caltrans anticipates that it would not be possible to place the conservation easements or other conservation mechanisms, or transfer management endowments for its Lonestar Ridge conservation parcels prior to initiating project impacts. Annual reports on the status of the mitigation parcels would be provided, however, until the conservation mechanisms have been placed, a long-term management plan has been prepared, and the endowment funds have been transferred.

Prior to initiation of mitigation activities, a draft mitigation and monitoring plan would be prepared outlining a planting scheme, site preparation, an exotics control program, irrigation, grading requirements, and success criteria (see Appendix N for details). A two-year plant establishment period, and three-year habitat management and monitoring program would be implemented in consultation with the resource agencies.

Should the Lonestar parcels prove to be infeasible for any reason, alternate land would be acquired by Caltrans as close as possible to the proposed project, with the concurrence of the resource agencies.

Native Grassland

Proposed mitigation for the permanent impact to 0.2 acre of native grassland would occur through the restoration of native grassland at a 2:1 ratio where non-native grassland presently occurs (Table 3.19-2). Restoration of native grassland would occur through the dethatching of non-native grassland and subsequent planting of native grasses on the western Lonestar parcel. A mitigation plan for restoration of this community would be prepared that identifies the location for restoration, responsible parties, methods of implementation, maintenance and monitoring requirements, final success criteria, and contingency measures.

**Table 3.19-2
PROPOSED MITIGATION SUMMARY FOR DIRECT IMPACTS TO NATURAL COMMUNITIES OF CONCERN**

Natural Community	Total Impacted Acreage by Alternative (Acres)				Mitigation Ratio ²	Proposed Mitigation by Alternative (Acres)			
	Preferred	Two Interchange ¹	One Interchange	No Interchange		Preferred	Two Interchange	One Interchange	No Interchange
Native Grassland (dominated by coastal saltgrass)	0.2	0.2	0.2	0.2	2:1	0.4 restoration of NNG with native grassland	0.4 restoration of NNG with native grassland	0.4 restoration of NNG with native grassland	0.4 restoration of NNG with native grassland
Non-native Grassland	171.9	179.8	184.4	173.7	1:1	171.9 enhancement and preservation ³	179.8 enhancement and preservation ³	184.4 enhancement and preservation ³	173.7 enhancement and preservation ³
Grassland Restoration	3.2	3.2	3.2	3.2	1:1	3.2 enhancement of non-native grassland with native grassland ³	3.2 enhancement of non-native grassland with native grassland ³	3.2 enhancement of non-native grassland with native grassland ³	3.2 enhancement of non-native grassland with native grassland ³

Note: Impacts do not include those within the SR-905 approved FEIS/FEIR limits of disturbance

¹ An additional 19.6 acres of non-native grassland (NNG) would be impacted by the Siempre Viva Road Full Interchange Variation of the Two Interchange Alternative.

² Per County MSCP Tiers/Ratios: impacts are not located in an MSCP BRCA or the City MHPA, but the proposed mitigation would be in such areas.

³ To also mitigate for habitat loss for the burrowing owl and other grassland-dependent special status species.

Non-Native Grassland

Proposed mitigation for permanent impacts of up to 199.4 acres of non-native grassland (i.e., if the Two Interchange Alternative with the Siempre Viva Road Full Interchange Variation is selected) is through enhancement and/or preservation of non-native grassland at a 1:1 ratio (Table 3.19-2). Since the grassland in the R/W is considered occupied by the burrowing owl, the mitigation land should also be burrowing owl habitat. Enhancement and preservation of non-native grassland on the Lonestar parcels is proposed to satisfy this mitigation. It is acknowledged that the Lonestar parcels support approximately 169.78 acres of non-native grassland, and that additional grassland may be required if an alternative other than the Preferred Alternative is selected. Caltrans will consult with the resource agencies to devise an acceptable strategy to compensate for any shortage in the required mitigation.

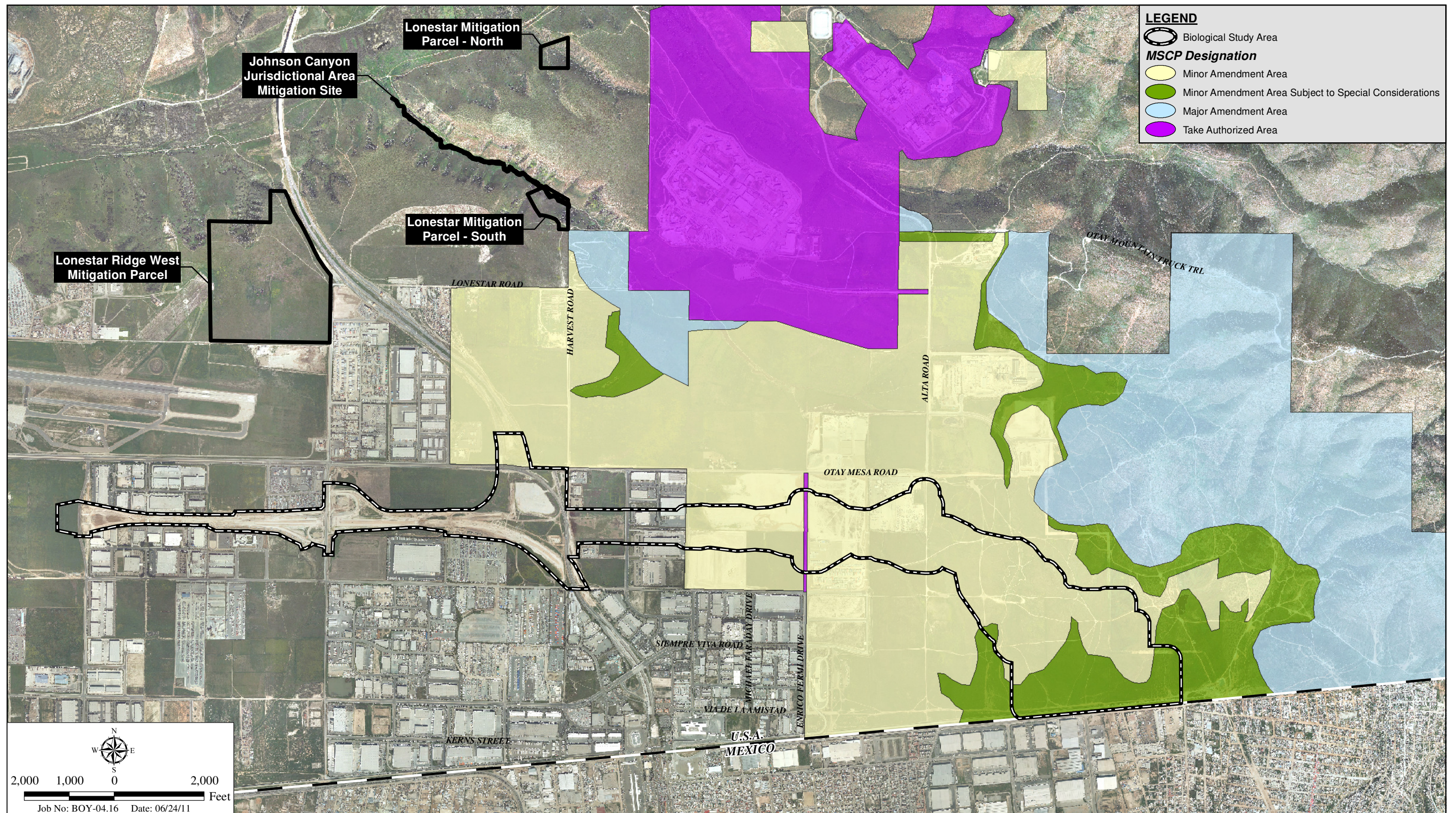
Grassland Restoration

Proposed mitigation for permanent impacts to 3.2 acres of grassland restoration would occur through enhancement of non-native grassland with native grassland at a 1:1 ratio (Table 3.19-2). Therefore, 3.2 acres of mitigation is proposed. Since the grassland restoration in the R/W is considered occupied by the burrowing owl, the mitigation land should also be burrowing owl habitat. Enhancement of non-native grassland with native grassland on the Lonestar parcels (or equivalent mitigation parcel) would satisfy this mitigation.

No Build Alternative

No impacts were identified for the No Build Alternative. No project action would occur under the No Build Alternative; therefore, no associated avoidance, minimization, or mitigation measures would be required.

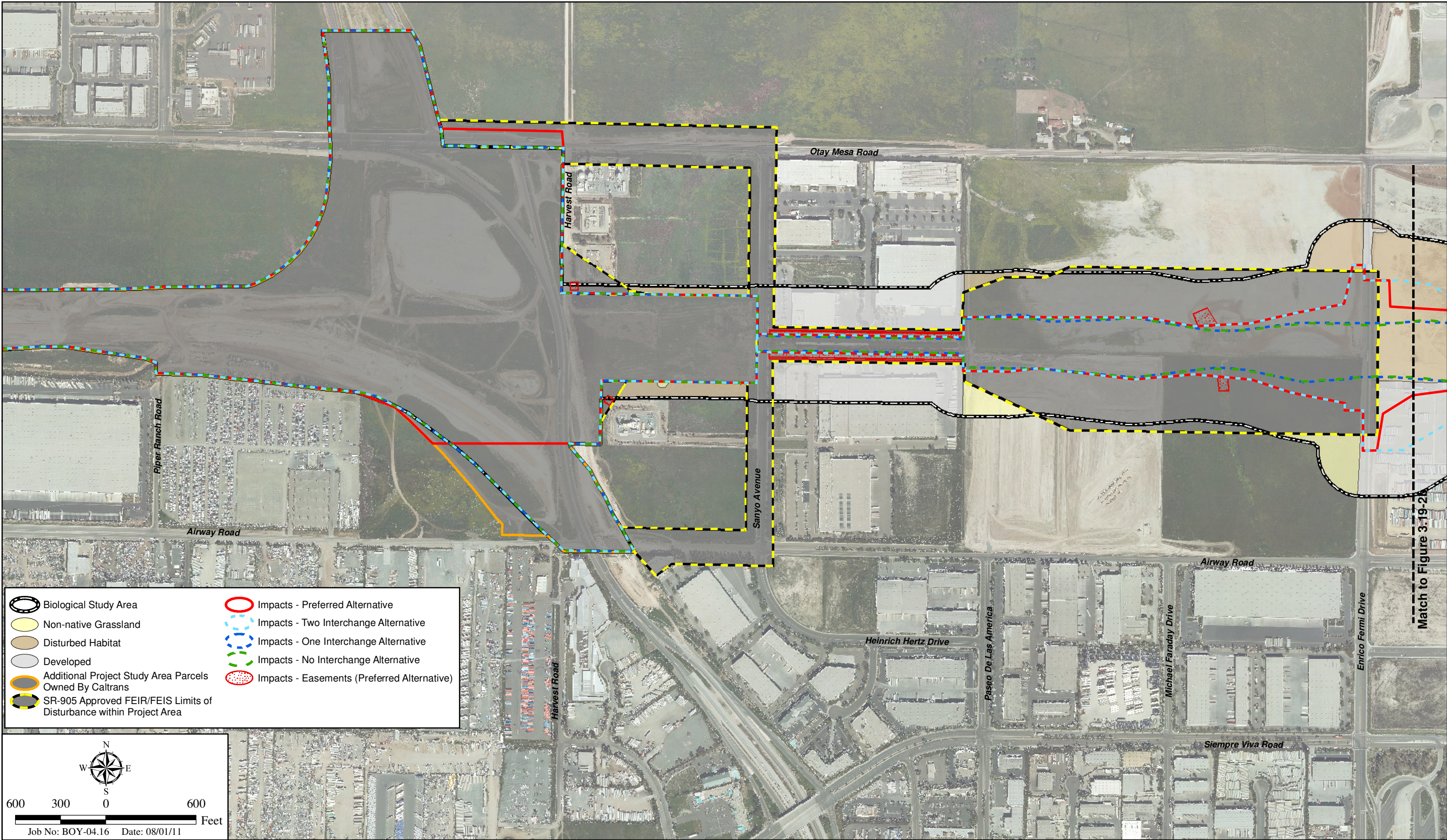
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MSCP Designations and Proposed Mitigation Sites

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

Figure 3.19-1

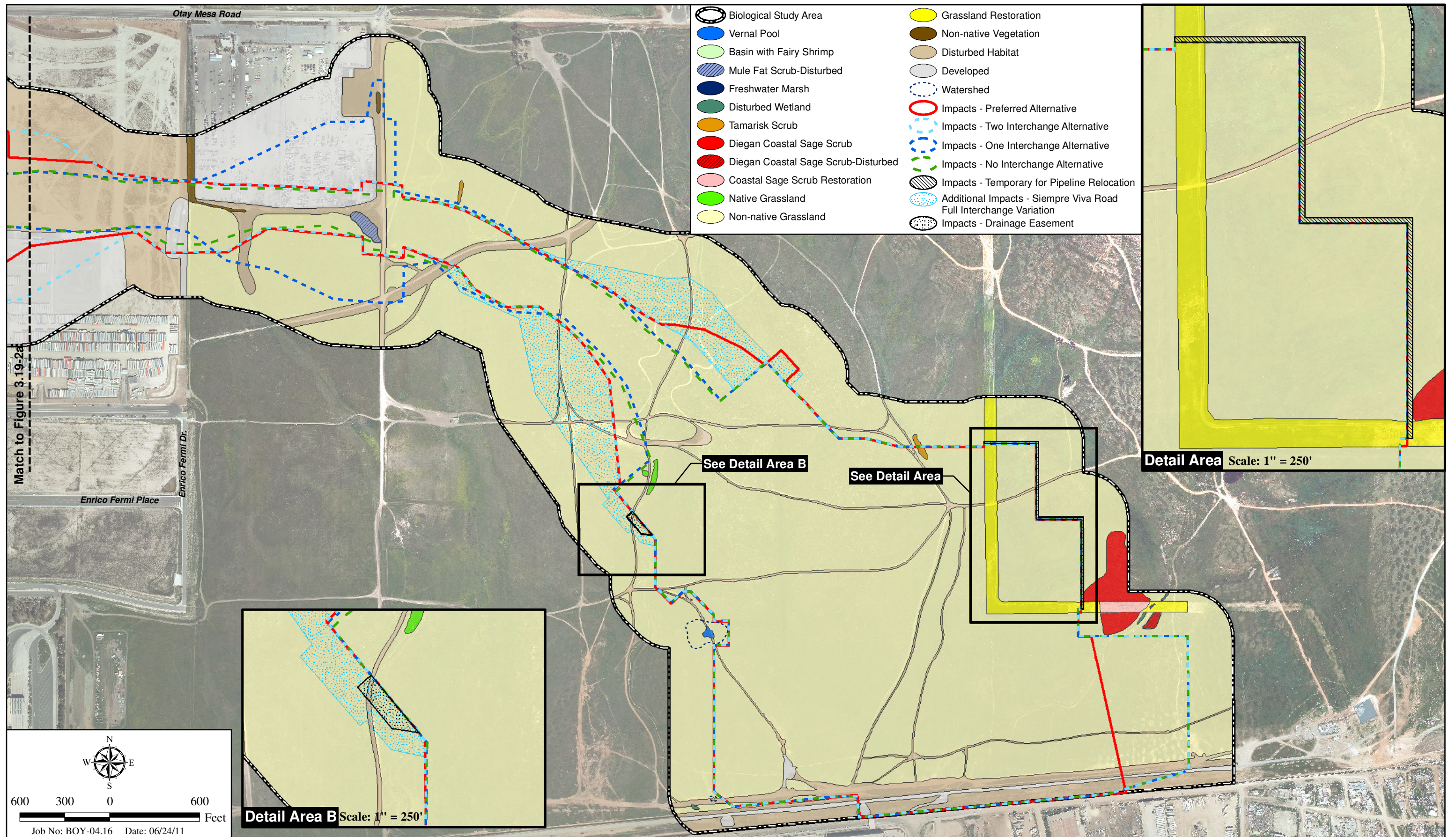


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Vegetation/Impacts Map

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

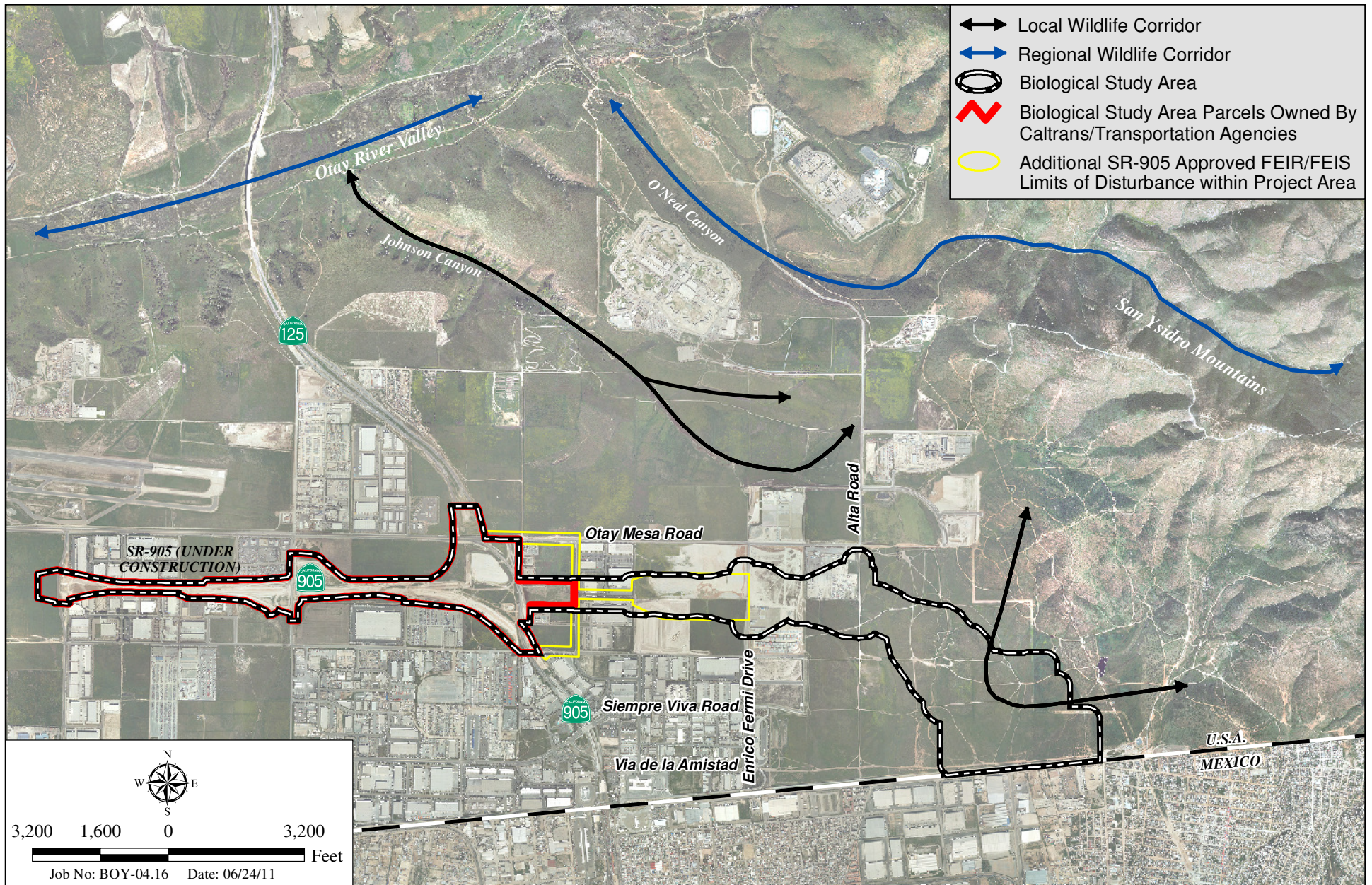
Figure 3.19-2a



Vegetation/Impacts Map

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

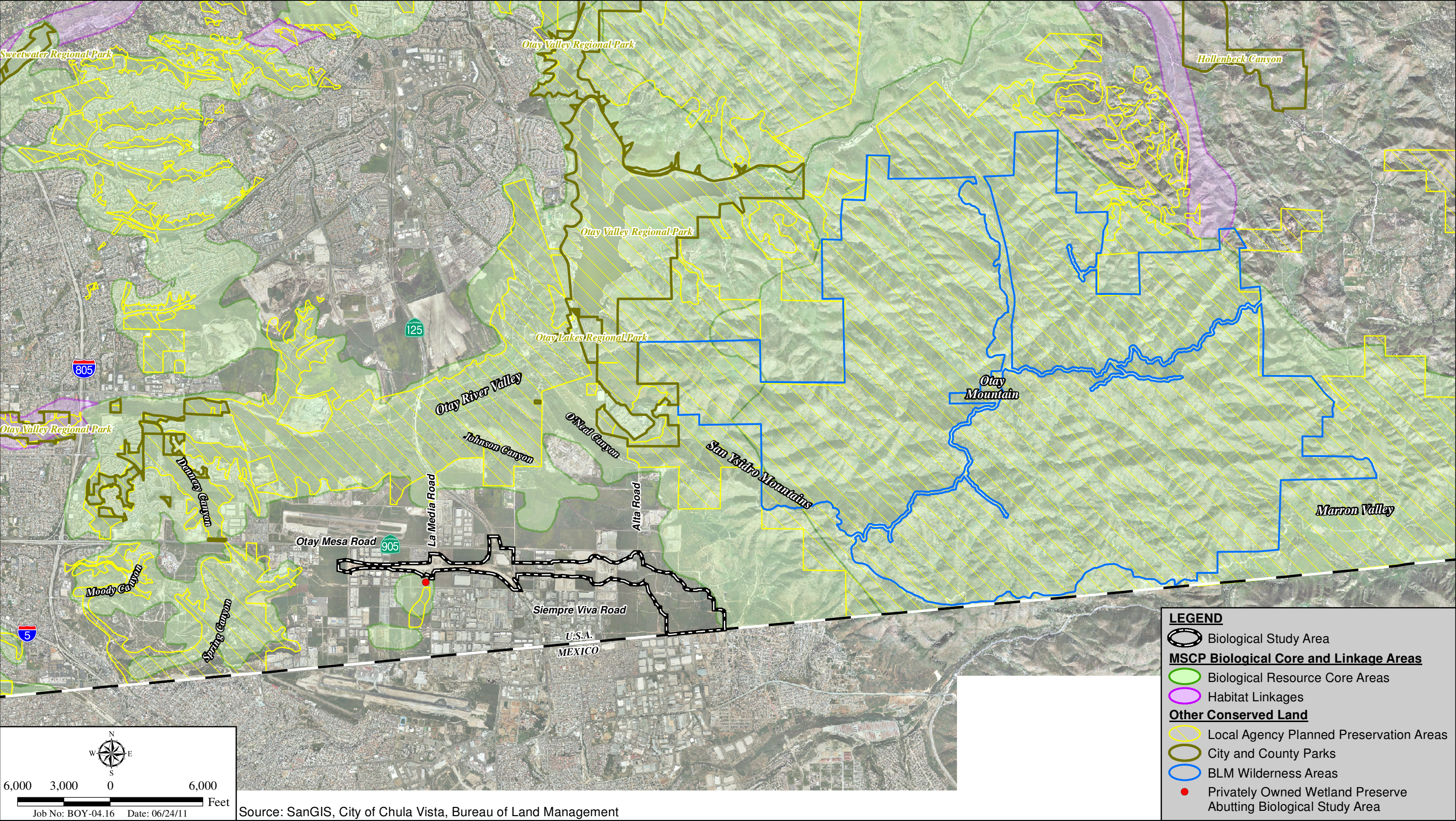
Figure 3.19-2b



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STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

Figure 3.19-3



Conserved Land

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

Figure 3.19-4

3.20 WETLANDS AND OTHER WATERS

This section addresses wetlands and other waters, including regulatory requirements associated with potential impacts, as well as general avoidance, minimization and/or mitigation measures.

3.20.1 Regulatory Setting

Wetlands and other waters are protected under a number of laws and regulations. At the federal level, the Federal Water Pollution Control Act, more commonly referred to as the CWA (33 USC 1344) is the primary law regulating wetlands and surface waters. The CWA regulates the discharge of dredged or fill material into waters of the U.S. (WUS), including wetlands. WUS include navigable waters, interstate waters, territorial seas and other waters that may be used in interstate or foreign commerce. To classify wetlands for the purposes of the CWA, a three-parameter approach is used that includes the presence of hydrophytic (water-loving) vegetation, wetland hydrology, and hydric soils (soils formed during saturation/inundation). All three parameters must be present, under normal circumstances, for an area to be designated as a jurisdictional wetland under the CWA.

USACE issues two types of 404 permits: standard and general permits. Nationwide permits, a type of general permit, are issued to authorize a variety of minor project activities with no more than minimal effects. Ordinarily, projects that do not meet the criteria for a Nationwide Permit may be permitted under one of USACE's standard permits. For standard permits, the USACE decision to approve is based on compliance with EPA's Section 404(b)(1) Guidelines (U.S. EPA 40 CFR Part 230), and whether permit approval is in the public interest. The 404 (b)(1) Guidelines were developed by the EPA in conjunction with USACE, and allow the discharge of dredged or fill material into the aquatic system (WUS) only if there is no practicable alternative which would have less adverse effects. The Guidelines state that USACE may not issue a permit if there is a LEDPA to the proposed discharge that would have less effects on WUS, and not have any other significant adverse environmental consequences.

Section 404 of the CWA establishes a regulatory program that provides that no discharge of dredged or fill material can be permitted if a practicable alternative exists that is less damaging to the aquatic environment or if the nation's waters would be significantly degraded. The Section 404 permit program is run by the USACE with oversight by the EPA.

The EO for the Protection of Wetlands (EO 11990) also regulates the activities of federal agencies with regard to wetlands. Essentially, this EO states that a federal agency, such as the FHWA, cannot undertake or provide assistance for new construction located in wetlands unless the head of the agency finds that: (1) that there is no practicable alternative to the construction, and (2) the proposed project includes all practicable measures to minimize harm.

At the state level, wetlands and waters are regulated primarily by the CDFG and the RWQCB. In certain circumstances, the Coastal Commission (or Bay Conservation and Development Commission) may also be involved. Sections 1600-1607 of the Fish and Game Code require any agency that proposes a project that will substantially divert or obstruct the natural flow of or substantially change the bed or bank of a river, stream, or lake to notify CDFG before beginning construction. If CDFG determines that the project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed Alteration Agreement (LSAA) will be required. CDFG jurisdictional limits are usually defined by the tops of the stream or lake banks, or the outer edge of riparian vegetation, whichever is wider. Wetlands under jurisdiction of the USACE may or may not be included in the area covered by an LSAA obtained from the CDFG.

RWQCBs were established under the Porter-Cologne Water Quality Control Act to oversee water quality. The RWQCB also issues water quality certifications for impacts to wetlands and waters in compliance with Section 401 of the CWA. See Section 3.12 of this Final EIR/EIS for additional details.

3.20.2 Affected Environment

An NES was completed for the proposed project (HELIX 2010d) that addressed aquatic resources present in the BSA. Subsequent to identification of the Preferred Alternative, an NES Addendum (HELIX 2011) was prepared to document specific impacts of the Preferred Alternative, all of which are encompassed within the BSA addressed in the NES for the Draft EIR/EIS. In addition, a *Jurisdictional Delineation Report* was completed for the proposed project (HELIX 2009b) as referenced in Section 2.2 and Chapter 6.0 of the NES. The USACE has indicated that it will accept the jurisdictional delineation.

The western portion of the BSA supports grassland, disturbed habitat, and developed land (Figure 3.19-2a, *Vegetation/Impacts Map*). The eastern portion of the BSA supports grassland, riparian habitats, wetland habitats, and scrub communities (Figure 3.19-2b, *Vegetation/Impacts Map*) and consists of gently undulating hills and mesas with three ephemeral drainages that convey flows south to Mexico. Portions of Enrico Fermi Drive and Alta Road occur within the BSA. In addition, several dirt roads cross the grasslands in the eastern portion of the BSA and are regularly traveled by CBP and off-highway vehicles (OHVs). General drainage in the BSA is primarily to the south for the eastern half of the BSA and to the west for the western half of the BSA.

Five aquatic habitat types occur in the BSA that are under the jurisdiction of the USACE and/or CDFG: mule fat scrub-disturbed, freshwater marsh, tamarisk scrub, disturbed wetland, and non-wetland WUS/CDFG streambed (Figures 3.20-1, *USACE Jurisdictional Areas/Impacts*, and Figure 3.20-2, *CDFG Jurisdictional Areas/Impacts*).

Areas under USACE jurisdiction in the BSA consist of freshwater marsh and disturbed wetland that are wetlands and Drainages A, B, and C that are non-wetland WUS (Figure 3.20-1).

Areas under CDFG jurisdiction consist of mule fat scrub-disturbed, freshwater marsh, tamarisk scrub, and disturbed wetland that are wetlands, as well as Streambeds A through E (Figure 3.20-2).

Descriptions of these resources are provided below.

Freshwater Marsh

Freshwater marsh is dominated by perennial emergent monocots that can reach a height between 12 and 15 feet. This vegetation type occurs along the coast, and in coastal valleys near river mouths and around the margins of lakes and springs. These areas are permanently flooded by freshwater yet lack a significant current (Holland 1986). Freshwater marsh occurs in the eastern portion of the BSA (Figures 3.19-2b, 3.20-1, and 3.20-2). Species observed in the freshwater marsh include broad-leaved cattail (*Typha latifolia*), slender creeping spike-rush (*Eleocharis montevidensis*), and rabbitsfoot grass (*Polypogon monspeliensis*). Wetland habitats are naturally limited, and remaining acreages can provide important island habitats for migrant birds. Other important wetland habitat functions include: flood conveyance, flood storage, and sediment control; providing surface water and insects for fish, amphibians, and birds; providing spawning grounds for aquatic fauna; providing habitat for rare and endangered species; and controlling water quality and erosion. Wetland habitat alteration in southern California has occurred because of filling, draining, vegetation clearing, diverting water, impounding water, increasing or decreasing nutrient levels, channelizing, increasing sediment loading, lowering of water tables, human recreational activities, gravel mining, proliferation of exotic species, grazing, and urban development (Bowler 1990).

Mule Fat Scrub – Disturbed

Mule fat scrub is a shrubby, riparian scrub community dominated by mule fat (*Baccharis salicifolia*) and interspersed with shrubby willows (*Salix* spp.). Mule fat scrub-disturbed in the BSA is considered “disturbed” because it also supports a high percentage of cover by non-native species including tamarisk (*Tamarix* sp.), scarlet pimpernel (*Anagallis arvensis*), mustard, bull thistle (*Cirsium vulgare*), bristly ox-tongue (*Picris echinoides*), and prickly lettuce (*Lactuca serriola*). Mule fat scrub-disturbed occurs just south of the vehicle auction yard at Otay Mesa Road and Alta Road (Figures 3.19-2b and 3.20-2). Riparian communities are naturally limited and situated along stream courses and adjacent stream banks. They perform all of the important habitat functions of wetlands (described above for freshwater marsh), and they can provide corridors for wildlife movement. Riparian habitat alteration in southern California has occurred for the same reasons as those listed above for freshwater marsh.

Tamarisk Scrub

Tamarisk scrub is typically comprised of shrubs and/or small trees of exotic tamarisk species but also may support willows, salt bushes (*Atriplex* spp.), and coastal salt grass. This vegetation community occurs along intermittent streams in areas where high evaporation rates increase the salinity level of the soil. Tamarisk is a phreatophyte, a plant that can obtain water from an underground water table that is too far below the surface for many other species to access. Because of its deep root system and high transpiration rates, tamarisk can substantially lower the water table to below the root zone of native species, thereby competitively excluding them. As a prolific seeder, it may rapidly displace native species within a drainage (Holland 1986). Tamarisk scrub occurs in two patches in the eastern portion of the BSA (Figures 3.19-2b and 3.20-2).

Disturbed Wetland

This vegetation community is dominated by exotic wetland species that invade areas that have been previously disturbed or have undergone periodic disturbances. The composition of disturbed wetland is highly variable based on the hydrology, soils, and type and frequency of disturbance. Typical species observed in this community in the BSA include rabbitsfoot grass, curly dock (*Rumex crispus*), and Italian ryegrass. Disturbed wetland occurs along the U.S. - Mexico international border in the eastern portion of the BSA (Figures 3.19-2b and 3.20-2). Disturbed wetland is naturally limited, performs important wetland functions, and has been altered in southern California as described above for freshwater marsh.

Non-wetland Waters of the U.S./CDFG Streambed

The BSA supports portions of several unnamed, ephemeral drainages that are USACE non-wetland WUS and/or CDFG streambeds (Figures 3.20-1 and 3.20-2). Drainages A, B, and C are located in the eastern portion of the BSA; all three drainages convey flows south to the U.S. - Mexico border and originate north of the BSA in the San Ysidro Mountains. Drainages A and B are continuous across the BSA, ranging in width from one to six feet. Drainage C exhibits a discontinuous ordinary high water mark (OHWM), comprising two reaches within the BSA, and is narrower than Drainages A and B, with widths ranging from less than one foot to one foot. All three of these drainages are USACE and CDFG jurisdictional. Drainage B has been modified slightly to connect the mapped drainage across certain dirt roads, based on direction from the USACE received during a field meeting with Caltrans staff on June 2, 2011.

Drainages D and E are located in the central portion of the BSA (Figure 3.20-2). Drainage D averages one foot wide and exhibits an OHWM only for a short distance before disappearing into the surrounding non-native grassland. A recently constructed outfall structure just north of this drainage has likely contributed to the formation of the OHWM. Drainage D does not have a significant nexus to any

traditional navigable waters and is isolated from other WUS; for these reasons, it is not considered jurisdictional to the USACE. It is, however, considered a CDFG streambed because CDFG jurisdiction is not based on connectivity to other habitats downstream. Drainage E in the BSA consists of one reach ranging from one foot to five feet wide. It receives storm water runoff from a culvert outlet on the south side of the vehicle auction yard as well as irrigation runoff from adjacent landscaping. Although it exhibits an OHWM in its upper reaches, the drainage quickly fades into non-native grassland in the central portion of the BSA and no longer exhibits a discernible OHWM. This drainage is considered an isolated feature that is not jurisdictional to the USACE. It is, however, a CDFG streambed.

3.20.3 Environmental Consequences

Alternatives Evaluated Previously

As described in Chapter 2.0, a wide range of alternatives and variations have been evaluated in developing the proposed project alternatives analyzed below. The Phase I PEIR/PEIS focused on selecting generalized locations for proposed SR-11 and the POE site, analyzing the Western and Central alternatives, Phase I program alternatives, as well as the No Build Alternative. An Eastern Alternative was previously studied and eliminated as a result of anticipated impacts to sensitive biological and cultural resources. Please refer to Section 2.3 for additional discussion of previously evaluated and rejected alternatives. Based on data provided in the PEIR/PEIS and information received during public review, the Phase I ROD selected the Western Alternative as the preferred SR-11 corridor and POE location over the Central Alternative. The build alternatives described in Section 2.2 of this Final EIR/EIS are based on the Phase I Western Alternative.

All of these alternatives and variations were considered during the process of developing the proposed project alternatives analyzed in the Tier II Draft EIR/EIS, but were eliminated from further consideration for reasons outlined in Section 2.3 of this document, including additional biological impacts/mitigation requirements.

Preferred Alternative and Draft EIR/EIS Build Alternatives and Variations

The following analysis of potential impacts to wetlands and other waters addresses the Preferred Alternative and the Draft EIR/EIS build alternatives with or without the associated variations.

Table 3.20-1, *Impact Summary for Jurisdictional Features*, and Figures 3.20-1 and 3.20-2 present the impacts to wetlands and other waters under the jurisdiction of the USACE and/or CDFG for each of the build alternatives. All impacts would be permanent.

None of the proposed project variations would result in changes to the identified impacts from any of the Draft EIR/EIS build alternatives. The variations would all occur within developed areas or within approved/developed highway interchange R/W.

The total impact to USACE jurisdictional areas for the Preferred Alternative would be 0.22 acre and 4,492 linear feet. The impact to CDFG jurisdictional areas would be 0.68 acre and 4,999 linear feet (the USACE jurisdiction is completely contained within the larger area of CDFG jurisdiction).

The total impact to USACE jurisdictional areas for the Two Interchange Alternative would be 0.22 acre and 4,608 linear feet. The impact to CDFG jurisdictional areas would be 0.69 acre and 4,838 linear feet (the USACE jurisdiction is completely contained within the larger area of CDFG jurisdiction).

The total impact to USACE jurisdictional areas for the One Interchange Alternative would be 0.21 acre and 4,494 linear feet. The total impact to CDFG jurisdictional areas would be 0.70 acre and 4,860 linear feet (the USACE jurisdiction is completely contained within the larger area of CDFG jurisdiction).

**Table 3.20-1
IMPACT SUMMARY FOR JURISDICTIONAL FEATURES¹**

Resource	Impacts by Alternative ²			
	Preferred	Two Interchange	One Interchange	No Interchange
CDFG Jurisdictional Areas (Acres)				
Mule Fat Scrub-Disturbed	0.42	0.42	0.42	0.42
Streambed	0.26	0.27 ³	0.28	0.26
Total Acreage	0.68	0.69	0.70	0.68
CDFG Jurisdictional Areas (Linear Feet)				
Drainage A	1,599	1,804	1,804	1,804
Drainage B	1,553	1,464 ³	1,350	1,334
Drainage C	1,340	1,340	1,340	1,340
Drainage D	32	32	53	32
Drainage E	475	198	313	116
Total Linear Feet	4,999	4,838	4,860	4,626
USACE Jurisdictional Areas (Acres)				
Drainage A – WUS	0.11	0.11	0.11	0.11
Drainage B – WUS	0.08	0.08 ³	0.07	0.07
Drainage C – WUS	0.03	0.03	0.03	0.03
Total Acreage	0.22	0.22	0.21	0.21
USACE Jurisdictional Drainages (Linear Feet)				
Drainage A – WUS	1,599	1,804	1,804	1,804
Drainage B – WUS	1,553	1,464 ³	1,350	1,334
Drainage C – WUS	1,340	1,340	1,340	1,340
Total Linear Feet	4,492	4,608	4,494	4,478

Note: Impacts do not include previously permitted impacts from the SR-905 EIR/EIS. All reported impact numbers include 0.01 acre and 165 linear feet of impact to Drainage B, associated with a proposed easement outside project R/W. Impacts associated with the easement would be considered permanent. Therefore, all project impacts would be permanent.

- 1 USACE jurisdictional areas impacted overlap completely with CDFG jurisdictional areas impacted, so the total acreage of CDFG jurisdiction represents the total area of CDFG and USACE jurisdiction impacted.
- 2 Wetland habitats are rounded to the nearest 0.01 acre. Implementation of any of the proposed project variations would not change the impacts presented in this table.
- 3 An additional 1,074 square feet (0.02 acre) of CDFG Streambed and USACE jurisdictional area, representing an additional 476 linear feet of USACE and CDFG jurisdictional drainage within Drainage B, would be impacted with implementation of the Siempre Viva Road Full Interchange Variation of the Two Interchange Alternative.

The total impact to USACE jurisdictional areas for the No Interchange Alternative would be 0.21 acre and 4,478 linear feet, while the impact to CDFG jurisdiction would be 0.68 acre and 4,626 linear feet (again, the USACE jurisdiction is completely contained within the larger area of CDFG jurisdiction).

The mule fat scrub-disturbed that would be impacted is a small, isolated wetland habitat supporting a high percentage of non-native species and is of relatively low quality. Due to its small size and distance from other wetland/riparian habitats, it would not be expected to support any listed or special status wetland/riparian-dependent animal species. The primary functions of this habitat include potential

nesting habitat for commonly occurring birds and cover for small mammals. Despite its low quality and isolation from other wetland habitats, impacts to the mule fat scrub-disturbed could affect the habitat functions provided by this habitat, but would have only a minimal effect on overall functions and values of wetland habitat remaining in the Otay region. The mule fat scrub-disturbed is of low value to society in terms of common uses such as birdwatching, photography, and environmental education because of its small size, disturbed nature, and location on private land.

The USACE non-wetland WUS and CDFG streambeds are narrow, primarily ephemeral features that convey flows only following rain events and do not support hydrophytic vegetation. The drainages are of average quality and would not be expected to contribute substantially to life cycle functions of aquatic invertebrates or other water-dependent species. Other functions may include a minor contribution to transportation of nutrients to downstream waters (including cross-border flows), which would be minimally impacted by the proposed project.

As shown on Figure 3.19-4 (*Conserved Land*), a privately-owned preserve parcel (mitigation land for the Robinhood Ridge residential development project, owned by Robinhood III), which is known to contain wetlands, abuts SR-905 southeast of the interchange at La Media Road. Caltrans has also installed 3.28 acres of southern willow scrub/freshwater marsh mitigation with a 2.96-acre coastal sage scrub buffer at the eastbound off-ramp from SR-905 to La Media Road. In addition, jurisdictional waters abut other areas of the proposed SR-11, POE, and CVEF R/W. There is the potential for indirect impacts to these wetlands during project construction due to encroachment by construction personnel; placement of construction materials, equipment or debris; and siltation/runoff of contaminants from the construction site.

No Build Alternative

Under the No Build Alternative, the described development actions for the build alternatives and variations would not occur, and no associated impacts to wetlands and other waters would result.

Documentation of Agency Coordination

Since there are WUS in the BSA, the USACE, as a Cooperating Agency under NEPA and SAFETEA-LU, provided a comment letter (dated October 23, 2009) on the purpose and need statement and project alternatives. (See Chapter 5.0 for a more detailed discussion of agency coordination.) In this letter, the USACE stated that impacts to vernal pools require an Individual Permit; however, the proposed project would avoid impacts to the vernal pool in the BSA (see Section 3.19.4).

Federal Permitting

Impacts equal to or less than 0.5 acre of WUS are generally processed with a Nationwide Permit (NWP), and impacts greater than 0.5 acre of WUS are processed with an Individual Permit from the USACE. Depending on the thresholds specified by the type of permit required (e.g., NWP-14 for linear transportation projects or NWP-39 for institutional or commercial developments), the USACE may also require an Individual Permit for projects impacting greater than 300 linear feet of drainage, irrespective of the acreage affected, or it may issue a waiver for such impacts. On March 17, 2011, the USACE submitted a comment on the project Draft EIR/EIS, indicating that the project would likely qualify under NWP-14 (refer to Section 5.4, Comment Letter E).

A CWA Section 401 Water Quality Certification administered by the State Water Resources Control Board must be issued prior to any 404 Permit. All areas considered USACE jurisdictional would be covered under the 401 Certification.

State Permitting

The CDFG regulates alterations or impacts to streambeds or lakes under California Fish and Game Code 1602. The CDFG requires a LSAA for projects that will divert or obstruct the natural flow of water; change the bed, channel, or bank of any stream; or use any material from a streambed. The LSAA is a contract between the applicant and CDFG stating what activities can occur in the riparian zone and stream course (California Association of Resource Conservation Districts 2002). Any impacts to CDFG habitat would require an LSAA.

Least Environmentally Damaging Practicable Alternative

Caltrans began to study alternative alignments for SR-11 in approximately 1999, and this process has previously resulted in the selection of the current corridor location for SR-11 and the POE as the LEDPA in the Phase I environmental process, with the support of the USACE and CDFG. The various alternative locations that have been considered and rejected over the past 10 years are described in Section 2.3, along with the reasons each alternative was rejected. The use of Airway, Otay Mesa or Siempre Viva roads was ruled out as infeasible because of the poor mobility and increased congestion to local streets that would occur from the high volume of truck traffic. Three potential alignments were initially identified for SR-11, corresponding to three alternative POE locations. These were titled the Western, Central and Eastern alternatives. The Eastern Alternative was eliminated during preliminary environmental studies as a result of anticipated impacts to vernal pools, Diegan coastal sage scrub, quino habitat, listed plant species, and cultural resources. A Phase I PEIR/PEIS was then prepared to evaluate the Western and Central alternatives, as well as the No Action Alternative. This document was certified on August 6, 2008, and the Phase I ROD was approved on October 6, 2008. Based on data provided in the PEIR/PEIS and information received during public review, the Phase I ROD selected the Western Alternative as the preferred SR-11 corridor and POE location over the Central Alternative for the following reasons:

- It would fulfill the Phase I program purpose and need
- It would exhibit a lower potential for Tier II impacts to listed/sensitive biological resources (i.e., it was the biologically preferred alternative)
- It would have a lower potential for land use impacts
- It was preferred by most of the various Tier II cooperating and participating agencies, including the resource agencies
- It would be the more cost-effective solution to the program purpose and need

Thus, the Western Alternative was selected as the Phase I LEDPA. A conditional Presidential Permit has been granted for the POE in this location, and route adoption for SR-11 by the California Transportation Commission is pending. Mexico has secured land on the Mexican side of the border to correspond with the selected U.S. location, and Mexico has requested that the U.S. provide a wider area for direct connection of the two POEs. For this reason, and to accommodate a CVEF and necessary grading for the POE, the POE shape was modified and was widened along the border. The western and northeastern boundaries of the POE were selected specifically to avoid impacts to vernal pools and basins with fairy shrimp, as well as Diegan coastal sage scrub, and to minimize impacts to wetlands and non-wetland WUS.

Since this Tier II environmental analysis focuses on alternative designs for the selected Western Alternative location, there is no appreciable difference in the impacts of the Tier II project alternatives to

jurisdictional wetlands and other waters. Impacts to such features cannot be avoided because the project location has been set through a prior environmental process, and there are no design alternatives in this location that would further avoid the impacts to wetlands and other waters, beyond the avoidance that has occurred through the prior site selection process and the current Tier II planning process.

3.20.4 Avoidance, Minimization, and/or Mitigation Measures

Preferred Alternative and Draft EIR/EIS Build Alternatives and Variations

Avoidance and Minimization Efforts

The Phase I PEIR/PEIS focused on selecting generalized locations for proposed SR-11 and the POE site, analyzing the Western and Central alternatives, Phase I program alternatives, as well as the No Build Alternative. An Eastern Alternative was previously studied and eliminated as a result of anticipated impacts to sensitive biological and cultural resources (see Section 2.3, *Alternatives Considered but Eliminated from Further Discussion Prior to the Draft EIR/EIS*, of this document).

Based on the Phase I PEIR/PEIS and ROD, the Tier II analysis in this environmental document identifies and evaluates design and operational alternatives for proposed SR-11, the POE, and a related CVEF located adjacent to the POE. The Tier II alternatives are generally located within the boundaries of the Phase I Western Alternative, for which a conditional Presidential Permit was granted by the U.S. State Department in November 2008. The configurations of both the SR-11 and POE/CVEF sites have been refined during the Tier II scoping process and Draft EIR/EIS process in response to various engineering, planning and environmental considerations.

A TSM/TDM Only Alternative was also evaluated as part of the Tier II analysis, along with an additional design variation for the Two Interchange Alternative (as described in Section 2.2.1). A number of design alternatives were also considered for the proposed CVEF involving the use of facilities at the existing Otay Mesa CVEF and the provision of secured access for commercial vehicles from the proposed East Otay Mesa POE.

The alternatives addressed in this Tier II Final EIR/EIS were developed by a multi-disciplinary team to achieve the project purpose and need while avoiding or minimizing environmental impacts. Under evaluation in this document are the Preferred Alternative and Draft EIR/EIS build alternatives with several design/ operational variations and incorporated TSM/TDM measures, as well as the No Build Alternative. None of the variations or TSM/TDM measures would result in changes to the identified impacts to USACE or CDFG jurisdiction from any of the build alternatives. For all Tier II build alternatives, the modified boundaries of the POE were selected specifically to avoid impacts to vernal pools and basins with fairy shrimp, as well as Diegan coastal sage scrub, and to minimize impacts to wetlands and non-wetland WUS. No additional avoidance or minimization efforts were determined feasible for USACE and/or CDFG jurisdictional areas because of the locations of these features that are entirely within, or traverse through, the adopted project locations.

To address potential indirect impacts during construction, the project grading/construction limits shall be clearly delineated with orange construction fencing and silt fencing or fiber rolls to ensure that construction activity remains within the defined limits of work. Pets shall be prohibited at the construction site. A qualified biologist shall attend a pre-construction meeting and inspect the delineated areas prior to the initiation of vegetation clearing/grading, during clearing and grubbing of habitat that occurs within 200 feet of the grading limits, and during regularly scheduled construction monitoring visits. The construction-related water quality measures listed in Section 3.12.4 would also serve to mitigate potential impacts related to discharge of silt and construction-related contaminants into adjacent

jurisdictional areas. Detailed avoidance and minimization requirements are contained in the ECR (Appendix N).

Mitigation Measures

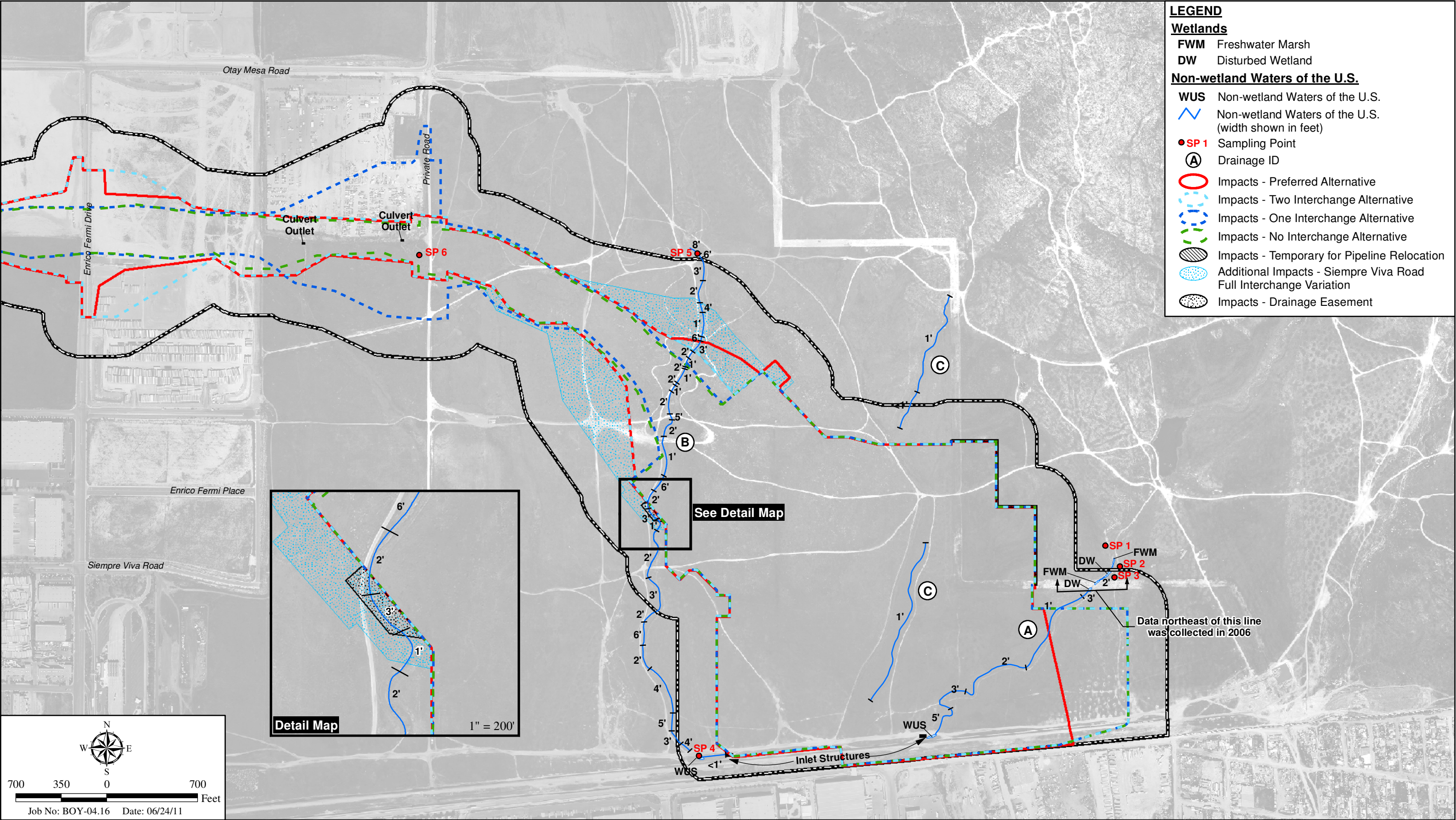
Impacts to USACE and CDFG jurisdictional areas require permitting and mitigation. The proposed mitigation ratio for mule fat scrub-disturbed is 2:1 and the proposed mitigation ratio for impacts to USACE non-wetland WUS/CDFG streambed is 1:1. Therefore, the proposed compensatory mitigation for the Preferred Alternative is 1.10 acres, the proposed compensatory mitigation for the Two Interchange Alternative is 1.11 acres, the proposed compensatory mitigation for the One Interchange Alternative is 1.12 acres, and the proposed compensatory mitigation for the No Interchange Alternative is 1.10 acres.

Proposed compensatory mitigation is via the restoration and preservation of USACE non-wetland WUS/CDFG streambed at Johnson Canyon, a drainage that extends onto one of the Lonestar parcels and supports jurisdictional features (see Figure 3.19-1). A jurisdictional delineation would be necessary to determine the extent of USACE/CDFG jurisdiction on the Lonestar parcel. Proposed compensatory mitigation would consist of removal of non-native vegetation (primarily tamarisk) and implementation of native vegetation planting and seeding for up to approximately 4,999 linear feet of Johnson Canyon.

No Build Alternative

No impacts were identified for the No Build Alternative. No project action would occur under the No Build Alternative; therefore, no associated avoidance, minimization or mitigation measures would be required.

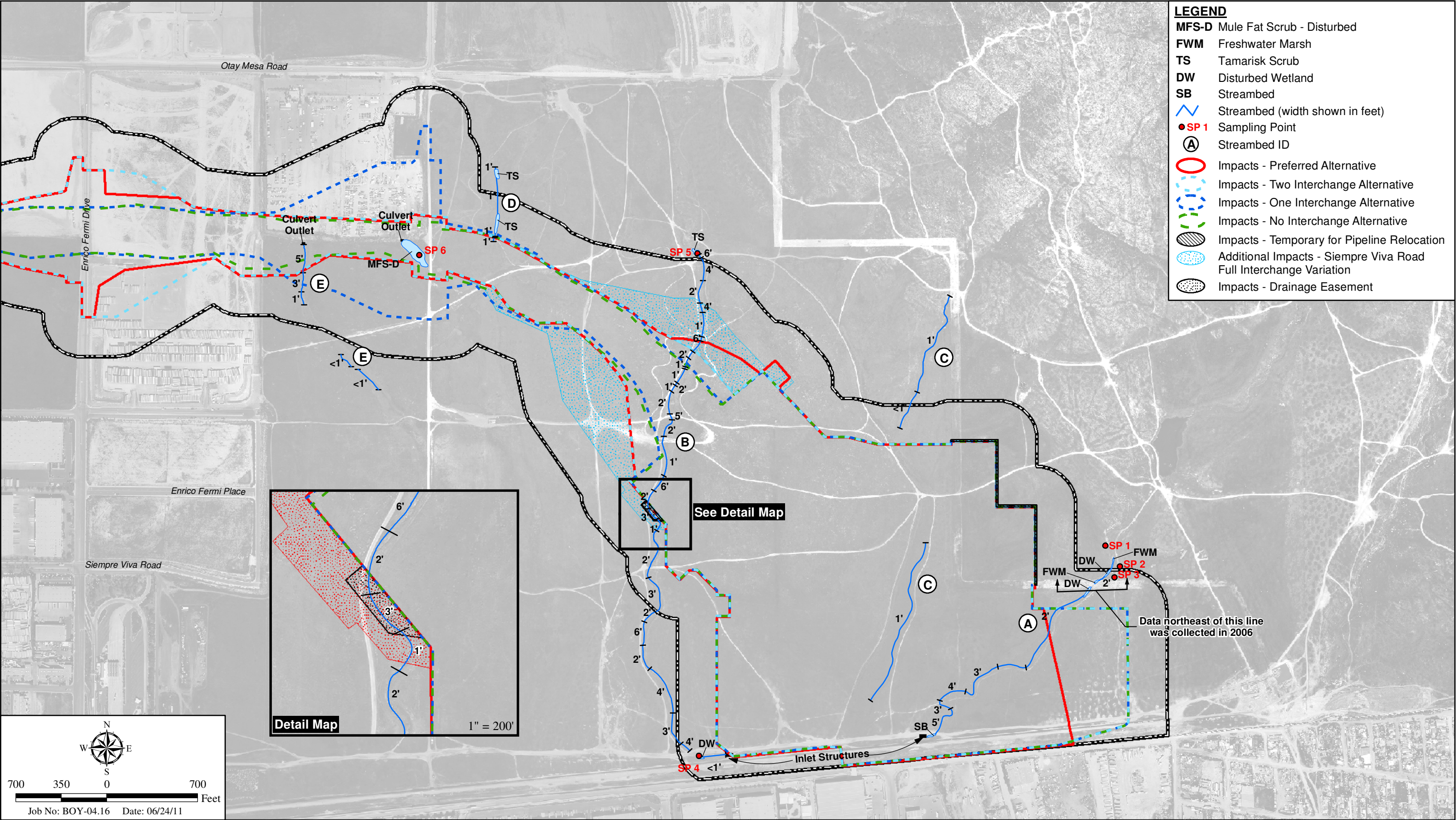
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USACE Jurisdictional Areas/Impacts

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

Figure 3.20-1



CDFG Jurisdictional Areas/Impacts

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

Figure 3.20-2

3.21 PLANT SPECIES

This section addresses special status plant species that are not federally or state listed. Refer to Section 3.23 for a discussion of threatened and endangered plant species, as well as critical habitat.

3.21.1 Regulatory Setting

The USFWS and CDFG have regulatory responsibility for the protection of special status plant species. “Special status” species are selected for protection because they are rare and/or subject to population and habitat declines. Special status is a general term for species that are afforded varying levels of regulatory protection. The highest level of protection is given to threatened and endangered species; these are species that are formally listed or proposed for listing as endangered or threatened under the FESA and/or the California ESA (CESA). Please see Section 3.23 in this document for detailed information regarding these species.

This section of the document discusses all the other special status plant species, including CDFG species of special concern, USFWS candidate species, California Native Plant Society (CNPS) rare and endangered plants, and County MSCP Subarea Plan narrow endemic species.

The regulatory requirements for FESA can be found at USC 16, Section 1531, et seq. (see also 50 CFR Part 402). The regulatory requirements for CESA can be found at California Fish and Game Code, Section 2050, et seq. Caltrans projects are also subject to the Native Plant Protection Act, found at Fish and Game Code, Section 1900-1913, and CEQA PRC, Sections 2100-21177.

3.21.2 Affected Environment

An NES for the proposed project (HELIX 2010d) describes the special status plant species that have potential to occur in the BSA and the results of focused special status plant species surveys that were performed in the BSA during the period 2000 to 2009. A compilation of all data collected from these surveys is included on Figures 3.21-1a through 3.21-1d, *Special Status Species/Impacts*. The compiled data were adjusted to eliminate multiple observations (from different years) of the same special status species from the same locations so as not to over-report their presence. Additionally, a list of all plant species observed in 2005, 2006, and 2008/2009 was made and included in Appendix D of the NES. Subsequent to identification of the Preferred Alternative, an NES Addendum (HELIX 2011) was prepared to document specific impacts of the Preferred Alternative, all of which are encompassed within the BSA addressed in the NES for the Draft EIR/EIS.

Dominant Plant Species

Non-native grassland is the dominant vegetation community in the BSA (approximately 69 percent coverage); therefore, the dominant plant species in the BSA are plants from this community: oats, red brome, ripgut grass, Italian ryegrass, and mustard. Dominant plant species found in other communities in the BSA include broad-leaved cattail, curly dock, rabbitsfoot grass, mule fat, tamarisk, scarlet pimpernel, bull thistle, bristly ox-tongue, California sagebrush, San Diego County viguiera, California buckwheat, coastal saltgrass, filaree, hottentot fig, and Russian thistle. Fourteen (approximately 70 percent) of these species are non-native, and six (approximately 30 percent) of these species are native.

Special Status Plant Species

Despite the disturbed nature of the majority of the BSA (i.e., it is dominated by a non-native vegetation community), it supports, or has the potential to support, numerous non-listed but special status plant species. Table 3.21-1, *Special Status Plant Species Potentially Occurring or Known to Occur in the BSA*, presents information on special status plant species potentially occurring or known to occur in the BSA.

Table 3.21-1 SPECIAL STATUS PLANT SPECIES POTENTIALLY OCCURRING OR KNOWN TO OCCUR IN THE BSA				
Common Name	Scientific Name	Status¹	General Habitat Description	Rationale²
California adolphia	<i>Adolphia californica</i>	CNPS List 2.1, County Sensitive	Clay soil in sage scrub; occasionally, the periphery of vernal pools	Detected (2006)
San Diego bursage	<i>Ambrosia chenopodiifolia</i>	CNPS List 2.1, County Sensitive	Coastal sage scrub; known from only 10 locations in California	Low potential to occur in BSA; not observed in multiple focused plant surveys
Orcutt's brodiaea	<i>Brodiaea orcuttii</i>	CNPS List 1B.1, County Sensitive	Closed-cone coniferous forest, chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland, vernal pools with clay and sometimes serpentine soils	Low potential to occur in BSA; not observed in multiple focused plant surveys
Small-flowered morning glory	<i>Convolvulus simulans</i>	CNPS List 4.2, County Sensitive	Chaparral, coastal scrub openings and valley/foothill grasslands	Detected (2009)
Western dichondra	<i>Dichondra occidentalis</i>	CNPS List 4.2, County Sensitive	Southern mixed chaparral, sage scrub, rock outcrops in grassland	Low potential to occur in Diegan coastal sage scrub in BSA; not observed in multiple focused plant surveys
Variegated dudleya	<i>Dudleya variegata</i>	CNPS List 1B.2, MSCP Narrow Endemic, County Sensitive	Chaparral, sage scrub, woodland, grassland, vernal pools with clay soils	Detected (2009)
San Diego barrel cactus	<i>Ferocactus viridescens</i>	CNPS List 2.1, County Sensitive	Chaparral, coastal scrub, valley and foothill grasslands, and vernal pools	Detected (2009)
Palmer's grapplinghook	<i>Harpagonella palmeri</i>	CNPS List 4.2, County Sensitive	Clay soils in grassland, sage scrub, and chaparral	Low potential to occur in BSA; not observed in multiple focused plant surveys
Graceful tarplant	<i>Holocarpha virgata</i> ssp. <i>elongata</i>	CNPS List 4.2, County Sensitive	Chaparral, cismontane woodlands, coastal sage scrub, and grasslands	Low potential to occur in BSA; not observed in multiple focused plant surveys

Table 3.21-1 (cont.) SPECIAL STATUS PLANT SPECIES POTENTIALLY OCCURRING OR KNOWN TO OCCUR IN THE BSA				
Common Name	Scientific Name	Status¹	General Habitat Description	Rationale²
Decumbent goldenbush	<i>Isocoma menziesii</i> var. <i>decumbens</i>	CNPS List 1B.2, County Sensitive	Chaparral, coastal sage scrub	Detected (2009)
San Diego marsh-elder	<i>Iva hayesiana</i>	CNPS List 2.2, County Sensitive	Creeks or intermittent streambeds	Detected (2009)
Southwestern spiny rush	<i>Juncus acutus</i> ssp. <i>leopoldii</i>	CNPS List 4.2, County Sensitive	Coastal salt marshes at brackish locales, alkaline meadows, riparian marshes	Low potential to occur in BSA; not observed in multiple focused plant surveys
California box-thorn	<i>Lycium californicum</i>	CNPS List 4.2, County Sensitive	Coastal scrub, coastal bluff scrub	Detected 750 ft west of the BSA (2009)
San Diego golden star	<i>Muilla clevelandii</i>	CNPS List 1B.1, County Sensitive	Clay soils in chaparral, coastal scrub, valley and foothill grassland, and in the vicinity of vernal pools	Detected just outside the BSA (2006). No access to survey nearby in the BSA in 2009
Little mouseltail	<i>Myosurus minimus</i> ssp. <i>apus</i>	CNPS List 3.1, County Sensitive	Grassland and vernal pools	Low potential to occur in BSA; not observed in multiple focused plant surveys
Coulter's matilija poppy	<i>Romneya coulteri</i>	CNPS List 4.2, County Sensitive	Post-burn sage scrub or chaparral or along water courses	Low potential to occur in BSA; not observed in multiple focused plant surveys
Munz's sage	<i>Salvia munzii</i>	CNPS List 2.2, County Sensitive	Chaparral and sage scrub	Low potential to occur in BSA; not observed in multiple focused plant surveys; species was observed east of BSA (prior to 2006; URS 2005)
San Diego County viguiera	<i>Viguiera laciniata</i>	CNPS List 4.2, County Sensitive	Sage scrub	Detected (2009)

¹ See Appendix F of the NES for status code information.² For the year detected, the most current year of detection is provided.

3.21.3 Environmental Consequences

Preferred Alternative and Draft EIR/EIS Build Alternatives and Variations

The following analysis of potential impacts to special status plant species addresses the Preferred Alternative and the Draft EIR/EIS build alternatives with or without the associated variations.

Direct, permanent impacts to special status plant species would result from removal of the plants during construction and their replacement with paved roadways, cut and fill slopes, drainage features, retaining walls, and all POE/CVEF facilities. There would be no direct impacts to special status plant species during relocation of the natural gas pipeline in the northeastern portion of the POE/CVEF footprint (Figures 3.21-1a through 3.21-1d). The proposed easement for modifying and maintaining a portion of an existing drainage along the western boundary of the Siempre Viva Interchange to minimize the potential for scour and associated erosion following project implementation would impact 10 individuals of San Diego marsh-elder; this additional impact is included within the total impact to this species, as described below for each alternative.

As shown in Table 3.21-1, seven special status but non-listed plant species were observed in the BSA (Figures 3.21-1a through 3.21-1d): California adolphia, small-flowered morning glory, variegated dudleya, San Diego barrel cactus, decumbent goldenbush, San Diego marsh-elder, and San Diego County viguiera. Of these, five species would be directly impacted by one or more of the build alternatives, as discussed below. Two species (California adolphia and San Diego County viguiera) would not be impacted by the Preferred Alternative or any of the other build alternatives because they are outside of the R/W (Figure 3.21-1d), so they are not discussed below.

The Siempre Viva Road Full Interchange Variation, if implemented, would increase the impacts of the Two Interchange Alternative with regard to small-flowered morning glory, San Diego barrel cactus and San Diego marsh-elder. None of the other potential project variations would result in changes to the identified impacts to special status plant species from any of the Draft EIR/EIS build alternatives, because the additional impacts of these variations would all occur within developed areas or within approved/developed highway interchange R/W.

Small-Flowered Morning Glory

Small-flowered morning glory was observed in 31 patches (a multi-year total) throughout the grassland in the eastern portion of the BSA prior to 2006 and in 2009. Up to 20 patches of small-flowered morning glory would be directly impacted by the Preferred Alternative and each of the Draft EIR/EIS build alternatives (Figures 3.21-1a through 3.21-1d). Two additional patches of this species would be impacted under the Siempre Viva Road Full Interchange Variation of the Two Interchange Alternative.

Variegated Dudleya

Variegated dudleya was observed in five locations (a multi-year total of 756 individuals) in the eastern portion of the BSA. The Preferred Alternative would avoid impacts to all of the variegated dudleya, and each of the Draft EIR/EIS build alternatives would directly impact all individuals of variegated dudleya that are located within the BSA (Figure 3.21-1d).

San Diego Barrel Cactus

San Diego barrel cactus was observed in eight locations (a multi-year total of 19 individuals) in the eastern portion of the BSA. Observations made prior to 2009 appear to no longer exist or may not have been observed due to lack of access to survey. The Preferred Alternative would impact one individual of San Diego barrel cactus and each of the Draft EIR/EIS build alternatives would directly impact 16 individuals of San Diego barrel cactus (Figure 3.21-1d). One additional individual of this species would be impacted under the Siempre Viva Road Full Interchange Variation of the Two Interchange Alternative.

Decumbent Goldenbush

Decumbent goldenbush was observed in 10 locations representing 177 individuals in the southeastern portion of the BSA. The Preferred Alternative would impact 115 individuals of decumbent goldenbush and each of the Draft EIR/EIS build alternatives would directly impact 160 individuals of decumbent goldenbush (Figures 3.21-1c and 3.21-1d).

San Diego Marsh-Elder

San Diego marsh-elder was observed in 30 locations (a multi-year total of 65 individuals) in the eastern portion of the BSA. The Preferred Alternative would impact 41 individuals of San Diego marsh-elder and each of the Draft EIR/EIS build alternatives would directly impact up to 43 individuals of San Diego marsh-elder (Figures 3.21-1b and 3.21-1c), which includes impacts to 10 individuals within the easement for modifying and maintaining a portion of an existing drainage along the western boundary of the Siempre Viva Interchange to minimize the potential for scour and associated erosion following project implementation. An additional 11 individuals of this species would be impacted under the Siempre Viva Road Full Interchange Variation of the Two Interchange Alternative.

No Build Alternative

Under the No Build Alternative, the described development actions for the build alternatives and variations would not occur, and no associated impacts to sensitive plant species would result.

3.21.4 Avoidance, Minimization, and/or Mitigation Measures

Preferred Alternative and Draft EIR/EIS Build Alternatives and Variations

As described in Section 3.19.4, a Final PEIR/PEIS was published for the SR-11 and Otay Mesa East POE that identified the preferred location for the proposed project as the Western Alternative thereby avoiding some impacts that would have occurred if the proposed project were to be constructed within the Central or Eastern alternative areas. This section describes additional efforts that would be implemented to avoid or minimize impacts to special status plant species. Where impacts could not be avoided or minimized, this section describes the mitigation proposed to compensate for those impacts.

General

Salvage and transplantation of sensitive plant species, including small-flowered morning glory, variegated dudleya and San Diego barrel cactus, and planting of seed or container stock of decumbent goldenbush at the Lonestar Ridge West parcel would be conducted to the maximum extent practicable. A qualified biologist or restoration ecologist would oversee any seed collection, plant removal, or transplantation to ensure proper management of the salvaged materials.

Small-flowered Morning Glory

Avoidance and Minimization Efforts. No avoidance or minimization efforts were determined feasible for small-flowered morning glory because it is found throughout non-native grassland that occupies the majority of the eastern portion of the necessary R/W. During construction of the proposed project, however, construction BMPs, installation of construction fencing, and monitoring construction limits would be conducted to avoid and/or minimize direct impacts to special status plant species outside the proposed project R/W.

Proposed Mitigation. Project impacts to small-flowered Morning Glory would be mitigated by planting of seed or container stock at the Lonestar Ridge West parcel, representing at least 80 percent of the impacted small-flowered morning glory plants. The species would also be preserved concurrently with preservation of non-native grassland on the Lonestar Ridge West parcel; the species is known to be present there as it was observed during a survey for the Quino checkerspot butterfly in 2009 (HELIX 2009c; see also Section 3.19.4).

Variegated Dudleya

Avoidance and Minimization Efforts. FHWA's selection of the Western Alternative in its Phase I ROD (FHWA 2008) eliminated many impacts to variegated dudleya that could have otherwise occurred (see Section 3.19.4). Consideration of agency and public input received during the Tier II Draft EIR/EIS public review process has resulted in additional adjustments to the shape and internal layout of the POE and CVEF, which are now reflected in the Preferred Alternative. By moving the eastern boundary of the POE/CVEF footprint towards the west, impacts to the 756 individuals of variegated dudleya in the BSA have been avoided under the Preferred Alternative; the Preferred Alternative therefore would not impact variegated dudleya. For the Draft EIR/EIS build alternatives, no further avoidance or minimization efforts were determined feasible for variegated dudleya because of its location within the necessary R/W. During construction of the proposed project, however, construction BMPs, installation of construction fencing, and monitoring construction limits would be conducted to avoid and/or minimize direct impacts to special status plant species outside the proposed project R/W.

Proposed Mitigation. No mitigation would be required for the Preferred Alternative, because no impacts to variegated dudleya would occur with implementation of this alternative. Proposed mitigation for impacts to variegated dudleya for the Draft EIR/EIS build alternatives is through salvage and translocation of at least 80 percent of the populations to be impacted (and their underlying soil if necessary). It is proposed that the populations be translocated to the Lonestar parcels (or equivalent mitigation parcel; see Section 3.19.4). A mitigation plan would be prepared that identifies the locations for translocation, responsible parties, methods of implementation, maintenance and monitoring requirements, final success criteria, and contingency measures. The reason for this mitigation proposal is that variegated dudleya is a County MSCP List A species for which 80 percent preservation is typically required. While Caltrans is not subject to the MSCP, Caltrans strives to be consistent with it.

San Diego Barrel Cactus

Avoidance and Minimization Efforts. FHWA's selection of the Western Alternative in its Phase I ROD (FHWA 2008) eliminated many impacts to San Diego barrel cactus that could have otherwise occurred (see Section 3.19.4). By moving the eastern boundary of the POE/CVEF footprint towards the west, the Preferred Alternative would further reduce impacts to 15 individuals of San Diego barrel cactus in the BSA, resulting in an impact to a single individual. For the Draft EIR/EIS build alternatives, no further avoidance or minimization efforts were determined feasible for San Diego barrel cactus because of its location within the necessary R/W. During construction of the proposed project, however, construction BMPs, installation of construction fencing, and monitoring construction limits would be conducted to avoid and/or minimize direct impacts to special status plant species outside the proposed project R/W.

Proposed Mitigation. Proposed mitigation for impacts to San Diego barrel cactus is through salvage and translocation of at least 80 percent of the individuals to be impacted (and their underlying soil if necessary). It is proposed that the individuals be translocated to the Lonestar parcel (or equivalent

mitigation parcel; see Section 3.19.4). A mitigation plan would be prepared that identifies the locations for translocation, responsible parties, methods of implementation, maintenance and monitoring requirements, final success criteria, and contingency measures. The reason for this mitigation proposal is that San Diego barrel cactus is a County MSCP List B species for which 80 percent preservation is typically required. While Caltrans is not subject to the MSCP, Caltrans strives to be consistent with it.

Decumbent Goldenbush

Avoidance and Minimization Efforts. The Preferred Alternative would impact the least individuals of decumbent goldenbush. For the Preferred Alternative and the Draft EIR/EIS build alternatives, no further avoidance or minimization efforts were determined feasible for decumbent goldenbush because of its location within the necessary R/W. During construction of the proposed project, however, construction BMPs, installation of construction fencing, and monitoring construction limits would be conducted to avoid and/or minimize direct impacts to special status plant species outside the proposed project R/W.

Proposed Mitigation. Proposed mitigation for impacts to decumbent goldenbush is through the planting of seed or container stock of this species representing at least 80 percent of the impacted decumbent goldenbush plants, on the Lonestar parcels (or equivalent mitigation parcels; see Section 3.19.4). A mitigation plan would be prepared that identifies the locations for mitigation, responsible parties, methods of implementation, maintenance and monitoring requirements, final success criteria, and contingency measures. The reason for this mitigation proposal is that decumbent goldenbush is a County MSCP List A species for which 80 percent preservation is typically required. While Caltrans is not subject to the MSCP, Caltrans strives to be consistent with it.

San Diego Marsh-Elder

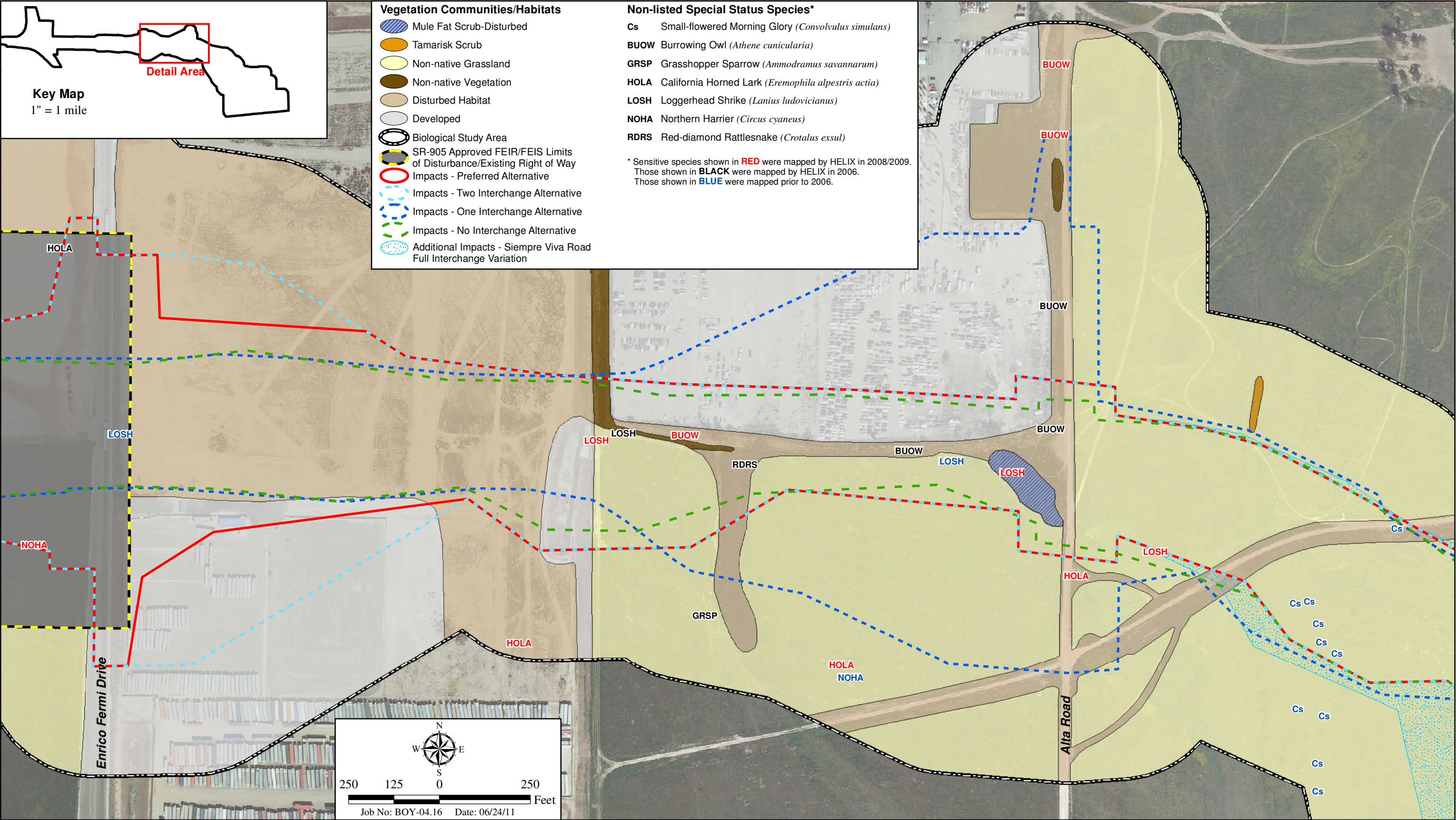
Avoidance and Minimization Efforts. For the Preferred Alternative and the Draft EIR/EIS build alternatives, no avoidance or minimization efforts were determined feasible for San Diego marsh-elder because of its location within the necessary R/W and easement for the project. During construction of the proposed project, however, construction BMPs, installation of construction fencing, and monitoring construction limits would be conducted to avoid and/or minimize direct impacts to special status plant species outside the proposed project R/W.

Proposed Mitigation. Project impacts to San Diego marsh elder would be mitigated by planting of seed from a seed source in Otay Mesa obtained from an approved nursery, to be planted at the Johnson Canyon mitigation site.

No Build Alternative

No impacts were identified for the No Build Alternative. No project action would occur under the No Build Alternative; therefore, no associated avoidance, minimization or mitigation measures would be required.

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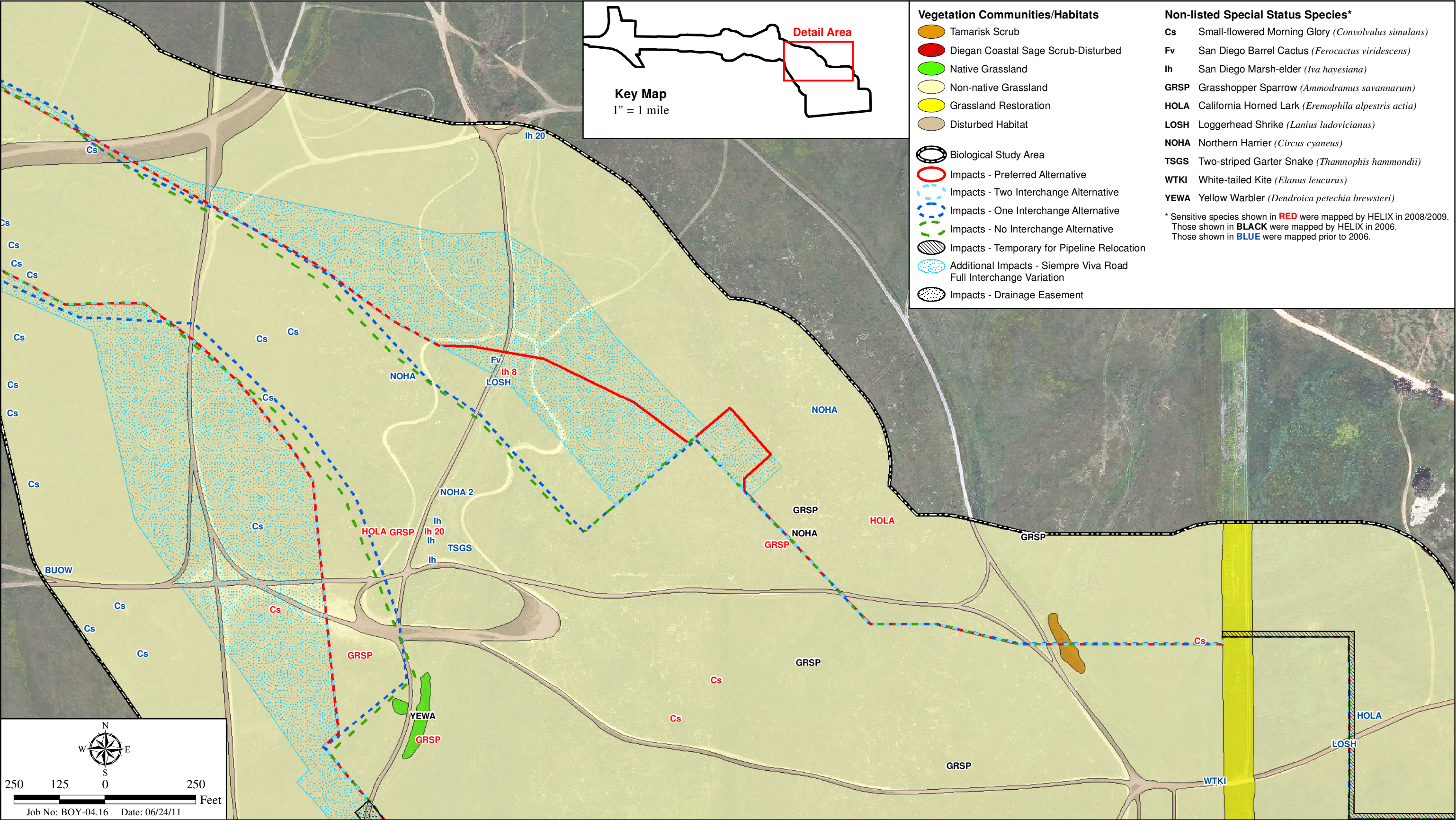


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Special Status Species/Impacts

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

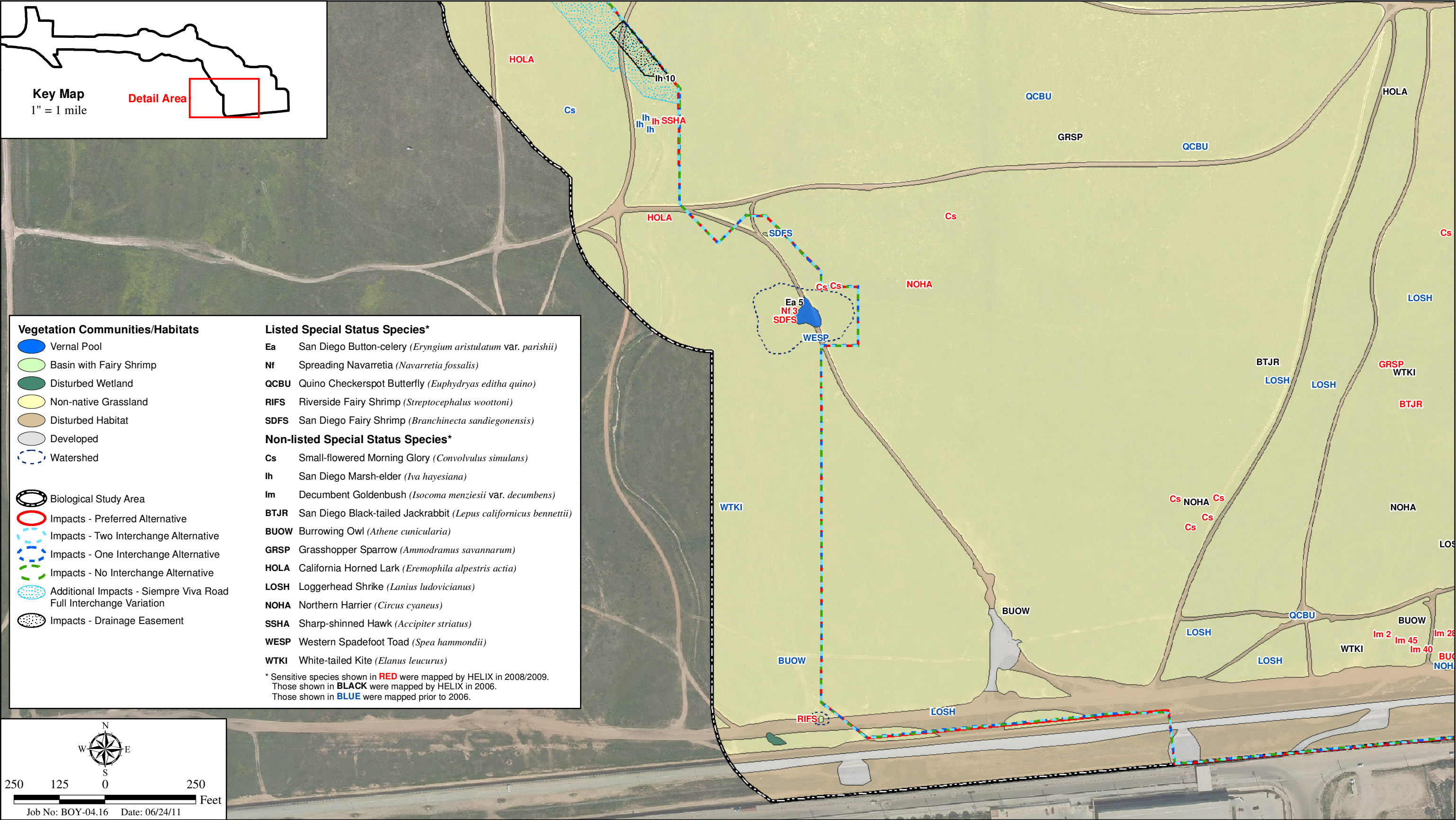
Figure 3.21-1a



Special Status Species/Impacts

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

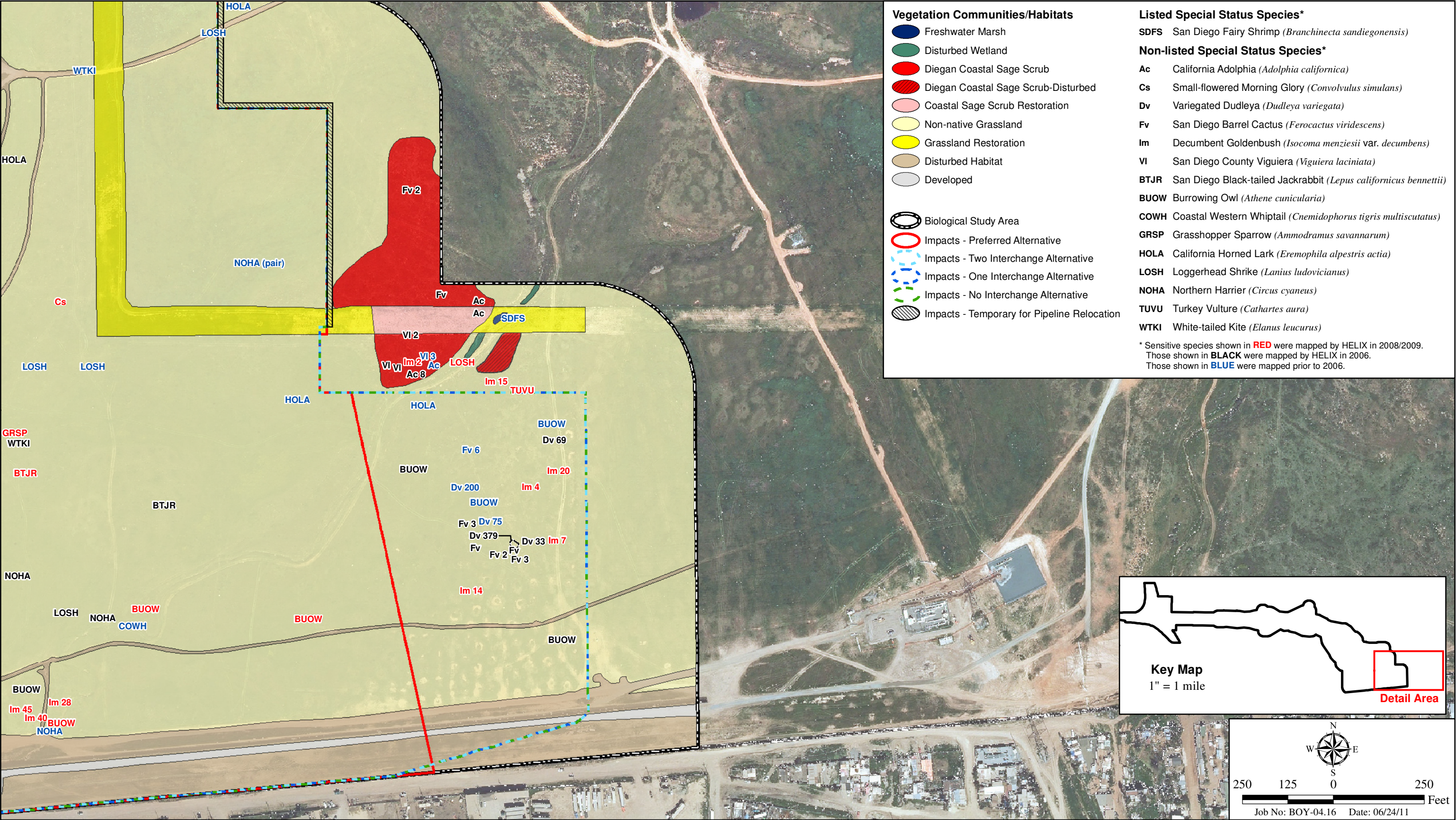
Figure 3.21-1b



Special Status Species/Impacts

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

Figure 3.21-1c



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Special Status Species/Impacts

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

Figure 3.21-1d

3.22 ANIMAL SPECIES

This section addresses special status animal species that are not federally or state listed. Refer to Section 3.23 for a discussion of threatened and endangered animal species, as well as critical habitat.

3.22.1 Regulatory Setting

Many state and federal laws regulate impacts to wildlife. The USFWS, the National Oceanic and Atmospheric Administration (NOAA) Fisheries and the CDFG are responsible for implementing these laws. This section discusses potential impacts and permit requirements associated with wildlife not listed or proposed for listing under the state or federal ESAs. Species listed or proposed for listing as threatened or endangered are discussed in Section 3.23. All other special status animal species are discussed here, including CDFG fully protected species and species of special concern, and USFWS or NOAA Fisheries candidate species.

Federal laws and regulations pertaining to wildlife include the following:

- National Environmental Policy Act
- Migratory Bird Treaty Act (MBTA)
- Fish and Wildlife Coordination Act
- Bald and Golden Eagle Act

Applicable NEPA requirements are discussed in Section 3.19. The Fish and Wildlife Coordination Act of the United States, enacted in 1934, protects fish and wildlife when federal actions result in the control or modification of a natural stream or body of water. The federal MBTA, as amended under the Migratory Bird Treaty Reform Act of 2004 (FR Doc. 05-5127; USFWS 2004), protects all migratory bird species native to the U.S. or its territories. The MBTA is generally protective of migratory birds but does not actually stipulate the type of protection required. In common practice, the MBTA is now used to place restrictions on disturbance of active bird nests during the nesting season (generally February 1 to August 31). The Bald and Golden Eagle Act (16 U.S.C. 668-668c), enacted in 1940, prohibits take of bald or golden eagles. Among other actions, "take" includes disturbance of bald and golden eagles to the degree that it substantially interferes with breeding, feeding, or sheltering behavior or results in injury. A permit can be issued for taking eagles when the take is associated with, but not the purpose of, an activity and cannot practicably be avoided; this is defined as non-purposeful take. Authorization is subject to conditions to minimize impacts.

State laws and regulations pertaining to wildlife include the following:

- California Environmental Quality Act
- Sections 1600 – 1603 of the Fish and Game Code
- Sections 4150 and 4152 of the Fish and Game Code

CEQA implications and Sections 1600 – 1603 of the Fish and Game Code are discussed in Section 3.19 and 3.20 of this EIR/EIS, respectively. Sections 4150 and 4152 of the Fish and Game Code allow the "take" of non-game animals that are found to have injured growing crops or other property under certain circumstances.

In addition to state and federal laws regulating impacts to wildlife, there are local regulations that need to be considered when developing projects. Local regulations pertaining to wildlife include the following:

- County of San Diego MSCP Subarea Plan

The MSCP is discussed in Section 3.19. While Caltrans strives to be consistent with the MSCP, it is not required to comply with the Subarea Plan, as discussed in Section 3.19.1.

3.22.2 Affected Environment

An NES was completed for the proposed project (HELIX 2010d) and lists (in its Appendix E) all animal species that were observed in the BSA. Section 2.2 and Appendix C of the NES also describe the focused surveys that were performed in the BSA for the burrowing owl (*Athene cunicularia*). All other focused animal surveys that were conducted were for listed species. Subsequent to identification of the Preferred Alternative, an NES Addendum (HELIX 2011) was prepared to document specific impacts of the Preferred Alternative, all of which are encompassed within the BSA that was addressed in the NES for the Draft EIR/EIS. A compilation of all special status animal species data collected during all surveys for the proposed project is included on Figures 3.21-1a through 3.21-1d, *Special Status Species/Impacts*. The compiled data were adjusted to eliminate multiple observations (from different years) of the same special status species from the same locations so as not to over-report their presence.

As described in Section 3.19.2, the BSA is dominated by non-native grassland. The animals most commonly observed in the BSA, therefore, are those usually found in a non-native grassland community, especially on Otay Mesa, and include, but are not limited to, western meadowlark (*Sturnella neglecta*), grasshopper sparrow (*Ammodramus savannarum*), burrowing owl, and Botta's pocket gopher (*Thomomys bottae*). Table 3.22-1, *Special Status Animal Species Potentially Occurring or Known to Occur in the BSA*, presents the non-listed but special status animal species potentially occurring or known to occur in the BSA. Fourteen of the 21 species, including the burrowing owl, were observed (Figures 3.21-1a through 3.21-1d).

Table 3.22-1 SPECIAL STATUS ANIMAL SPECIES POTENTIALLY OCCURRING OR KNOWN TO OCCUR IN THE BSA				
Common Name	Scientific Name	Status	General Habitat Description	Rationale
Western spadefoot toad	<i>Spea hammondi</i>	SSC, County Sensitive	Coastal sage scrub, chaparral, and grassland habitats, but is most common in grasslands with vernal pools or mixed grassland/coastal sage scrub areas	Detected (prior to 2006)
Orange-throated whiptail	<i>Cnemidophorus hyperythrus beldingi</i>	SSC, County Sensitive	Coastal sage scrub, chaparral, edges of riparian woodlands, and washes; also found in weedy, disturbed areas adjacent to these habitats	High potential to occur in the eastern portion of the BSA
Coastal western whiptail	<i>Cnemidophorus tigris multiscutatus</i>	Special Animal, County Sensitive	Open coastal sage scrub, chaparral, and woodlands; frequently found along the edges of dirt roads traversing its habitats	Detected (prior to 2006)

Table 3.22-1 (cont.) SPECIAL STATUS ANIMAL SPECIES POTENTIALLY OCCURRING OR KNOWN TO OCCUR IN THE BSA				
Common Name	Scientific Name	Status	General Habitat Description	Rationale
Red-diamond rattlesnake	<i>Crotalus exsul</i>	SSC, County Sensitive	Found in chaparral, coastal sage scrub, along creek banks, particularly among rock outcrops or piles of debris with a supply of burrowing rodents for prey	Detected (2006)
Coast horned lizard	<i>Phrynosoma coronatum blainvillei</i>	SSC, County Sensitive	Coastal sage scrub and open areas in chaparral, oak woodlands, and coniferous forests with sufficient basking sites, adequate scrub cover, and areas of loose soil; requires native ants, especially harvester ants (<i>Pogonomyrmex</i> sp.)	Moderate potential to occur in sage scrub in the BSA
Two-striped garter snake	<i>Thamnophis hammondi</i>	SSC, County Sensitive	Closely associated with streams with rocky beds and bordered by willows; also, ponds, lakes, wetlands and vernal pools, mixed oak woodlands, and chaparral	Detected (prior to 2006)
Sharp-shinned hawk	<i>Accipiter striatus</i>	Special Animal, County Sensitive	Forest interior and edges from sea level to near alpine areas; can also be found near rural, suburban and agricultural areas	Detected (2009)
Southern California rufous-crowned sparrow	<i>Aimophila ruficeps canescens</i>	SSC, County Sensitive	Coastal sage scrub and open chaparral as well as shrubby grasslands	Detected 1,000 feet north of the BSA (2006)
Grasshopper sparrow	<i>Ammodramus savannarum</i>	Special Animal, County Sensitive	Grassland	Detected (2009)
Bell's sage sparrow	<i>Amphispiza belli belli</i>	SSC, County Sensitive	Patchy distribution throughout the County, which often shifts to include partially recovered burned areas	Low potential to occur in the BSA
Golden eagle	<i>Aquila chrysaetos</i>	FP, SSC, MSCP Narrow Endemic, County Sensitive	Nesting occurs on cliff ledges or in trees on steep slopes, with foraging occurring primarily in grassland and sage scrub	High potential to forage in the BSA

Table 3.22-1 (cont.) SPECIAL STATUS ANIMAL SPECIES POTENTIALLY OCCURRING OR KNOWN TO OCCUR IN THE BSA				
Common Name	Scientific Name	Status	General Habitat Description	Rationale
Burrowing owl	<i>Athene cunicularia</i>	BCC, SSC, MSCP Narrow Endemic, County Sensitive	Shortgrass prairies, grasslands, lowland scrub, agricultural lands (particularly rangelands), prairies, coastal dunes, desert floors, and some artificial, open areas; they may also use golf courses, cemeteries, airports, vacant lots in residential areas and university campuses, fairgrounds, abandoned buildings, and irrigation ditches	Detected (2009)
Turkey vulture	<i>Cathartes aura</i>	County Sensitive	Foraging habitat includes most open habitats with breeding occurring in crevices among boulders	Detected (2009)
Northern harrier	<i>Circus cyaneus</i>	SSC, County Sensitive	Open grassland and marsh	Detected (2009)
Yellow warbler	<i>Dendroica petechia brewsteri</i>	SSC, County Sensitive	Mature riparian woodland	Detected as a migrant (2006)
White-tailed kite	<i>Elanus leucurus</i>	FP, County Sensitive	Riparian woodlands, oak or sycamore, or other tree groves adjacent to grassland	Detected (2006)
California horned lark	<i>Eremophila alpestris actia</i>	SSC, County Sensitive	Coastal strand, arid grasslands, and sandy desert floors	Detected (2009)
Prairie falcon	<i>Falco mexicanus</i>	BCC, SSC, County Sensitive	Nesting occurs on inland cliff or bluff ledges or occasionally in old hawk or raven (<i>Corvus corax</i>) nests; foraging occurs in grassland or desert habitats	Low potential to forage in the BSA; no potential to nest there
Loggerhead shrike	<i>Lanius ludovicianus</i>	BCC, SSC, County Sensitive	Grassland, open sage scrub, chaparral, and desert scrub	Detected (2009)
San Diego black-tailed jackrabbit	<i>Lepus californicus bennettii</i>	SSC, County Sensitive	Occurs primarily in open habitats including coastal sage scrub, chaparral, grasslands, croplands, and open, disturbed areas if there is at least some shrub cover present	Detected in the BSA (2006) and north and west of the BSA (2009)
American badger	<i>Taxidea taxus</i>	SSC, County Sensitive	Open plains and prairies, farmland, and sometimes edges of woods	Low to moderate potential to occur in the BSA

For the year detected, the most current year of detection is provided.

Status: BCC=Bird of (federal) Conservation Concern; SSC=State Species of Special Concern; Special Animal=taxa to be of the greatest conservation need to CDFG. FP=Fully Protected by CDFG. "Special Animal" was used when the other status codes above (e.g., SSC) were not indicated on the CDFG's Special Animal List. See Appendix E of the NES for more status code information.

3.22.3 Environmental Consequences

Preferred Alternative and Draft EIR/EIS Build Alternatives and Variations

The following analysis of potential impacts to special status animal species addresses the Preferred Alternative and the Draft EIR/EIS build alternatives with or without the associated variations.

Direct, permanent impacts to special status animal species would result from removal of their habitats during construction and their replacement with paved roadways, cut and fill slopes, drainage features, retaining walls, and all POE/CVEF facilities. Temporary impacts to special status animal species would occur during relocation of the natural gas pipeline in the northeastern portion of the POE/CVEF footprint (Figures 3.21-1a through 3.21-1d).

While no focused surveys for special status, non-listed animal species were conducted, with the exception of the burrowing owl, 14 such species were observed in the BSA, including the burrowing owl, during other surveys conducted for the project. The remaining 13 special status species opportunistically observed include western spadefoot toad, coastal western whiptail, two-striped garter snake, red-diamond rattlesnake, northern harrier, white-tailed kite, sharp-shinned hawk, turkey vulture, loggerhead shrike, California horned lark, yellow warbler, grasshopper sparrow, and San Diego black-tailed jackrabbit (Figures 3.21-1a through 3.21-1d). Others, such as the orange-throated whiptail and the golden eagle, were not observed in the BSA, but are considered to have a high potential to occur or forage in the BSA.

Because of the sensitivity of the burrowing owl, and this part of Otay Mesa supporting one of the last breeding populations of the species left in the County (Unitt 2004), focused surveys for the burrowing owl were conducted in the BSA six times from 2000 to 2009. Burrowing owls were observed during all of the surveys, and often during other focused species surveys (e.g., for the federally listed Quino checkerspot butterfly; *Euphydryas editha quino*).

Since all of the species observations were made at single points in time (with the exception of the burrowing owl), these animals are mobile, and the majority of the habitat (i.e., non-native grassland) in the eastern portion of the R/W is suitable for them (with the possible exception of the two-striped garter snake and the yellow warbler), each has potential to be impacted by all build alternatives because of the extent of their habitat that would be lost. The two-striped garter snake is generally found around pools or other water sources that are limited in the BSA, so it is not likely that it would be affected. The yellow warbler was observed during migration; there is no yellow warbler breeding habitat (riparian woodland dominated by willows, cottonwood [*Populus fremontii*], etc.) in the BSA. The yellow warbler would not be impacted by the proposed project. The burrowing owl would be impacted by the Preferred Alternative and all Draft EIR/EIS build alternatives as follows in the discussion below.

Burrowing Owl

The Preferred Alternative would directly impact nine locations (a multi-year total) of burrowing owl (Figures 3.21-1a, 3.21-1c, and 3.21-1d). The Two Interchange and No Interchange alternatives would directly impact 12 locations (a multi-year total) of burrowing owl (Figures 3.21-1a, 3.21-1c, and 3.21-1d). The One Interchange Alternative would directly impact 14 locations (a multi-year total) of burrowing owl (Figures 3.21-1a, 3.21-1c, and 3.21-1d). No additional locations would be impacted by any of the variations on the Draft EIR/EIS build alternatives. The USFWS expressed primary concern for the burrowing owl in 2008 in its NOI comment letter (see Chapter 5).

Golden Eagle

Because golden eagles (*Aquila chrysaetos*) tend to nest on cliff ledges or steep slopes, they are not expected to nest within several miles of the BSA. Therefore, the project would not impact nesting habitat. However, the project may impact up to 199.4 acres of non-native grassland habitat, which potentially provides foraging habitat for the golden eagle (i.e., if the Two Interchange Alternative with the Siempre Viva Road Full Interchange Variation were selected; the Preferred Alternative would impact up to 171.9 acres of non-native grassland).

No Build Alternative

Under the No Build Alternative, the described development actions for the build alternatives and variations would not occur, and no associated impacts to sensitive animal species would result.

3.22.4 Avoidance, Minimization, and/or Mitigation Measures

The following describes avoidance, minimization and/or mitigation measures for non-listed but special status species impacts, including the burrowing owl.

Preferred Alternative and Draft EIR/EIS Build Alternatives and Variations

All Non-listed Special Status Animal Species

Avoidance and Minimization Efforts. All brushing, grading, and clearing of vegetation would take place between September 1 and January 31, which is outside of the bird breeding season, to avoid impacting nesting birds and violating the MBTA. If construction activities occur during the breeding season, a pre-construction survey would be conducted to ensure that no nesting birds are present within the proposed work area. Should a nest site be located, then appropriate measures may include (but are not limited to) monitoring during grading and construction to ensure no impacts to the nest site, designating the location as an environmentally sensitive area, and delaying or restricting project activities until nesting and fledging is complete.

Proposed Mitigation. Impacts to non-listed, special status animal species would be offset by the proposed compensatory mitigation for non-native grassland impacts (see Section 3.19.4). These species would also benefit from the proposed preservation of other habitats (e.g., Diegan coastal sage scrub) as well as the restoration and enhancement of vernal pool habitat on the Lonestar Ridge West parcel (or equivalent mitigation parcel; see Section 3.19.4).

Burrowing Owl and Golden Eagle

Avoidance and Minimization Efforts. For burrowing owls, a pre-construction survey to identify active burrows within the R/W and 250 feet beyond the R/W (where potential burrows could be) would be conducted no more than 30 days prior to initiation of construction. To minimize impacts to nesting burrowing owls, no disturbance would occur within 250 feet of any active burrow (including to any that occur outside the R/W) during the burrowing owl breeding season (February 1 through August 31) or until a qualified biologist determines that a burrow is no longer active. For each active burrow to be directly impacted outside the burrowing owl breeding season, a qualified biologist would implement passive relocation measures (installation of one-way doors) in accordance with CDFG regulations (CDFG 1995). Once all owls have vacated the burrows (after approximately 48 hours), a qualified biologist would oversee the excavation and filling of the burrows. No golden eagle nests are located in the BSA, so no such avoidance and minimization measures are required.

Proposed Mitigation. Impacts to burrowing owls and golden eagles are proposed to be mitigated through preservation of up to 203 acres of upland habitat (i.e., if the Two Interchange Alternative with the Siempre Viva Road Full Interchange Variation is selected; see Table 3.19-2; impacts of the Preferred Alternative would be mitigated through preservation of up to 175.5 acres of upland habitat). The preservation would occur on the Lonestar parcels (or equivalent mitigation parcels; see Section 3.19.4). It is acknowledged that the Lonestar parcels support approximately 173 acres of non-native grassland, and that additional grassland may be required. Caltrans will consult with the resource agencies to devise an acceptable strategy to compensate for any shortage in the required mitigation. The Lonestar parcels are within the potential foraging area for the golden eagle pair at O'Neal Canyon and the habitat value for foraging would be improved with the proposed restoration efforts.

To ensure suitable burrow opportunities are present for burrowing owls, artificial burrows would be created in the preserved grassland at the Lonestar Ridge West mitigation parcel at a 5:1 ratio for each burrow impacted (for a total of up to 45 artificial burrows, as well as natural mounds that could provide burrow habitat). Approximately 50 artificial burrows also would be constructed and installed at Lonestar Ridge West prior to the passive relocation. A total of 25 artificial burrows composed of wood boxes with wood tunnels and 25 artificial burrows composed of plastic boxes with corrugated plastic drainage pipe tunnels would be installed. The boxes and tunnels would be buried and covered with at least 12 inches of soil to provide long-term cover and sound insulation. Each artificial owl nest box would be installed with a one inch-diameter observation tube for future research purposes. Approximately 154 mima mounds installed at Lonestar Ridge West would consist of soil and vegetated matter. These natural mima mounds would provide potential habitat for California ground squirrels (*Spermophilus beecheyi*), which have been observed at Lonestar Ridge West during 2010 site surveys, to create burrows in the mounds that may be occupied by burrowing owls in the future. A mitigation plan that: (1) describes the off-site preservation of burrowing owl habitat; (2) identifies the methods for artificial burrow and natural mound creation; and (3) outlines burrow and habitat maintenance requirements, burrow monitoring requirements, and reporting requirements would be prepared and submitted to CDFG for approval prior to grading of the SR-11/POE project site.

With implementation of the avoidance measures described above, the proposed project would not impact nesting birds and, therefore, would not violate the MBTA, so mitigation would not be required.

No Build Alternative

No impacts were identified for the No Build Alternative. No project action would occur under the No Build Alternative; therefore, no associated avoidance, minimization or mitigation measures would be required.

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3.23 THREATENED AND ENDANGERED SPECIES

This section addresses threatened and endangered plant and animal species and critical habitat present in the BSA. Caltrans is required to determine if a proposed project would involve and possibly affect species that are formally listed or proposed to be listed under the FESA or CESA, or the critical habitat of such species.

3.23.1 Regulatory Setting

The primary federal law protecting threatened and endangered species is the FESA: 16 USC Section 1531 et seq. See also 50 CFR Part 402. This act and subsequent amendments provide for the conservation of endangered and threatened species and the ecosystems upon which they depend. Under Section 7 of this act, federal agencies, such as the FHWA, are required to consult with the USFWS and NOAA's National Marine Fisheries Service to ensure that they are not undertaking, funding, permitting or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat is defined as geographic locations critical to the existence of a threatened or endangered species. The outcome of consultation under Section 7 is a Biological Opinion or an incidental take permit. Section 3 of FESA defines take as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or any attempt at such conduct."

California has enacted a similar law at the state level, the CESA, California Fish and Game Code Section 2050 et seq. CESA emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate planning to offset project caused losses of listed species populations and their essential habitats. The CDFG is the agency responsible for implementing CESA. Section 2081 of the Fish and Game Code prohibits "take" of any species determined to be an endangered species or a threatened species. Take is defined in Section 86 of the Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." CESA allows for take incidental to otherwise lawful development projects; for these actions an incidental take permit is issued by CDFG. For species listed under both FESA and CESA requiring a Biological Opinion under Section 7 of the FESA, CDFG may also authorize impacts to CESA species by issuing a Consistency Determination under Section 2080.1 of the Fish and Game Code.

Another federal law, the Magnuson-Stevens Fishery Conservation and Management Act of 1976, was established to conserve and manage fishery resources found off the coast, as well as anadromous species and Continental Shelf fishery resources of the United States, by exercising (a) sovereign rights for the purposes of exploring, exploiting, conserving, and managing all fish within the exclusive economic zone established by Presidential Proclamation 5030, dated March 10, 1983, and (b) exclusive fishery management authority beyond the exclusive economic zone over such anadromous species, Continental Shelf fishery resources, and fishery resources in special areas.

3.23.2 Affected Environment

The NES for the proposed project (HELIX 2010d) describes the results of focused surveys that were performed in the BSA for listed species. A compilation of all special status species data collected during all surveys for the proposed project is included on Figures 3.21-1a through 3.21-1d, *Special Status Species/Impacts*. The compiled data were adjusted to eliminate multiple observations (from different years) of the same special status species from the same locations so as not to over-report their presence. Subsequent to identification of the Preferred Alternative, an NES Addendum (HELIX 2011) was prepared to document specific impacts of the Preferred Alternative, all of which are encompassed within the BSA addressed in the NES for the Draft EIR/EIS.

The need for focused surveys for listed species was determined based on knowledge of species occurrences in the BSA from previous surveys and a habitat-based analysis, and from an October 2006 mandatory species list letter from the USFWS (Appendix B in the NES). In October 2008, Caltrans sent a request for an updated species list, and the USFWS replied on November 7, 2008 that the October 6, 2006 letter should continue to be used for the proposed project. On October 20, 2010, the USFWS reiterated that the list is still valid.

The USFWS letter identified the following federally listed species as having potential to occur in the BSA: San Diego thornmint (*Acanthomintha ilicifolia*), Otay tarplant (*Deinandra conjugens*), San Diego button-celery (*Eryngium aristulatum* var. *parishii*), willow monardella (*Monardella viminea*), and Otay mesa mint (*Pogogyne abramsii*); San Diego fairy shrimp (*Branchinecta sandiegonensis*), Riverside fairy shrimp (*Streptocephalus woottoni*), and Quino checkerspot butterfly; arroyo toad (*Bufo* [proposed *Anaxyrus*] *californicus*); and coastal California gnatcatcher (*Poliophtila californica californica*), least Bell's vireo (*Vireo bellii pusillus*), and southwestern willow flycatcher (*Empidonax traillii eximius*).

Table 3.23-1, *Listed Species and Critical Habitat Potentially Occurring or Known to Occur in the BSA*, presents listed species and critical habitat for the BSA. Focused surveys were conducted for all of the plant species, San Diego and Riverside fairy shrimp, Quino checkerspot butterfly, and coastal California gnatcatcher, as described in Section 2.2 and Appendix C of the NES. Protocol survey reports were prepared and submitted to the USFWS following each of the surveys and are referenced in Section 2.2 and Chapter 6.0 of the NES. Although the least Bell's vireo, southwestern willow flycatcher, and arroyo toad were included in the USFWS letter, appropriate habitat for each of these species is not present in the BSA, so focused surveys for them were not conducted.

Table 3.23-1 LISTED SPECIES AND CRITICAL HABITAT POTENTIALLY OCCURRING OR KNOWN TO OCCUR IN THE BSA					
Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/Absent	Rationale*
San Diego thornmint	<i>Acantho-mintha ilicifolia</i>	FT, SE, CNPS List 1B.1, MSCP Narrow Endemic, County Sensitive	Chaparral, sage scrub, valley/foothill grassland, and in the vicinity of vernal pools on clay soil	HP	Potential habitat present
Otay tarplant	<i>Deinandra conjugens</i>	FT, SE, CNPS List 1B.1, MSCP Narrow Endemic, County Sensitive	Clay soils in grasslands or open sage scrub	HP	Detected more than 500 ft north of the BSA (prior to 2006)
San Diego button-celery	<i>Eryngium aristulatum</i> var. <i>parishii</i>	FE, SE, CNPS List 1B.1, County Sensitive	Vernal pools	HP, P	Detected (2006)

Table 3.23-1 (cont.) LISTED SPECIES AND CRITICAL HABITAT POTENTIALLY OCCURRING OR KNOWN TO OCCUR IN THE BSA					
Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/Absent	Rationale*
Willow monardella	<i>Monardella viminea</i>	FE, SE, CNPS List 1B.1, MSCP Narrow Endemic, County Sensitive	Rocky washes in chaparral, sage scrub, and riparian communities; known from only three locations in San Diego County, all in the Miramar area	HP	Potential habitat present
Spreading navarretia	<i>Navarretia fossalis</i>	FT, CNPS List 1B.1, County Sensitive	Chenopod scrub, marshes, swamps, playas, vernal pools	HP, P	Detected (2009)
California orcutt grass	<i>Orcuttia californica</i>	FE, SE, CNPS List 1B.1, County Sensitive	Vernal pools	HP	Potential habitat present
Otay mesa mint	<i>Pogogyne nudiuscula</i>	FE, SE, CNPS List 1B.1, County Sensitive	Vernal pools	HP	Potential habitat present
San Diego fairy shrimp	<i>Branchinecta sandiegonensis</i>	FE, MSCP Narrow Endemic, County Sensitive	Vernal pools or other water-holding basins	HP, P, CH	Detected in one basin and freshwater marsh in the BSA (prior to 2006) and in the vernal pool in the BSA (2009)
Riverside fairy shrimp	<i>Streptocephalus woottoni</i>	FE, MSCP Narrow Endemic, County Sensitive	Vernal pools or other water-holding basins	HP, P	Detected in one basin in the BSA (2009)
Quino checkerspot butterfly	<i>Euphydryas editha quino</i>	FE, MSCP Narrow Endemic, County Sensitive	Primary larval host plants in San Diego are dwarf plantain at lower elevations, woolly plantain (<i>P. patagonica</i>) and white snapdragon (<i>Antirrhinum coulterianum</i>) at higher elevations; owl's clover is considered a secondary host plant if primary host plants have senesced; potential habitat includes vegetation communities with areas of low-growing and sparse vegetation; these habitats include open stands of sage scrub and chaparral, adjacent open meadows, old foot trails, and dirt roads	HP, P, CH	Detected (prior to 2006)

Table 3.23-1 (cont.) LISTED SPECIES AND CRITICAL HABITAT POTENTIALLY OCCURRING OR KNOWN TO OCCUR IN THE BSA					
Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/Absent	Rationale*
Arroyo toad	<i>Bufo</i> (proposed by the USFWS to be changed to <i>Anaxyrus californicus</i>)	FE, SSC, MSCP Narrow Endemic, County Sensitive	Restricted to riparian environments in the middle reaches of streams; known to breed, forage, and/or aestivate in aquatic, riparian, coastal sage scrub, oak, and chaparral habitats; thought to be restricted to the headwaters of large streams with persistent water from March to mid-June that have shallow, gravelly pools and adjacent sandy terraces	A	No habitat present; no further work needed
Southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	FE, SE, MSCP Narrow Endemic, County Sensitive	Restricted to riparian woodlands along streams and rivers with mature, dense stands of willows, cottonwoods (<i>Populus</i> spp.) or smaller, spring fed or boggy areas with willows or alders (<i>Alnus</i> spp.)	A	No habitat present; no further work needed
Coastal California gnatcatcher	<i>Poliophtila californica californica</i>	FT, SSC, County Sensitive	Coastal sage scrub	HP	Detected 1,125 ft north of the BSA (2006)
Least Bell's vireo	<i>Vireo bellii pusillus</i>	FE, SE, MSCP Narrow Endemic, County Sensitive	Riparian habitats that feature dense vegetative cover near the ground and a dense, stratified canopy; typically, it is associated with southern willow scrub, cottonwood forest, mule fat scrub, sycamore alluvial woodland, coast live oak riparian forest, arroyo willow riparian forest, wild blackberry, or mesquite in desert localities	A	No habitat present; no further work needed

For the year detected, the most current year of detection is provided.

Absent [A] - no habitat present and no further work needed. Habitat Present [HP] -habitat is, or may be present. The species may be present. Present [P] - the species is present. Critical Habitat [CH] - BSA is located within a designated critical habitat unit, but does not necessarily mean that appropriate habitat is present. Status: Federal Endangered (FE); Federal Threatened (FT); State Endangered (SE); State Threatened (ST); Fully Protected (FP); State Species of Special Concern (SSC); California Native Plant Society (CNPS). See Appendix F of the NES for more status code information.

Federal Endangered Species Act Consultation Summary

Due to the involvement of a number of federal agencies on this proposed project (including [1] the FHWA through funding and review of the proposed project; [2] the USFWS due to the observation of listed species in the BSA; and [3] the USACE due to the occurrence of USACE jurisdiction in the BSA

[see Section 3.20]), consultation with USFWS pursuant to Section 7 of the FESA was necessary. The Section 7 consultation was formal because the BSA contains federally listed species and critical habitat, and the proposed project would impact these resources (see Section 3.23.3). As discussed in Section 3.20, the USACE provided a comment letter dated October 23, 2009 on the purpose and need statement and project alternatives as part of the ongoing consultation process. Chapter 5.0 describes correspondence with the resource agencies during the consultation process to date. The Biological Assessment was submitted to USFWS in June 2011 and a Biological Opinion addressing the Preferred Alternative was issued on November 23, 2011 (see Appendix R).

California Endangered Species Act Consultation Summary

Diegan coastal sage scrub is a target community under the NCCP. While this community is present in the BSA, it would not be impacted by the Preferred Alternative or any of the other build alternatives, so consultation with the CDFG would not be required. One state-listed species (San Diego button-celery) was observed in the BSA; however, it would not be impacted by any of the build alternatives, so there would be no take authorization necessary under Section 2081 of the CESA. CDFG is a Participating Agency in this project environmental process that noted in their acceptance letter dated December 4, 2008 that they “will participate as needed to ensure that potential impacts to resources under our purview are avoided or reduced to the maximum extent possible.”

Plant Species

Two listed plant species, San Diego button-celery and spreading navarretia, were observed in association with the vernal pool in the eastern portion of the BSA (Figure 3.21-1c). Five individuals of San Diego button-celery were observed in 2006, and three individuals of spreading navarretia were observed in 2009. No critical habitat for listed plant species occurs in the BSA.

San Diego button-celery is federally and state listed endangered and is a CNPS List 1B.1 species (rare, threatened, and endangered in California and elsewhere/seriously endangered in California). It occurs in association with vernal pools in Riverside and San Diego counties and Baja California, Mexico.

Spreading navarretia is federally listed threatened and is a CNPS List 1B.1 species (rare, threatened, and endangered in California and elsewhere/seriously endangered in California). It occurs in chenopod scrub, marshes, swamps, playas, and vernal pools in Los Angeles, Riverside, San Diego, and San Luis Obispo counties and Baja California, Mexico.

Animal Species

Three listed animal species were observed in the eastern portion of the BSA: San Diego fairy shrimp, Riverside fairy shrimp, and Quino checkerspot butterfly (Figures 3.21-1c and 3.21-1d). Critical habitat for the San Diego fairy shrimp and Quino checkerspot butterfly occurs in the eastern portion of the BSA (Figure 3.23-1, *Critical Habitat/Impacts*). No other listed species critical habitat occurs in the BSA.

San Diego fairy shrimp is federally listed endangered and occurs in vernal pools or other water-holding basins often in patches of grassland and agriculture interspersed in coastal sage scrub and chaparral in San Diego County and extreme northern Baja California, Mexico. San Diego fairy shrimp were detected in one basin and in freshwater marsh in the BSA prior to 2006 and in the vernal pool in the BSA in 2009 (Figures 3.21-1c and 3.21-1d).

Riverside fairy shrimp is federally listed endangered and typically occurs in vernal pools or other water-holding basins that are at least 30 centimeters deep (Simovich 1990). It is currently known from only

five vernal pools in western Riverside County in the vicinity of Temecula and Rancho California (Eng et al. 1990); two locations in Orange County; 20 to 30 pools on Otay Mesa and at least one pool on Miramar in San Diego County; and one pool at an undisclosed location in northern Baja California, Mexico. Riverside fairy shrimp were detected in one basin in the BSA in 2009 (Figure 3.21-1c).

The Quino checkerspot butterfly is federally listed endangered, and potential habitat for the species includes vegetation communities with areas of low-growing and sparse vegetation with appropriate host and nectar plants (see Table 3.23-1 for more information). Populations of the Quino checkerspot butterflies are known to exist only as several, probably isolated, colonies in southwestern Riverside County, southern San Diego County, and northern Baja California, Mexico. The San Diego populations are mainly limited to areas of Otay Mountain, Brown Field, sections of Otay Mesa, Jamul, Marron Valley, and Jacumba. The Quino checkerspot butterfly was detected in three locations in the BSA prior to 2006 (Figure 3.21-1c). It was not found during focused surveys in 2006 and 2009.

3.23.3 Environmental Consequences

Preferred Alternative and Draft EIR/EIS Build Alternatives and Variations

The following analysis of potential impacts to listed species addresses the Preferred Alternative and the Draft EIR/EIS build alternatives with or without the associated design variations.

Direct, permanent impacts to Quino checkerspot butterfly would result from replacement of their locations and potential habitats with paved roadways, cut and fill slopes, drainage features, retaining walls, and all POE/CVEF facilities (Figures 3.21-1a through 3.21-1d).

San Diego Button-Celery and Spreading Navarretia

San Diego button-celery and spreading navarretia were observed in the vernal pool in the BSA (Figure 3.21-1c).

The proposed western edge of the POE was shifted to the east to avoid impacts to the vernal pool that supports San Diego button-celery and spreading navarretia. Therefore, construction and implementation of any of the build alternatives would not impact San Diego button celery or spreading navarretia.

Spreading navarretia critical habitat does not occur in the Preferred Alternative footprint, but does occur in the Lonestar mitigation parcels. No spreading navarretia was observed on site at Lonestar, but proposed mitigation at this location includes planting this species as enhancement. Success criteria for the vernal pool restoration effort also require that 54 pools support San Diego button-celery.

San Diego Fairy Shrimp

San Diego fairy shrimp was detected in one basin and in freshwater marsh in the BSA prior to 2006 and in the vernal pool in the BSA in 2009 (Figures 3.21-1c and 3.21-1d). No impacts would occur to the basin and vernal pool (or their watersheds) or freshwater marsh that support San Diego fairy shrimp, because these species' locations occur outside the R/W (Figures 3.21-1c and 3.21-1d), and the project would not affect the watersheds for these three locations.

Critical habitat for the San Diego fairy shrimp occurs across the eastern portion of the BSA, although actual habitat that currently supports the San Diego fairy shrimp is a fraction of this area. No avoidance or minimization efforts were determined feasible for San Diego fairy shrimp critical habitat, because of its location within the necessary R/W. The Preferred Alternative would impact approximately 89.1 acres of

final designated critical habitat for the San Diego fairy shrimp. Each of the Draft EIR/EIS build alternatives would impact 101.7 acres of San Diego fairy shrimp critical habitat; an additional 0.5 acre of critical habitat would be impacted under the Siempre Viva Full Interchange Variation of the Two Interchange Alternative (Figure 3.23-1). The USFWS determined in its final rule for San Diego fairy shrimp critical habitat designation (72 FR 70647, 70714, December 12, 2007) that the San Diego fairy shrimp's primary constituent elements (PCE) are: (1) vernal pools with shallow to moderate depths (2 inches to 12 inches) that hold water for sufficient lengths of time (7 to 60 days) necessary for incubation, maturation, and reproduction of the San Diego fairy shrimp, in all but the driest years; (2) topographic features characterized by mounds and swales and depressions within a matrix of surrounding uplands that result in complexes of continuously, or intermittently, flowing surface water in the swales connecting the pools described in PCE 1, providing for dispersal and promoting hydroperiods of adequate length in the pools (i.e., the vernal pool watershed); and (3) flat to gently sloping topography, and any soil type with a clay component and/or an impermeable surface or subsurface layer known to support vernal pool habitat (including Carlsbad, Chesterton, Diablo, Huerhuero, Linne, Olivenhain, Placentia, Redding, and Stockpen soils). The San Diego fairy shrimp critical habitat impact area for the Preferred Alternative currently supports approximately 83.3 acres of non-native grassland, 0.1 acre of tamarisk scrub, 5.5 acres of disturbed habitat, and 0.3 acre of developed land. No basins with fairy shrimp or vernal pools have been identified within this impact area. Although the area does contain the identified PCE soils, as much as 45 percent of the impact area is too steep to support vernal pools.

Impacts to as many as 14 pools containing San Diego fairy shrimp are anticipated at Lonestar Ridge West as the result of grading to enhance the site beginning in the summer of 2012. The mitigation work would also affect up to 155.4 acres of critical habitat. This work is not likely to adversely affect critical habitat over the long-term, however as it will enhance habitat for San Diego fairy shrimp by the creation and enhancement of vernal pools and removal of exotic vegetation. The entire Lonestar Ridge West restoration site was mowed and dethatched starting in the summer of 2011 to remove exotic weed materials (thatch and seeds) while avoiding impacts to San Diego fairy shrimp and other sensitive native species.

Riverside Fairy Shrimp

Riverside fairy shrimp were detected in one basin in the BSA in 2009 (Figure 3.21-1c). The basin within which this species occurs (and the basin's watershed) occur completely outside the R/W, and would not be directly impacted by the project. Riverside fairy shrimp also were found in the stockpond at the Lonestar Ridge West biological mitigation parcel. As noted above, the Lonestar Ridge West restoration site was mowed and dethatched starting in the summer of 2011 to remove exotic weed materials (thatch and seeds) while avoiding impacts to Riverside fairy shrimp and other sensitive native species.

Quino Checkerspot Butterfly

The Quino checkerspot butterfly was detected in three locations in the BSA prior to 2006 (Figure 3.21-1c). All three of these locations would be directly impacted by the Preferred Alternative and each of the Draft EIR/EIS build alternatives (Figure 3.21-1c). Additionally, each of the Draft EIR/EIS build alternatives would directly impact 4.2 acres of Quino checkerspot butterfly critical habitat (Figure 3.23-1). By moving the eastern POE boundary to the west relative to the Draft EIR/EIS build alternatives, the Preferred Alternative would avoid these impacts to the Quino checkerspot butterfly critical habitat.

Noise Impacts to Sensitive Species

In 1991, the USFWS recommended that noise levels not exceed 60 dBA to protect the coastal California gnatcatcher and other special status bird species. The only noise-sensitive listed species in the area is the coastal California gnatcatcher, but the nearest identified gnatcatchers are located over 1,000 feet from the BSA. Project-related noise generated by construction or operational activities would be attenuated over this distance to below a level of significance. Potential gnatcatcher habitat (coastal sage scrub) is present, adjacent to the eastern edge of the proposed POE, but no gnatcatchers have been observed there during multiple biological surveys conducted between 2001 and 2009. Therefore, no noise impacts to special status bird species would result from project implementation.

No Build Alternative

Under the No Build Alternative, the described development actions for the build alternatives and variations would not occur, and no associated impacts to threatened and endangered species would result.

3.23.4 Avoidance, Minimization, and/or Mitigation Measures

As described in Section 3.19.4, a Final PEIR/PEIS was published for the SR-11 and Otay Mesa East POE that identified the preferred location for the proposed project as the Western Alternative that would avoid some impacts that would have occurred if the proposed project were to be constructed within the Central or Eastern alternative areas. This section describes additional efforts that would be implemented to avoid or minimize impacts to threatened and endangered species. Where impacts could not be avoided or minimized, this section describes the mitigation proposed to compensate for those impacts.

During construction of the proposed project, construction BMPs, installation of construction fencing, and monitoring construction limits would be conducted to avoid and/or minimize direct impacts to threatened and endangered species outside the proposed project impacts and R/W (refer to ECR in Appendix N for details).

BMPs employed during construction would follow the applicable Caltrans guidelines and be detailed in the project's SWMP, SWPPP, and WPCP. Specific plans would be reviewed by a biologist and modified, if necessary, prior to implementation. The biologist would have the ability to suggest changes to reduce the possibility of erosion/siltation or spills of chemicals and fuels that could potentially affect sensitive habitat areas, including (but not limited to) vernal pool basins and their watersheds.

Preferred Alternative and Draft EIR/EIS Build Alternatives and Variations

San Diego Fairy Shrimp and Riverside Fairy Shrimp

Avoidance and Minimization Efforts. The proposed western edge of the POE was shifted to the east in designing the Preferred Alternative to avoid direct impacts to the vernal pool (and its watershed) that supports San Diego fairy shrimp.

Vernal pools, located outside the alignment footprint, would be designated ESAs and depicted as such on project maps. No personnel or equipment would be allowed within these areas at any time. Pools and watersheds may be marked and protected by temporary fencing (e.g., orange plastic snow fencing) or another appropriate method to prevent encroachment or unnecessary disturbance to the sites. Prior to and during construction, barriers would be established in key areas to deter public entry into the site. In addition, fencing would be provided to restrict access to sensitive habitat adjoining the work limits.

Caltrans would implement avoidance and minimization measures to protect San Diego and Riverside fairy shrimp at Lonestar Ridge West, including avoiding work during the wet season and avoiding driving and trenching through the pools during weeding of the site.

No avoidance or minimization efforts were determined feasible for impacts to critical habitat for the San Diego fairy shrimp because of its location within the necessary R/W, so mitigation is proposed for this impact as described below.

Proposed Mitigation. Proposed compensatory mitigation for direct impacts to 89.1 acres under the Preferred Alternative (101.7 acres under the Draft EIR/EIS Build Alternatives) of San Diego fairy shrimp critical habitat (Figure 3.23-1) is through preservation of San Diego fairy shrimp critical habitat on the western Lonestar parcel (or equivalent mitigation parcel; see Section 3.19.4 and Figure 3.23-1). The western Lonestar parcel contains approximately 155 acres of San Diego fairy shrimp critical habitat. The mitigation proposed would permanently preserve San Diego fairy shrimp critical habitat that otherwise could be developed, and this critical habitat contains substantially more San Diego fairy shrimp and San Diego fairy shrimp habitat with higher functionality and more constituent elements than the critical habitat impacted. The final mitigation for critical habitat impacts associated with the Preferred Alternative has been approved through the Section 7 consultation with the USFWS. Caltrans submitted a Biological Assessment to FHWA for review in April 2011. After review, FHWA submitted the Biological Assessment to USFWS in June 2011. A Biological Opinion was issued by USFWS on November 23, 2011.

Approximately 3.6 acres of vernal pools (111 basins) would be created/restored at Lonestar Ridge West to provide additional San Diego fairy shrimp habitat and 14 existing vernal pool basins (totaling approximately 0.6 acre) would be enhanced. All enhancement activities in the pools occupied by listed vernal pool species that require soil manipulation (e.g., removal/recontouring of tire ruts or road fills, recontouring of pool slopes) would be done by hand and/or small machinery. Topsoil would only be salvaged from the portions of the pools subject to soil movement. Additional inoculum from off-site donor vernal pools in the Otay Mesa area may be used to supplement the inoculum collected at the project impact site, with approval of the USFWS and USACE. Inoculum and planting would not be installed until the USFWS and USACE approve the habitat restoration site through evidence of ponding. The basins would be surrounded by approximately 27.3 acres of watershed and upland that would be restored to support the vernal pool basins.

A final mitigation and monitoring plan was submitted to the resource agencies on February 3, 2012, outlining a planting scheme, site preparation, an exotics control program, irrigation, grading requirements, and success criteria. A two-year plant establishment period, and three-year habitat management and monitoring program would be implemented at Lonestar Ridge West. Success criteria include the establishment of 1.30 acres and 0.22 acre of basin area that would support San Diego fairy shrimp and Riverside fairy shrimp, respectively.

Quino Checkerspot Butterfly

Avoidance and Minimization Efforts. FHWA's selection of the Western Alternative in its Phase I ROD (FHWA 2008) eliminated most impacts to Quino checkerspot butterfly critical habitat, as well as impacts to its potential Diegan coastal sage scrub habitat that otherwise could have occurred (see Section 3.19.4). For the Preferred Alternative and the Draft EIR/EIS build alternatives, no further avoidance or minimization efforts were determined feasible for the Quino checkerspot butterfly because of its locations (based on observations prior to 2006). The Preferred Alternative would avoid the direct impacts to 4.2 acres of critical habitat that would be impacted by the POE design that was addressed for the Draft EIR/EIS build alternatives.

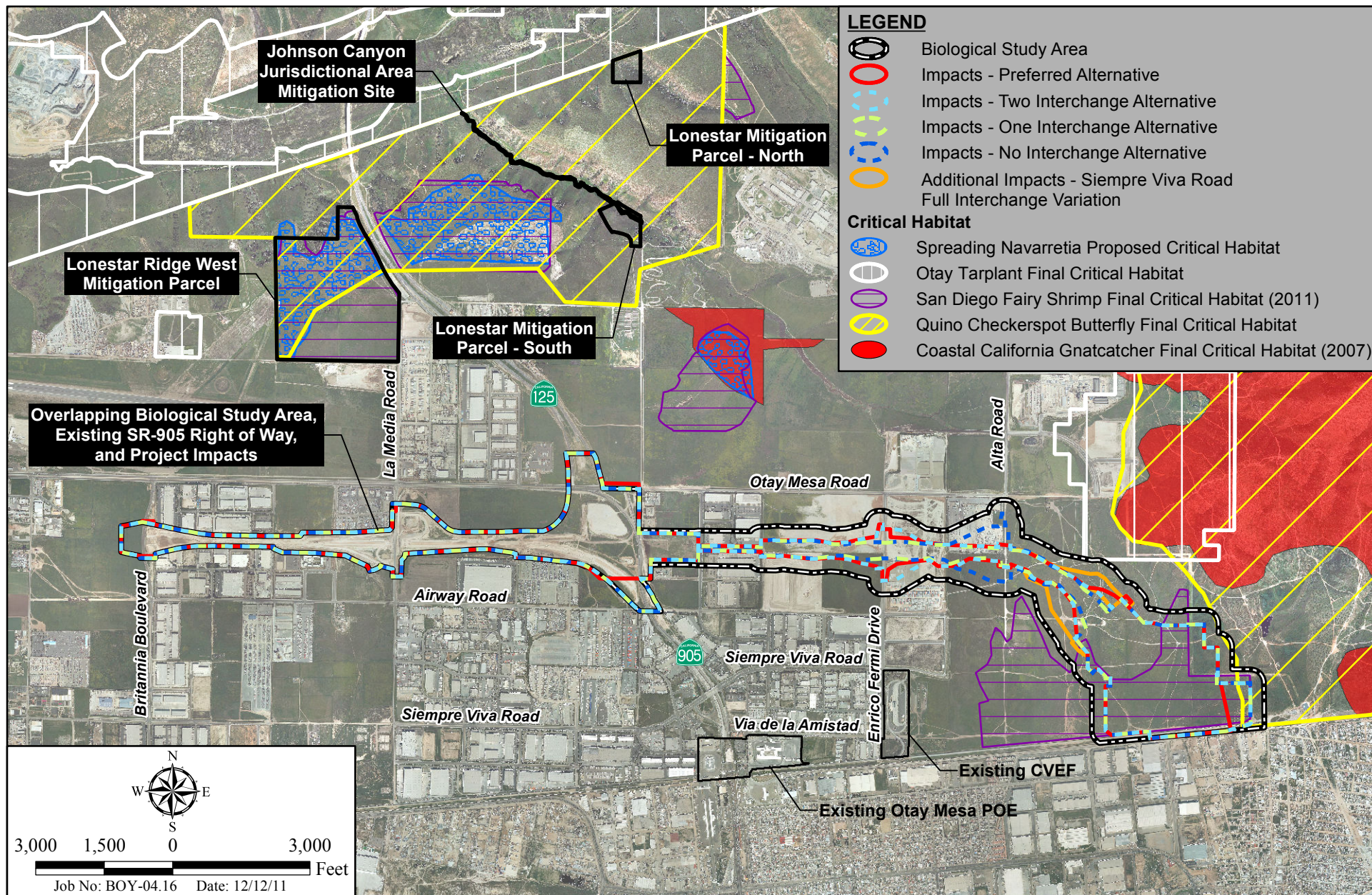
Proposed Mitigation. Because of the low quality of the Quino checkerspot butterfly habitat to be impacted, the small number of individual Quino checkerspot butterfly observed, and because no Quino checkerspot butterflies have been observed in recent years, the focus of the mitigation proposed is on preservation and restoration of Quino checkerspot butterfly habitat off site. Therefore, proposed mitigation for the loss of Quino checkerspot butterfly would be through preservation/enhancement of approximately 114 acres of historically occupied Quino checkerspot butterfly habitat on the Lonestar parcels and Johnson Canyon site, or equivalent mitigation parcels (see Section 3.19.4). Appropriate larval host species and nectar species would be incorporated into the seed palette that would be utilized on the parcels. Specifically, a minimum of 17 focused planting areas that are dominated by Quino checkerspot butterfly host and nectar resource plants would be established within 87 acres of critical habitat on the Lonestar Ridge West parcel. The mitigation plan, outlining the details of the entire upland revegetation effort (e.g., plant and soil salvaging, site preparation, success criteria, monitoring requirements), would be prepared and submitted to the appropriate resource agencies for review.

The Preferred Alternative would avoid impacts to Quino checkerspot butterfly critical habitat and therefore would not require mitigation.

If any of the Draft EIR/EIS alternatives were selected, proposed mitigation for the direct impact of the Draft EIR/EIS build alternatives to 4.2 acres of Quino checkerspot butterfly critical habitat (Figure 3.23-1) would be through preservation of Quino checkerspot butterfly critical habitat on the Lonestar and Johnson Canyon parcels, or equivalent mitigation parcels (see Section 3.19.4 and Figure 3.23-1). Potential habitat for the Quino, as well as dwarf plantain and owl's clover (host plants), are present on the Lonestar parcels. If any of the Draft EIR/EIS build alternatives were selected, the final mitigation for critical habitat impacts would be negotiated during a subsequent Section 7 consultation with the USFWS (as the completed Section 7 consultation addressed the Preferred Alternative).

No Build Alternative

No impacts were identified for the No Build Alternative. No project action would occur under the No Build Alternative; therefore, no associated avoidance, minimization or mitigation measures are required.



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Critical Habitat/Impacts

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

Figure 3.23-1

3.24 INVASIVE SPECIES

This section addresses invasive species, which are not considered sensitive by any regulating agency but that can cause economic or environmental harm, or harm to human health.

3.24.1 Regulatory Setting

On February 3, 1999, President Clinton signed EO 13112 requiring federal agencies to combat the introduction or spread of invasive species in the U.S. The order defines invasive species as “any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health.” FHWA guidance issued August 10, 1999 directs the use of the state’s invasive species list, currently maintained by the California Invasive Species Council – <http://www.iscc.ca.gov/>, to define the invasive plants that must be considered as part of the NEPA analysis for a proposed project.

3.24.2 Affected Environment

Plant Species

Even more inclusive than the state’s noxious weed list (NRCS 2009), the California Invasive Plant Inventory (California Invasive Plant Council 2006) categorizes invasive plant species as high, moderate or limited, reflecting the level of each species’ negative ecological impacts in California. Other factors, such as economic impact or difficulty of management, are not included in the assessment.

The most invasive plant species are categorized as “high” and have severe ecological impacts on physical processes, plant and animal communities and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment, and many have a wide ecological distribution.

Species categorized as “moderate” have substantial and apparent, but generally not severe, ecological impacts on physical processes, plant and animal communities and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, although establishment is generally dependent on ecological disturbance. Ecological amplitude and distribution may range from limited to widespread.

Plants categorized as “limited” are invasive, but their ecological impacts are minor on a statewide level, or there was not enough information to justify a higher category. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic.

An NES was completed for the proposed project that (in its Appendix D) identifies the invasive, non-native plant species that were observed in the BSA and that are included in the California Invasive Plant Inventory Database for the southwest California floristic province (California Invasive Plant Council 2006). There are 37 species from the database present in the BSA as presented in Table 3.24-1, *Invasive or Noxious Plant Species Found in the BSA*. Species that are also on the state’s noxious weed list are also identified in Table 3.24-1. Subsequent to identification of the Preferred Alternative, an NES Addendum (HELIX 2011) was prepared to document specific impacts of the Preferred Alternative, all of which are encompassed within the BSA addressed in the NES for the Draft EIR/EIS.

**Table 3.24-1
INVASIVE OR NOXIOUS PLANT SPECIES FOUND IN THE BSA**

Scientific Name	Common Name	Habitat(s) ¹	California Invasive Plant Inventory Negative Ecological Impact Category ²			NRCS Noxious Weed
			High	Moderate	Limited	
<i>Atriplex semibaccata</i>	Australian saltbush	NNG		X		
<i>Brassica nigra</i>	black mustard	DH, NNG		X		
<i>Brassica rapa</i>	field mustard	NNG			X	
<i>Brassica</i> sp	mustard	MFS-D	Unknown ³			
<i>Bromus diandrus</i>	common ripgut grass	DCSS, DCSS-D, NNG, DH		X		
<i>Bromus hordeaceus</i>	soft chess	NNG			X	
<i>Bromus madritensis</i> ssp. <i>rubens</i>	foxtail chess	DCSS, DCSS-D, NNG, DH	X			
<i>Carduus pycnocephalus</i>	Italian thistle	NNG		X		X
<i>Carpobrotus edulis</i>	hottentot-fig		X			
<i>Centaurea solstitialis</i>	yellow star-thistle		X			X
<i>Chrysanthemum coronarium</i>	garland daisy			X		
<i>Convolvulus arvensis</i>						
<i>Cotula coronopifolia</i>	African brass-buttons	NNG, FWM			X	
<i>Cynara cardunculus</i>	cardoon	NNG		X		X
<i>Erodium cicutarium</i>	red-stem filaree	DH, NNG			X	
<i>Foeniculum vulgare</i>	fennel	DH, DW, NNG	X			
<i>Hirschfeldia incana</i>	perennial mustard	NNG		X		
<i>Hordeum marinum</i> ssp. <i>gussoneanum</i>	Mediterranean barley	DH, NNG		X		
<i>Hypochaeris glabra</i>	smooth cat's-ear	NNG			X	
<i>Lepidium latifolium</i>	peppergrass	NNG	X			X
<i>Lolium multiflorum</i>	Italian ryegrass	NNG		X		
<i>Lythrum hyssopifolium</i>	grass poly				X	
<i>Marrubium vulgare</i>	horehound	NNG			X	
<i>Medicago polymorpha</i>	bur-clover	NNG			X	
<i>Mesembryanthemum crystallinum</i>	crystalline iceplant			X		
<i>Nicotiana glauca</i>	tree tobacco			X		
<i>Oxalis pes-caprae</i>	Bermuda-buttercup	NNG		X		
<i>Phalaris</i> sp.	canary grass	DW	Unknown			
<i>Polypogon monspeliensis</i>	rabbitsfoot grass	DW, DH, NNG, FWM			X	
<i>Raphanus sativus</i>	wild radish	NNG			X	

Table 3.24-1 (cont.)
INVASIVE OR NOXIOUS PLANT SPECIES FOUND IN THE BSA

Scientific Name	Common Name	Habitat(s) ¹	California Invasive Plant Inventory Negative Ecological Impact Category ²			NRCS Noxious Weed
			High	Moderate	Limited	
<i>Rumex crispus</i>	curly dock	DW, TS, FWM			X	
<i>Salsola tragus</i>	Russian thistle	DH, NNG, VP			X	X
<i>Schismus barbatus</i>	Mediterranean grass	DH, NNG			X	
<i>Silybum marianum</i>	milk thistle	NNG			X	
<i>Sisymbrium irio</i>	London rocket			X		
<i>Tamarix ramosissima</i>	French tamarisk		X			
<i>Tamarix</i> sp.	tamarisk	DW, TS, MFS-D	Unknown			
<i>Vulpia myuros</i>	fescue	DCSS, DCSS-D, DH, NNG		X		

¹ Habitat acronyms, where recorded: DCSS=Diegan coastal sage scrub, DCSS-D=Diegan coastal sage scrub-disturbed, DH=disturbed habitat, DW=disturbed wetland, FWM=freshwater marsh, MFS-D=mule fat scrub-disturbed, NNG=non-native grassland, TS=tamarisk shrub, VP=vernal pool.

² From the California Invasive Plant Inventory Database (California Invasive Plant Council 2006).

³ "Unknown" is used when the species was not identified, but at least one species of the genus is in the California Invasive Plant Inventory Database.

Many of the species listed in Table 3.24-1 are present because they invaded following previous site disturbances (possibly grazing, farming, and/or fire). Non-native grassland is the dominant vegetation community in the BSA (approximately 69 percent coverage). Therefore, the greatest cover of invasive plant species present in the BSA is associated with this community. Some of these species include red brome, ripgut grass, Italian ryegrass, and mustard. Additionally, Russian thistle is common in disturbed habitat, which is the second most prevalent vegetation community in the BSA. In wet areas like freshwater marsh, invasive species include such plants as curly dock. Additionally, there are patches of tamarisk scrub in the BSA that are dominated by tamarisk, another invasive species listed in the California Invasive Plant Inventory Database.

Animal Species

Two potentially invasive animal species were observed in the BSA: cabbage white butterfly (*Pieris rapae*) and European starling (*Sturnus vulgaris*). Unlike the California Invasive Plant Inventory and the state's noxious weed list, there is no known inventory for categorizing invasive animal species.

The cabbage white butterfly was observed in non-native grassland in the BSA, and its host and nectar plants include mustard and wild radish (*Raphanus sativus*), both of which are invasive plant species present in the BSA. The locations of European starlings within the BSA were not recorded, but the species is likely to occur within developed land, disturbed habitat, and/or non-native grassland, where it could forage on the ground for its main prey of insects.

3.24.3 Environmental Consequences

Preferred Alternative and Draft EIR/EIS Build Alternatives and Variations

The following analysis of potential impacts due to invasive species addresses the Preferred Alternative and the Draft EIR/EIS build alternatives with or without the associated variations.

Caltrans does not currently use any of the species on the state's noxious weed list for erosion control or landscaping. Therefore, invasive species would not be used in any landscaping needed for the project.

While it is assumed that all invasive plant species present in the R/W would be removed during grading, there is potential for construction activities to result in the spread of invasive plant species from the R/W to new areas with natural communities of concern outside the R/W. If the proposed project caused invasive plant species to colonize new areas, particularly Diegan coastal sage scrub (a natural community of concern), this could impact the federally listed endangered Quino checkerspot butterfly by displacing its larval host plants and adult nectar resources and could also displace special status plant species by shading and/or out-competing the native species.

Construction of the Preferred Alternative or any of the other build alternatives could also result in a localized decrease in the cabbage white butterfly population, a species that is considered a pest on crops such as cabbage, broccoli, and radishes, and in large numbers may be considered invasive primarily due to its potential for economic harm. However, its presence (or absence) would not have a substantial effect on biological resources in the proposed project area.

Construction of the Preferred Alternative or any of the other build alternatives would not be expected to increase or decrease the population of European starlings, an introduced species that is considered invasive because it competes for nest cavities with native birds. The proposed project could eliminate some foraging habitat for European starlings, resulting in a potential population decrease, but at the same

time this species is highly adaptable and can thrive around human settlement. Therefore, the European starling is not expected to have substantial effect on biological resources in the proposed project area.

In summary, any of the build alternatives could impact adjacent natural communities of concern, if construction resulted in the spread of existing invasive plant species outside the R/W. No substantial impacts would be associated with invasive animal species.

No Build Alternative

Under the No Build Alternative, the described development actions for the build alternatives and variations would not occur, and no associated impacts from invasive species would result.

3.24.4 Avoidance, Minimization, and/or Mitigation Measures

Preferred Alternative and Draft EIR/EIS Build Alternatives and Variations

Avoidance and Minimization Efforts

In compliance with EO 13112 on invasive species and subsequent guidance from the FHWA, the landscaping and erosion control included for the proposed project would not use species on the state's noxious weed list (NRCS 2009) or species listed as invasive in the California Invasive Plant Inventory Database (California Invasive Plant Council 2006).

Inspection of construction areas would be made by a biological monitor for invasive species according to a prescribed schedule during construction. A typical schedule would involve weekly inspections after the first rains, and throughout the rainy season of the construction period. Outside the rainy season, inspection for invasive species would occur monthly.

Soils that may contain invasive plant species seeds would not be stockpiled where wind or water could transport the material/seeds to natural communities of concern. Soils that may contain invasive plant species seeds also would not be transported in such a manner that the seeds could spread natural communities of concern.

Proposed Mitigation

Precautions would be required to prevent the spread of invasive species into new areas, including the cleaning of construction equipment to help prevent the spread of invasive plant species material, and eradication strategies recommended by the biological monitor.

Upon completion of grading, all areas of temporary disturbance would be revegetated with native species or ornamental landscaping to limit colonization by invasive species. A qualified biologist would review the landscape concept plans to ensure that no invasive species (as listed on the state's noxious weed list or in the California Invasive Plant Inventory Database) are included.

No Build Alternative

No impacts were identified for the No Build Alternative. No project action would occur under the No Build Alternative; therefore, no associated avoidance, minimization or mitigation measures are required.

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ADDITIONAL IMPACTS

3.25 RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF THE HUMAN ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

This section discusses in general terms the relationship of the proposed project's local short-term impacts and use of resources to the maintenance and enhancement of long-term productivity. NEPA requires such a discussion in 40 CFR Section 1502.16 (Environmental Consequences) of the CEQ Regulations, although CEQA Guidelines Section 15127 (Limitations on Discussion of Environmental Impact) notes that the "statutory requirement for a discussion of the relationship between short-term uses and long-term productivity was repealed by Chapter 1230 of the Statutes of 1994." A discussion in conformance with the guidance in the Caltrans SER is provided below.

3.25.1 Preferred Alternative and Draft EIR/EIS Build Alternatives and Variations

The project build alternatives would have similar impacts, as the Preferred Alternative and the Draft EIR/EIS build alternatives (with or without the associated design variations) would share similar footprints occupying a single corridor and would involve large-scale construction applying similar techniques. The short-term and long-term losses and benefits listed below are likely to occur.

Short-term losses would include:

- Economic losses experienced by businesses affected by construction and/or property takes
- Construction impacts such as noise, motorized and non-motorized traffic delays or detours
- Brief interruptions in utility service where relocation or connections would be required
- Indirect construction-related impacts upon adjacent sensitive habitat

Short-term benefits would include:

- Increased jobs and revenue generated during construction

Long-term losses would include:

- Permanent loss of plant and wildlife resources
- Loss of foraging areas or opportunities for wildlife
- Loss of open space
- Loss of critical habitat
- Visual impacts
- Worsening of congestion on certain local streets and highways in the study area
- Noise increases
- Use of construction materials and energy

Long-term benefits would include:

- Improvement of the transportation network of the region and the project vicinity
- Increased access to the border, improving the free movement of people and goods
- Reduction of congestion on certain local streets and highways
- Reduction in wait times to cross the border
- Improvement in security and the ability to conduct primary inspections at all POEs

- Increased jobs and revenue through creation of a new POE and CVEF
- Support of anticipated long-term development within the EOMSP

Transportation improvements are based on state/local comprehensive planning, which considers the need for present and future traffic requirements within the context of various factors, including present and future land use development. As discussed in Chapter 1.0, important factors affecting the need for the proposed project include wait times and congestion related to commercial goods movement and cross-border travel. The economic analysis documented in the Community Impact Assessment (HELIX/CIC Research 2010) concluded that by the project horizon year of 2035, the total annual economic output generated by the reduced border wait time for commercial border crossings as a result of any of the Draft EIR/EIS build alternatives would range from a low estimate of \$297 million and 1,575 jobs for the San Diego regional economy to a high of \$1.63 billion and 8,807 jobs. This conclusion would also apply to the Preferred Alternative. On a national level, economic output and employment generated would be approximately three times these figures. Therefore, the local impacts and use of resources by the proposed project are generally consistent with the maintenance and enhancement of long-term productivity for the local area, region, state, and nation.

3.25.2 No Build Alternative

The No Build Alternative would offer none of the benefits nor have any of the losses listed above. It would, however, not support planned development or resolve worsening congestion on local streets and highways and other POEs.

3.26 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES THAT WOULD BE INVOLVED IN THE PROPOSED PROJECT

Preferred Alternative and Draft EIR/EIS Build Alternatives and Variations

Implementation of the Preferred Alternative or any of the other build alternatives and variations would involve a similar commitment of natural, physical, human, and fiscal resources. Land used in the construction of the proposed facilities is considered an irreversible commitment during the time period that the land would be used for the highway facility, POE and CVEF. However, if a greater need arises for use of the land or if the facilities are no longer needed, the land can be converted to another use. At present, there is no reason to believe such a conversion would ever be necessary or desirable.

Considerable amounts of fossil fuels, labor, and construction materials such as cement, aggregate, and bituminous material would be expended. Additionally, large amounts of labor and natural resources would be used in the making of construction materials. Construction would also require a substantial one-time expenditure of state and federal funds, which are not retrievable but would be partially offset by savings in energy and time. In addition to the costs of construction, there would be costs for maintenance and personnel. Although such resources are generally not retrievable, their commitment is based on the concept that residents in the immediate area, region and state would benefit from the improved quality of the transportation and POE system. These benefits would consist of improved accessibility and safety, savings in time and fuel and the provision of a dependable transportation system which are expected to outweigh the commitment of these resources. With the exception of the No Toll Variation of the Draft EIR/EIS alternatives, all of the project build scenarios include a toll for use of the facility which would serve to further offset the initial expenditure of funds.

No Build Alternative

The No Build Alternative would not require irreversible and irretrievable commitments of resources.

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3.27 CUMULATIVE IMPACTS

3.27.1 Regulatory Setting

Cumulative impacts are those that result from past, present, and reasonably foreseeable future actions, combined with the potential impacts of this project. A cumulative effect assessment looks at the collective impacts posed by individual land use plans and projects. Cumulative impacts can result from individually minor, but collectively substantial, impacts taking place over a period of time.

Cumulative impacts to resources in the land use study area may result from residential, commercial, industrial, and highway development, as well as from agricultural development and the conversion to more intensive types of agricultural cultivation. These land use activities can degrade habitat and species diversity through consequences such as displacement and fragmentation of habitats and populations, alteration of hydrology, contamination, erosion, sedimentation, disruption of migration corridors, changes in water quality, and introduction or promotion of predators. They can also contribute to potential community impacts identified for the project, such as changes in community character, traffic patterns, housing availability, and employment.

CEQA Guidelines, Section 15130, describes when a cumulative impact analysis is warranted and what elements are necessary for an adequate discussion of cumulative impacts. The definition of cumulative impacts, under CEQA, can be found in Section 15355 of the CEQA Guidelines. A definition of cumulative impacts, under NEPA, can be found in 40 CFR, Section 1508.7 of the CEQ Regulations.

3.27.2 Transboundary Issues

Federal Guidance

The CEQ Guidance on NEPA Analysis for Transboundary Impacts (July 1, 1997) states: "... in the context of international agreements, the parties may set forth a specific process for obtaining information from the affected country which could then be relied upon in most circumstances to satisfy agencies' responsibility to undertake a reasonable search for information." In this case, since Mexico is undertaking a corresponding POE project on the south side of the border, Mexican agencies are addressing potential environmental impacts of concern to Mexico. The responsible agencies from Mexico and the U.S. also jointly participate in the ongoing Border Liaison Mechanism, which meets regularly to discuss transboundary issues and exchange information associated with the two projects. The Border Liaison Mechanism participants include FHWA, Mexico's SCT and IMPlan, SANDAG, Caltrans, the Mexican and American Consulates, GSA, and CBP. In 1998, an informal agreement was signed between the local agencies of San Diego, Tijuana, and the States of California and Baja California. This agreement (referred to as a "Letter of Intent"), entitled "Binational Corridor Preservation for State Route 11 – Tijuana/Rosarito 2000 and Site Designation for the East Otay Mesa - Mesa de Otay II Port of Entry" was signed by SANDAG, City of San Diego, County of San Diego, City of Tijuana, City of Rosarito, State of Baja California, and Caltrans.

President Carter's EO 12114 Section 2.5 provides exemptions that include Presidential actions. Historically, the DOS has taken the position that transboundary impacts are generally not considered (unless they are outside the exemption created by EO 12114). While the POE itself can be considered a Presidential action (i.e., it has been granted a conditional Presidential Permit), the overall program is in the nature of a joint venture and, therefore, some analysis of transboundary issues is necessary. Therefore, existing and planned development in Mexico is not included in the following cumulative analysis. However, development in Mexico, potential impacts being considered and the commitment of

Mexican authorities to addressing transboundary impacts to the extent feasible through their own process are discussed briefly below.

Cumulative Development in Mexico

Industrial and residential development in the Tijuana/Tecate region has grown rapidly in recent years, with more development planned in the near future. Statistics for 2006 indicate a total of 568 “maquiladora” or “twin-plant” facilities in Tijuana, with another 119 such facilities in Tecate and 130 in nearby Mexicali. Industrial parks number 51 in Tijuana, 24 in Mexicali, and a total of 11 in Ensenada, Tecate and Playas de Rosarito. Extensive growth of this industrial base is planned, including expansion of operations by LG Electronics, Sharp Electronics, Samsung Electronics, Hyundai Translead, MotorCar Parts, Continental Laboratory Products, Samjin LND, Goodrich Aerostructures, and others. The largest planned residential/industrial project in the area is Valle de Palmas, located between Tijuana and Tecate. The first phase of the project, nearing completion, is a 1,050-acre development including 10,000 dwelling units, 494 acres of industrial development expected to generate up to 13,000 jobs, and accompanying infrastructure (SCT 2007).

In the area immediately adjacent to the proposed Otay II POE in Tijuana, the 2005 residential population was estimated at 35,000 people. Much of this residential development consists of dense, uncontrolled settlements encroaching into steep canyons and creek and river beds, with inadequate water and wastewater infrastructure (SCT 2007).

IMPlan, a Mexican environmental agency, has addressed potential environmental impacts related to the proposed Otay II POE, related roadway infrastructure, and other development in the area in its document “*Programa Parcial de Mejoramiento de la Mesa De Otay Este, En La Ciudad De Tijuana, B.C.*” (August 2005) as summarized below.

The document emphasizes that, because urbanization’s pattern, density and process are irreversible, it is of utmost importance that risk and vulnerability mitigation criteria are adopted. According to this planning document, growth of future urban spaces should respect areas of ecological value, particularly creek and river beds at canyons and higher areas located to the east of the zone reserved for the Otay II POE. Areas adjacent to creek beds and protected green areas should be used for recreation purposes without causing environmental deterioration. Sustainable activities should be promoted, and the activities should be compatible with the essential conservation function of sensitive areas, balancing urban development with the environment. Unregulated residential encroachment, mainly along creek beds and other federal areas, should be avoided. Water degradation in creeks, unregulated solid waste disposal, and air pollution would be avoided by the strict enforcement of control regulations and laws in force. Other actions include establishing programs that would promote the restoration and conservation of areas defined as having ecological value, identifying innovative funding sources, and designing and implementing programs that would create a culture of pollution reduction and environmental protection. The clear vision is to avoid settlements in areas not suitable for urban development, and to encourage planting of compatible vegetation along the riverside and at higher areas where vegetative cover is needed to minimize mud slide risk (IMPlan 2005).

Although no infrastructure or design features to minimize air quality emissions from trucks and vehicles waiting to cross through the POE are discussed in the portion of the document obtained to date, discussions with Mexican officials confirm that a 30-minute wait time is an appropriate goal for both Otay Mesa ports. This is consistent with GSA’s Border Wizard assumptions for port feasibility analysis.

3.27.3 Cumulative Analysis

Resources to Consider

The environmental analyses in the preceding sections in Chapter 3.0 document the source and degree of impact for each resource area addressed, per NEPA and CEQA guidance, in this project-level document.

The cumulative impact analysis focuses on: (1) those resources substantially impacted by the proposed project or (2) resources currently in poor or declining health or at risk even if the project impacts are relatively small. Resources substantially impacted by the proposed project include transportation/traffic (Section 3.8), visual/aesthetics (Section 3.9), natural communities (Section 3.19), wetlands and other waters (Section 3.20), plant species (Section 3.21), animal species (Section 3.22), and threatened and endangered species (Section 3.23).

Cumulative traffic impacts are addressed in Section 3.8, rather than in this section; the traffic impact analysis addresses cumulative traffic impacts in the 2035 horizon year.

Other resources, which would not be substantially impacted by the proposed project or are not in poor or declining health, are not evaluated in detail in this section. These resources include land use (Section 3.1), consistency with plans and programs (Section 3.2), growth (Section 3.3), community character and cohesion (Section 3.4), relocations and real property acquisition (Section 3.5), environmental justice (Section 3.6), utilities and emergency services (Section 3.7), cultural resources (Section 3.10), hydrology and floodplain (Section 3.11), water quality and storm water (Section 3.12), geology and soils (Section 3.13), paleontology (Section 3.14), air quality (Section 3.16), noise (Section 3.17), energy (Section 3.18), and invasive species (Section 3.24).

Resource Study Areas and Health

Figure 3.27-1, *Cumulative Resource Study Areas*, depicts the resource study area (RSA) defined for each issue in the cumulative analysis. The RSA boundaries were selected to be large enough for defining resource health and historical context, but focused on the project's area of influence for a particular resource.

Resource area health refers broadly to the overall condition, stability or vitality of a resource. Recent trends, such as government and planning decisions, demographic changes and catastrophic natural events, can affect resource area health, which may be classified as improving, stable or in decline. Based on information developed as part of this environmental document, including technical reports and analysis conducted by environmental practitioners, as well as the EOMSP EIR (1993) and the OMCP (1993), it was determined that the following resources currently are in declining health: visual/aesthetics; natural communities; wetlands and other waters; plant species; animal species; and threatened or endangered species.

For the issues in this cumulative analysis that are currently in declining health, the historical context has been influenced mainly by steady urbanization of the surrounding area, leaving the eastern portion of Otay Mesa as one of the last large, developable areas in the San Diego region. Plans for eventual urban development of this area have been documented in the EOMSP and OMCP since 1993. Multiple land and transportation development projects have been proposed in the undeveloped portions of the EOMSP and OMCP areas in the past five years, consistent with land use planning for the area. SR-125 was built during this period, and SR-905 is currently under construction.

The EOMSP calls for protection of environmentally sensitive lands, including sensitive species. However, the 1993 EIR for the EOMSP noted there is no feasible way to lessen or avoid the significant

impacts to biological resources in the area, because some known biologically sensitive areas have been targeted for industrial or commercial uses. Similarly, the fact that many currently undeveloped parcels are slated for development was recognized to have inevitable consequences for the visual environment in the area.

Proposed Project Impacts

For the issues carried forward into this cumulative analysis, the impacts of the Preferred Alternative or any of the other build alternatives would be substantially the same. The SR-905/SR-125/SR-11 Interchange variations (especially the SR-905/SR-125/SR-11 Full Interchange Variation), as well as the Siempre Viva Road Full Interchange Variation and the 46-foot Median Variation, would add to the impacts of the Draft EIR/EIS build alternatives. Because it is the alternative represented in the EOMSP, the Two Interchange Alternative was selected to represent the impacts of the other build alternatives, combined with a worst case assumption of implementation of the SR-905/SR-125/SR-11 Full Interchange, Siempre Viva Road Full Interchange and 46-foot Median Variations. This combined alternative design scenario is addressed in the cumulative impacts analysis which follows.

Direct and indirect impacts from the proposed project for each issue carried forward into the cumulative analysis are summarized below.

- Hazardous waste/materials: Impacts requiring mitigation for agriculturally related contaminants and the potential for other hazardous materials
- Visual/Aesthetics: Change to the general visual environment throughout the land use study area by introducing a highway, POE and CVEF with associated structures where currently very little development exists
- Natural Communities: Impacts requiring mitigation to natural communities, including native, non-native, and restored grassland communities
- Wetlands and Other Waters: Impacts requiring mitigation to wetlands and other waters, including disturbed mule fat scrub and streambed
- Plant Species: Impacts requiring mitigation to non-listed plant species, including variegated dudleya, San Diego barrel cactus, and decumbent goldenbush
- Animal Species: Impacts requiring mitigation for 12 non-listed animal species, including impacts to burrowing owl
- Threatened and Endangered Species: Impacts requiring mitigation for the listed animal species, Quino checkerspot butterfly, and critical habitat for San Diego fairy shrimp and Quino checkerspot butterfly

Impacts from the proposed project for other resources would either not occur with project implementation, or would be avoided by measures incorporated into the project design and construction.

Other Current and Reasonably Foreseeable Future Actions or Projects

Reasonably foreseeable future projects are those that are likely to occur in the future and will add to the cumulative impact on a particular resource. Generally, projects will be considered “reasonably foreseeable” if they:

- a. Have applications pending with a government agency
- b. Are included in an agency’s budget or capital improvement program
- c. Are foreseeable future phases of existing projects

Current and reasonably foreseeable projects in the RSAs are identified and described in Table 3.1-1 in Section 3.1, and are depicted in Figure 3.27-2, *Anticipated Cumulative Development within the Project Vicinity*, Table 3.27-1, *Anticipated Cumulative Public Works Projects and Impacts*, and Table 3.27-2, *Anticipated Cumulative Land Development Projects and Impacts*, describe the anticipated environmental impacts from these projects, as best can be determined based on available information. Much of this compilation was based on data made available by the County and City that identified the location and status of proposed discretionary projects being processed by the County and City.

Potential Cumulative Impacts

For each resource carried forward in this analysis, the basis for conclusions regarding cumulative project impacts is the net impact of the proposed project (i.e., impact minus minimization and/or mitigation). If the impact is fully offset, it is concluded that there is no contribution to cumulative impacts from the proposed project.

Hazardous Waste/Materials

The RSA for hazardous waste/materials is comprised of the EOMSP area plus the portion of the OMCP area that is east of the SR-905/Britannia Boulevard Interchange. Of the 37 cumulative projects listed in Tables 3.27-1 and 3.27-2, the following projects identified the potential for impacts related to hazards or hazardous waste/materials: SR-905, I-805 South Managed Lanes, Otay Mesa POE Modernization, Reconfiguration and Expansion of the San Ysidro POE, Otay Hills Construction Aggregate Extraction Operation, Otay Business Park (Paragon), Maple Leaf Industrial/Piper Otay Park, California Crossings, Salvage Yards/National Enterprises Storage and Recycling Facility, and Travel Plaza. A potential cumulative impact related to hazardous waste/materials is, therefore, present in the RSA.

For the Preferred Alternative and other build alternatives, project-specific impacts related to hazardous waste/materials would be avoided, minimized and mitigated through conformance with applicable regulatory requirements and implementation of mitigation measures. Similar measures would be required of other projects in the vicinity that contain or are adjacent to known hazardous materials sites. As a result, adverse cumulative impacts related to the increased exposure of people to public health and safety risks from hazardous materials would not occur.

Visual/Aesthetics

West of Enrico Fermi Drive, the project would generally be visually compatible with the surrounding developing industrial area. Between Sanyo Avenue and Enrico Fermi Drive, however, the project would construct up to approximately 26-foot high retaining walls in close proximity to existing industrial buildings, resulting in an adverse impact on the visual environment. Implementation of the SR-125 Connector Variation for the project and raised power lines atop two relocated, taller, power poles (both of which have been incorporated into the Preferred Alternative), along with previously approved elements of the SR-905/SR-125 Interchange, would add to the cumulative visual impact in this area by creating additional vertical elements within the viewshed of the existing buildings and the immediate surrounding area. The project's contribution to the cumulative visual impact within the area west of Enrico Fermi Drive would be minimized via typical Caltrans landscape and architectural design measures as listed in Section 3.9. Similar minimizing measures would also be implemented within the other previously approved elements of the SR-905/SR-125/SR-11 Interchange.

Tables 3.27-1 and 3.27-2 list a number of anticipated industrial developments that would surround the proposed project east of Enrico Fermi Drive. Although such development would conform with the EOMSP and OMCP, the cumulative effect would be to change this area from grassland to an overall

industrial appearance. Visual impacts were identified for the Otay Mesa Recycled Water Supply Link, Otay Hills Construction Aggregate Extraction Operation, and Bradley/Robertson Copart Salvage Auto Auctions projects. If many of the proposed projects listed in Tables 3.27-1 and 3.27-2 are implemented in addition to the proposed project, the cumulative visual environment of the RSA east of Enrico Fermi Drive would change from primarily undeveloped grasslands to a developed highway, roadways and industrial buildings, as well as the governmental buildings and other facilities at the border within the POE site. The current views of wide expanses of open space would be lost. This change has been previously contemplated in the environmental documents for the EOMSP, and the updates to that plan, but would nevertheless represent a substantial adverse cumulative visual impact, for which no avoidance, minimization or mitigation measures are available.

Table 3.27-1 ANTICIPATED CUMULATIVE PUBLIC WORKS PROJECTS AND IMPACTS			
Map #	Project	Proposed Improvements and Project Status	Environmental Summary
Caltrans Capital Improvement Projects			
A	SR-905	Project consists of construction of a six-lane freeway from I-805 to the existing Otay Mesa POE at the U.S. - Mexico Border, including grade-separated local access interchanges, and a freeway-to-freeway interchange with future SR-125. Final Environmental Impact Statement/Report dated July 2004. R/W has been acquired in the eastern portion of SR-905. Siempre Viva Road interchange and associated segment of SR-905 have been constructed. Remaining portion of SR-905 between Siempre Viva Road and Britannia Boulevard was opened to traffic in December 2010. The western portion of SR-905 between Britannia Boulevard and I-805 is expected to be completed in summer 2012. Clearing and preliminary grading within the SR-905/SR-125/SR-11 interchange area began in 2009.	Substantial impacts and mitigation identified for water quality, cultural resources, hazardous materials, hydrology/drainage, floodplain, noise, socioeconomics, paleontological resources, and biological environment issues (natural communities, wetlands, WUS, sensitive plants, sensitive animals, wildlife movement corridors, invasive species, and edge effects). These issues mitigated to be less than substantial. Direct and cumulative unmitigable impacts to vernal pools.
B	I-805 Managed Lanes South	The project proposes to construct four buffer-separated Managed Lanes between East Palomar Street and SR-94, and two HOV/transit lanes between SR-94 and Landis Street, all in the freeway median. Includes associated ramps and transit stations and park-and-ride lots. The EIR/EA was approved June 2011. Phased construction is expected to begin in 2012 and be completed by 2020.	Potential impacts identified for traffic and transportation, aesthetics, cultural resources, paleontological resources, hazardous waste/materials, air quality, noise, natural communities, wetlands, and plant and animal species (including threatened and endangered).
GSA/CBP Capital Improvement Projects			
C	U.S. Cargo Import Facility Improvements at Otay Mesa POE	Project consists of adding lanes to a connector roadway, modifying approaches and fences for booths and other infrastructure improvements to enhance goods movement at the U.S. Cargo Import Facility, just east of the existing Otay Mesa POE at the U.S. - Mexico Border. First phase of project completed; final phase is pending.	Site and surroundings are largely developed. Known biological constraints to expansion/redevelopment of the site are limited to the drainage/wetlands area between the international border and the commercial truck inspection inbound queuing road.
D	Otay Mesa POE Modernization Project	Modernization of existing POE facility. The proposed project would reconfigure the existing POE through the purchase of adjacent property. The project would add primary and secondary inspection booths to the passenger side. On the commercial side, the project would add primary inspection, empty-truck inspection, and exit booths, and would relocate the hazardous materials import inspection area from the export compound to the commercial import compound.	NA
E	Reconfiguration and Expansion of the San Ysidro POE	Three-phase project includes demolition and new construction of most of the POE. New facility will consist of 210,000 square feet of building space, primary and secondary inspection areas, 29 northbound vehicle lanes, 2 northbound bus lanes, 6 southbound vehicle lanes, and a new southbound roadway to connect with Mexico’s El Chaparral facility. EIR/EIS complete. Upcoming schedule includes Phase I construction in 2010 and completion of final phase construction in 2014.	Site and surroundings are largely developed. Potential environmental issues include, but are not limited to, traffic, community impacts, utilities, historical resources, paleontology, hazardous materials, noise, air quality, energy, biological resources.
County Capital Improvement Projects			
F	Lonestar Road	Project is the construction of a new road from Enrico Fermi Drive to Alta Road. No planning group has been assigned and funding has yet to be determined. Estimated completion date is Spring 2011.	NA
G	Otay Mesa Road Widening	Project is the widening of 1.2 miles of Otay Mesa Road from Vann Centre Boulevard to Enrico Fermi Drive. No planning group has been assigned and funding has yet to be determined. Estimated completion date is Winter 2010-2011.	NA
Otay Water District Capital Improvement Projects			
H	Otay Mesa Recycled Water Supply System Capital Improvement Program R2087, R2077, R2058 Project	Construction of three recycled water pipelines to bring recycled water to Otay Mesa: A 24-inch diameter pipeline in Wueste Road (R2087), a 24-inch pipeline in Alta Road (R2077), and a 16-inch diameter pipeline in Airway Road/La Media Road (R2058 Part of a recycled water program to be constructed between 2009 and 2016. A pressure-reducing station is planned as part of the Wueste Road Pipeline to reduce pressure of recycled water arriving in Otay Mesa.	NOP filed 10/7/09. Draft EIR issued February 26, 2010. Potential impacts to biological resources, cultural resources, and associated with geology/soils and noise.

Table 3.27-1 (cont.) ANTICIPATED CUMULATIVE PUBLIC WORKS PROJECTS AND IMPACTS			
Map #	Project	Proposed Improvements and Project Status	Environmental Summary
City of San Diego Capital Improvements Project			
I	Otay Mesa Road Widening	Improve Otay Mesa Road to a four-lane Prime Arterial from Piper Ranch Road easterly to SR-125 and a 4-lane Major Road from SR-125 to Sanyo Avenue.	NA
J	Otay Truck Route Phase IV	Widen existing truck route between La Media Road and Drucker Lane 12 feet to the north to accommodate an 11-foot safety lane and two 12-foot truck lanes. The additional width will require five feet additional R/W to the north. Construction began in July 2010.	NA
San Diego Rural Fire Protection District			
K	Fire Station/Sheriff’s Station	As determined necessary on the basis of development in the region, a permanent 6,000-square foot Sheriff’s station would be co-located with a future 8,000-square foot fire station at the (future) northwest corner of the intersection of Lonestar Road and Enrico Fermi Drive.	NA
SANDAG			
L	South Bay Bus Rapid Transit (BRT) – Phase One	The South Bay BRT is being developed to provide high-speed transit connections between downtown San Diego and the Otay Mesa Border Crossing along the future I-805 Managed Lanes and a dedicated transit way through eastern Chula Vista. At full buildout, project will include 15 stations with upgraded passenger shelters and technological enhancements, and premium coach buses. Options are being explored to connect the proposed Otay Mesa East POE to the BRT system. Preliminary engineering, environmental work and final design in process; Phase One is planned to be in operation by late 2012.	NA

CIP = Capital Improvement Plan; NOP = Notice of Preparation; EIR = Environmental Impact Report; FEIR = Final Environmental Impact Report; ND = Negative Declaration; MND = Mitigated Negative Declaration; IS = Initial Study; NOD = Notice of Determination; PES = Preliminary Environmental Study; SEIR = Supplemental EIR; EOMSP = East Otay Mesa Specific Plan; TM = Tentative Map; SPM = Tentative Parcel Map; SWMP = Storm Water Management Plan; NA = Not Available; WUS = Waters of the U.S.; NNG = Non-Native Grassland; DCSS = Diegan Coastal Sage Scrub; QCB = Quino Checkerspot Butterfly; BUOW = Burrowing Owl; BMO = Biological Mitigation Ordinance; HCP = Habitat Conservation Plan; ADT = Average Daily Traffic.

Table 3.27-2 ANTICIPATED CUMULATIVE LAND DEVELOPMENT PROJECTS AND IMPACTS				
Map #	Identifying Project Number/ Project Name	Location	Proposed Improvements and Project Status	Environmental Summary
County of San Diego				
1	TM 5405 Otay Crossings Commerce Park	South of Otay Mesa Road and east of Alta Road	<p>Subdivision into 62 industrial lots ranging from 1.3 to 69.6 net acres each (total lot area: 287 acres). Also, 26.6 acres of public streets. Open space easements on five lots in the northeast corners of site to protect steep slopes and biologically sensitive resources. Two-phase development. Future R/W for SR-11 and new POE tentatively mapped on four lots, covering approximately 102.7 acres. 311.6 acres</p> <p>February 9, 2006 County scoping letter required preparation of a supplemental EIR due to changes since the EOMSP EIR (July 27, 1994). Draft Supplemental EIR circulated for public review May 27, 2010 and approved October 7, 2011.</p>	Significant and unmitigable impacts identified for traffic and air quality. Significant and mitigable impacts identified for biological resources (2.0 acres Diegan coastal sage scrub; 263.1 acres NNG; 0.1 acre native grassland; 0.056 acre vernal pools; 0.21 acre Corps jurisdictional non-wetland WUS; 0.99 acre CDFG jurisdictional area; 72 San Diego barrel cacti; 138 marsh-elder; 5 San Diego button-celery; 31 road pools; territory of 4 burrowing owl pairs; two QCB locations; habitat of the coastal western whiptail, California horned lark, loggerhead shrike, grasshopper sparrow, and northern harrier; and potential noise impacts to sensitive species), cultural resources, paleontological resources, public services and utilities, traffic, and noise. The USFWS published a joint Biological Opinion for this project in conjunction with the Otay Business Park project (Map #10 in this table) and the proposed SR-11/Otay Mesa East POE project on November 23, 2011. The BO identified impacts to 161.1 acres of NNG; 0.10 acre of native grassland; 1.9 acres of DCSS; and 116 square feet of basins with fairy shrimp.
2	TM 5538/TM 5139/MUP 98-020 STP 02-05139-1/ SPA 07-003 Sunroad Centrum Tech Center	Northeast of Otay Mesa Road and Otay Mesa Road/SR-905	<p>Subdivision into 63 lots ranging in size from 1.4 acres to 5.1 acres, of which 11.5 acres dedicated for commercial uses (SPA). 289.5 acres</p> <p>Final Supplemental EIR to the EOMSP Final EIR dated December 15, 2000 for 96-lot project (TM 5139). EIR addendum dated March 4, 2003 for 56-lot project included changes to road improvements and grading. TM 5139 expired; TM 5538 currently proposed on same site (plus triangular area just west of original site, adjacent to SR-125</p>	Supplemental EIR for TM 5139 identified significant unmitigable impacts for air quality and transportation; significant and mitigable impacts identified for biological and cultural resources. Mitigation required open space to protect vernal pools, NNG and sensitive species, cultural and bio monitors, off-site purchase of 0.4 acre of southern willow scrub wetland, 5.4 acres native grassland, 48.6 acres of NNG, avoidance of raptor nesting, and obtaining a QCB take permit. Other requirements include traffic improvements and construction conditions to prevent air quality impacts; however, cumulative air quality impacts and short-term construction traffic impacts would remain unmitigable.
3	TM 5304/Saeed TM/Airway Business Center	North side of Airway Dr. between Paseo de las Americas and Michael Faraday Dr.	<p>Subdivision into 18 lots (0.75 acre to 3.07 acres) for light industrial uses. 40.59 acres</p> <p>Project approved April 21, 2008. Upon completion of an addendum to the EOMSP EIR, project may proceed.</p>	Scoping letter dated April 8, 2003 indicated potentially significant impacts to biology, paleontology, archaeology, geology, traffic, and drainage issues. April 2, 2004 biological survey identified impacts to 38.52 acres of NNG, to be mitigated by purchase of 19.26 acres of mitigation bank habitat. Only sensitive species are foraging raptors.
4	TM 5394/ Dillard and Judd Roll County LLC/Enrico Fermi Industrial Park/South County Commerce Center	Southwest corner of Enrico Fermi Drive and Otay Mesa Road/SR-905	<p>Subdivision into 16 industrial lots ranging from 2.25 to 8.20 acres each. 80 total acres</p> <p>FEIR dated January 2006, certified March 10, 2006. Minor Amendment to the MSCP, consistent with BMO, within the boundary of the adopted HCP. Impacts concluded as less than significant. Project completed September 9, 2008.</p>	Impacts to biological resources concluded as less than significant.
5	MUP 04-004 RP 04-001/ Otay Hills Construction Aggregate Extraction Operation	Approximately 0.5 mile east of the intersection of Otay Mesa Road and Alta Road	<p>Rock Quarry located on 210 acres in 550 acre-ownership. Construction aggregate extraction operation, including materials processing (primary and secondary plants), concrete batch plant, cement-treated base plant, asphalt batch plant, and recycling of asphalt and concrete products. 210 acres</p> <p>Draft EIR submitted April 2007. First Iteration Review of the Screencheck Draft EIR dated September 6, 2007. March 3, 2009 Follow-up letter from February 13, 2009 meeting stated that current negotiations were underway to revise the project footprint.</p>	NOP dated May 26, 2005 included Initial Study identifying potential impacts to land use, geology, hydrology/water quality, biological (including WUS) and cultural resources, traffic, noise, air quality, public services/utilities, hazardous materials, and aesthetics.
6	TPM 20701RPL1/ ZAP 99-029/STP 05-018 SPA 05-005/ Burke Minor Subdivision/Otay Logistics Center	Eastern side of Enrico Fermi Drive between Siempre Viva Road and Airway Road	Subdivision into four parcels of 8.80, 9.37, 9.48, and 11.66 acres. Grading and improvement of a commercial road traversing the site. Truck parking and storage on site. Construction of approximately 270,00 square feet of buildings and warehouse in the northern part of the site, along with 404 parking spaces and 73 loading spaces. MND for Burke Minor Subdivision dated October 2, 2003. 39.3 acres	MND for Burke Minor Subdivision dated October 2, 2003 (otherwise relies on EOMSP EIR), plus an addendum dated February 23, 2001 to mitigate impacts. Significant and mitigable impacts identified for biological resources. Mitigation consists of off-site purchase of 20 acres of NNG to mitigate for 40 acres (entire site) of disturbed grassland at 0.5:1 ratio. Otay Logistics Center: ND dated August 2006 required fair share traffic contributions to mitigate traffic impacts for 635 (Phase I) and 715 (Phase II) ADT. Changes from mixed industrial (LU) to LE and Heavy Industrial. Also some potential impacts to cultural resources.
7	MUP 00-012/ Minor Dev. 00-012-02/ L-14212/ P-00-012 TE East Otay Mesa Auto Storage/Aaron Construction Auto Auction Park/ Insurance Auto Auctions	Northwest corner of Otay Mesa Road and Alta Road	Vehicle storage facility with weekly storage auctions. Temporary use (maximum five years). MND dated July 9, 2003 for MUP 00-012. Previous MUP expired on July 9, 2008. Application for time extension submitted on July 8, 2008. Letter dated August 26, 2008 requested further analysis. 38 acres	Significant and mitigable impacts identified for traffic in 2003 MND. Site is currently vacant. Potential impacts to biological resources, geology, hydrology, traffic, and paleontological resources. Mitigation required fair share traffic contributions to mitigate traffic impacts from addition of 354 ADT.

Table 3.27-2 (cont.) ANTICIPATED CUMULATIVE LAND DEVELOPMENT PROJECTS AND IMPACTS				
Map #	Identifying Project Number/ Project Name	Location	Proposed Improvements and Project Status	Environmental Summary
8	MUP 03-001/ Otay Mesa Auto Transfer/Rowland	Northeast corner of Otay Mesa Road and Enrico Fermi Drive	Storage area for operable vehicles as an interim use. 40.4 acres	MND dated June 24, 2005 relying on EOMSP with modifications. Significant and mitigable impacts identified for biological and cultural resources, paleontology, traffic, and geology. Mitigation measures included four acres of NNG credits, biological monitoring for BUOWs and raptor breeding, cultural and paleontological monitoring, control of construction emissions and fugitive dust, geological requirements, landscape requirements, traffic improvements, and a fair share contribution for SR-905/Old Otay Mesa Road realignment.
9	MUP 88-020/ STP 00-070/ Bradley/Robertson Copart Salvage Auto Auctions	7377 Otay Mesa Road. Southwest corner of Otay Mesa Road at Alta Road	Modification of existing MUP to add a 300 feet by 140 feet auto storage facility on an existing graded auto storage lot.	First ND dated February 22, 1994. Second ND dated November 2, 2001 to increase the number of employees from 10 to 40, add 900 feet of additional leach line, and extend the expiration date of the interim permit from November 2000 to November 2005. January 3, 2007 letter requested supplemental technical information regarding hydrology, storm water management, traffic, aesthetics, route locations, and the preliminary grading plan.
10	TM 5505/ Otay Business Park (Paragon)	Southeast of future intersection of Alta Road and Airway Road.	Subdivision into 59 industrial lots, in four phases, from west to east. No specific uses identified. Water, sewer and storm drain lines would be extended into the project site. Off-site improvements include extensions of Alta Road, Airway Road and Siempre Viva Road. The future alignment of SR-11 may traverse a portion of the site. 161.6 acres	Scoping letter dated July 27, 2006. Supplemental EIR was requested May 30, 2007 for biology regarding preservation of vernal pools, storm water management, and easements. Revised Request For SEIR dated April 23, 2008, listed potential impacts to Biological Resources. June 30, 2008 letter stated the County’s acceptance of mitigation proposal. Mitigation for burrowing owl NNG habitat at a ratio of 1:1, with 0.5:1 on East Otay Mesa and the other 0.5:1 off East Otay Mesa in an area with the potential to support burrowing owls. Also identified as significant, were stormwater and drainage impacts. First iteration of the SEIR letter dated October 30, 2008, requested further discussion in the SEIR and technical studies. Potential impacts identified in SEIR were air quality; biological resources (including WUS): project determined not to be consistent with the BMO, because it will impact all sensitive plant species on site. Impacts to sensitive animal species could occur also. More than five acres of raptor habitat might be impacted; cultural/paleontological resources; hazards; hydrology; noise; public services; transportation/ traffic; utilities and service systems. The USFWS published a joint Biological Opinion for this project in conjunction with the Otay Crossings Commerce Park project (Map #1 in this table) and the proposed SR-11/Otay Mesa East POE project on November 23, 2011. The BO identified impacts to 110.7 acres of NNG; 0.14 acre of vernal pools; and 0.10 acre of basins with fairy shrimp.
11	STP-07-038/L14625 Vulcan-Otay Mesa Plant	East of Alta Road and Otay Mesa Road intersection	Proposed asphalt and concrete plants. 1,500 square feet of office space, 2,800 square feet of break area, and 28 parking spaces. 13.5 acres NOD for grading of pad dated September 15, 2006. Approval of project relying on EOMSP EIR. Scoping letter for asphalt and concrete plant project dated October 29, 2007.	Grading project would impact 73.5 acres of NNG. Impacts to NNG will be mitigated at a 1:1 ratio by contributing \$10,000 per acre of mitigation responsibility to the San Diego Foundation to be used for management of non-native grassland preserve areas on Otay Mesa. Letter received on August 13, 2007, stated impacts to project would be 2.06 acres of CSS, 10.9 acres of non-native grassland, mitigated by 8.54 acres off site. Revised Scoping Letter from County dated November 29, 2007 deleted the request for an archaeological report. May 26, 2009 iteration requested further analysis for stormwater, air quality, traffic, and hydrology.
12	TM 5527 Maple Leaf Industrial/Piper Otay Park	West of SR-125, north of Otay Mesa Road/SR 905 and east of Piper Rancho Road	Subdivision into 13 industrial lots ranging in size from 1.03 to 2.61 acres.	Environmental Review Update Checklist Form for projects with Previously Approved Environmental Documents identified potential new impacts to biological resources, hazards, hydrology, and traffic which were not previously identified in the EOMSP EIR. Scoping Letter dated March 5, 2007 identified the same issues as above. Fourth Iteration of Initial Study stated further analysis of traffic impacts was needed.
13	TPM 21046 P06-102 93-19-006AA California Crossings	Northwest corner of Otay Mesa Road and Harvest Road	A 352,502 square foot regional shopping center. 28.4 acres Currently in Environmental analysis. EIR not yet available for public review.	Potential significant project impacts are to air quality (long-term mobile source emissions related to CO, VOC, and PM ₁₀); traffic/Circulation (significant impacts to intersections and roadways); biological resources (direct loss of 23.4 acres of sensitive NNG habitat, loss to raptor foraging and nesting habitat, impacts to migratory birds [mitigation includes acquisition of a 15.4-acre conservation easement and distance restrictions of construction during raptor nesting season]); and cultural and paleontological resources. Impacts determined not to be significant are associated with geology/soils, hazards/hazardous materials, hydrology/water quality, noise, aesthetics, agriculture, land use and planning, mineral resources, population and housing, public services and utilities, and recreation.

Table 3.27-2 (cont.) ANTICIPATED CUMULATIVE LAND DEVELOPMENT PROJECTS AND IMPACTS				
Map #	Identifying Project Number/ Project Name	Location	Proposed Improvements and Project Status	Environmental Summary
14	TM 5549 International Industrial Park	Alta Road at Lonestar Road	Subdivide vacant land into 24 parcels for technology/business. 118.43 acres to be developed; 35.90 acres placed in open space; 16.26 acres used for internal circulation streets. Development planned to include three acres for the future permanent fire and sheriff station. Scoping Letter, dated February 3, 2009.	Pre-Application letter dated July 23, 2007 listed biological resources as one of the major project issues.
15	MUP 06-074W1 Corrections Corporation of America	East of Alta Road and north of Calzada de la Fuente	Development of a 408,522-square-foot secure detention facility in two phases. The facility would include detention buildings to accommodate 2,132 beds and several other buildings for ancillary support services, as well as walled and partially covered outdoor recreation areas. Includes parking area and an equestrian trail. 37 acres	The county is processing a MUP. Because this project would not result in environmental impacts beyond those assessed in the EOMSP EIR, no Supplemental EIR is expected to be prepared.
16	MUP 98-001RPL1 Salvage Yards/National Enterprises Storage and Recycling Facility	East and west sides of Alta Road, north of Calzada de la Fuente	Develop areas for interim use including automobile storage, scrap and recycling operations, and wood and green material recycling. Project will include temporary office trailers of 720 square feet each and 200 employee parking spaces, and space for approximately 11,000 vehicles. 161.2 acres	Addendum to EOMSP EIR finalized November 24, 2008. MSCP Findings of Conformance determined impacts of 0.76 acre coastal sage scrub and 103.61 acres of non-native grassland. Mitigation included 67.94 acres of coastal sage scrub and 24.29 acres of non-native grassland for a total of 117.66 impacted acres and 91.28 acres of mitigation (mitigation was of higher habitat value than impacts, resulting in less mitigation area). Buildout conditions would result in 2,408 ADT.
17	MUP 98-024W1 Travel Plaza	East side of Enrico Fermi Drive, north of Airway Drive and south of Otay Mesa Road	Four parcels, ranging from 7.35 to 42.16 acres each. Full-service truck stop travel plaza. Driver facilities, restaurant, convenience store, service bays, fuel sales, 122-room hotel, office building, parking. 82 acres	Project would impact 73.5 acres of NNG. The impacts to NNG will be mitigated at a ratio of 1:1 by contributing \$10,000 per acre of mitigation responsibility to the San Diego Foundation to be used for management of NNG preserve areas on Otay Mesa.
18	TM 5566 Hawano Subdivision	Southeast corner of Airway Road and Airway Place	Tentative Map for 23 light industrial lots and one detention basin lot in the EOMSP.. Project will include extension of sewer or water utilities; a sewer pump station off site at the northeast corner of Alta Road and Via de la Amistad; cut and fill of 230,000 cubic yards of material in a balanced grading operation; and possible off-site drainage improvements to serve the proposed roadways The site is currently vacant and vegetated in non-native grassland. 80 acres	NOP received by state clearing house on 1/14/2011 listed project issues relating to air quality, archaeologic-historic resources, biological resources, drainage/absorption, flood plain/flooding, forest land/fire hazard, noise, public services, sewer capacity, soil erosion/compaction/grading, traffic/circulation, vegetation, water quality, water supply, wildlife, and cumulative effects.
19	TM 5568 Rabago Subdivision	6950 and 6980 Otay Mesa Road	Proposed subdivision of 71.1 acres to create 19 lots for business park development in the EOMSP. Public roads are proposed within the project site to provide access to the lots internally. The project site would be rough graded to accommodate building pads and the on-site roads.	Per the County of San Diego DPLU, impacts to air quality, biology, cultural, geology, drainage, hydrology, noise, traffic, and greenhouse gases are being analyzed.
City of San Diego				
20	Cross Border Facility (previously known as Las Californias Center)	8077 Siempre Viva Road. South of Siempre Viva Road and east of Britannia Blvd.	75,000 square foot facility with a pedestrian bridge allowing access to the Tijuana International Airport. Draft NEPA EA for current project was circulated for public review in December 2009 and approved on January 10, 2012. This property has previously been approved for development with 31 industrial lots, as the Las Californias Center, but not constructed. 24.6 acres	Industrial subdivision (Las Californias Center) was approved by the City but not constructed. Federal environmental review process for the Cross-Border Facility project is complete; City environmental review process pending. Potential mitigable impacts to biological resources, unknown cultural resources, economic growth, air quality/global climate change, noise, and traffic were identified.
21	5751 Just Rite	Northeast corner of Siempre Viva Road and Britannia Blvd.	12 lots for industrial development. 38.68 acres	Environmental Initial Study Review in 2005.
22	Airway 18 Truck Terminal/Airway Auto Park Storage	Southeast corner of Britannia Blvd. and Airway Road	Truck terminal.	N/A
23	50728 Lonestar/New Millenium	East of the intersection of Lonestar Road, La Media Road and SR-125	1,150 to 1,350 residential units and 70-80 thousand square feet of industrial development. 119 acres Preliminary review opened 8/2/08. Application date change 6/18/08.	Pending information from the City.
24	100619 Brown Field Technology Park	South of Otay Mesa Road and west of Britannia Blvd.	Subdivision to consolidate 21 parcels into 20 and vacated, dedicate and acquire easements for SR-905 for future industrial/business park development. 58.4 acres Expedited processing for economic development. Approved April 14, 2009.	Potential issues related to public utilities, hydrology, noise and traffic.
25	Brown Field Airport Development Project	North of Otay Mesa Road, between Heritage Road and La Media Road	Development of general aviation uses, fixed base operations, hangars, restaurants, a new air and space museum, industrial area, solar generation facility, retail, transit, and other uses to support Brown Field Airport.	NA

NOP = Notice of Preparation; EIR = Environmental Impact Report; FEIR = Final Environmental Impact Report; ND = Negative Declaration; MND = Mitigated Negative Declaration; IS = Initial Study; NOD = Notice of Determination; PES = Preliminary Environmental Study; SEIR = Supplemental EIR; EOMSP = East Otay Mesa Specific Plan; SWMP = Storm Water Management Plan; WUS = Waters of the U.S.; NNG = Non-Native Grassland; DCSS = Diegan Coastal Sage Scrub; QCB = Quino Checkerspot Butterfly; BUOW = Burrowing Owl; BMO = Biological Mitigation Ordinance; HCP = Habitat Conservation Plan; ADT = Average Daily Traffic; SFR = Single-family residences; MFR = Multi-family residences; DU = Dwelling units; TM = Tentative Map; TPM = Tentative Parcel Map; STP = Site Plan; MUP = Major Use Permit; RP = Reclamation Plan; ZAP = Minor Use Permit; RPL = Replacement; SPA = Specific Plan Amendment; MSCP = Multiple Species Conservation Program; R/W = Right of Way; MSCP = Multiple Species Conservation Program; N/A = Not Available or Not Applicable.

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Transportation/Traffic

Section 3.8 of this Final EIR/EIS concludes that operation of the new Otay Mesa East POE would result in cumulative traffic impacts to select freeway segments for all build alternatives including the Preferred Alternative, roadway segments for the One Interchange and No Interchange build alternatives but not the Preferred Alternative or Two Interchange Alternative, and intersections for the No Interchange Alternative, as identified in Section 3.8.3. A number of measures are described in Section 3.8.4 that could reduce these traffic impacts, such that operations would be no worse than under the No Build Alternative. These measures should be considered in future transportation planning efforts for the study area in coordination with local entities, as SR-11 and the Otay Mesa East POE have been reflected in the EOMSP for many years. Because the implementation of these measures is beyond the control or responsibility of Caltrans, however, they are not proposed as part of the project.

Natural Communities

The RSA for natural communities (as well as the other biological resources discussed below) is comprised of the EOMSP area plus the portion of the OMCP area that is east of the SR-905/Britannia Boulevard Interchange. Of the 37 cumulative projects listed in Tables 3.27-2 and 3.27-3, 35 are within the RSA for natural communities (the San Ysidro POE expansion project and the I-805 Managed Lanes project are beyond the limits of the RSA). Of those projects for which anticipated environmental impact information was available, almost all cited the potential for impacts to biological resources. The EOMSP EIR (1993) noted that cumulative biological resources impacts were determined to be significant in a regional context, “especially given the number of other proposed and/or approved projects in the area and the sensitivity of the habitats in the SPA.” Specific natural communities identified in the EOMSP EIR discussion as cumulatively impacted include coastal sage scrub and grassland. The SR-905 EIS/EIR (2004b) noted that the cumulative biological resources impacts that have already occurred on Otay Mesa are substantial. A cumulative impact to natural communities is, therefore, present in the RSA.

For the proposed project, natural communities would be substantially and adversely impacted by implementation of the Preferred Alternative or any of the other build alternatives. As discussed in Section 3.19, avoidance, minimization, or mitigation measures that could be applied to reduce impacts to natural communities associated with the proposed project include revegetation, restoration, and/or preservation of habitats. The cumulative land development projects listed in Tables 3.27-1 and 3.27-2 would be subject to the requirements of the MSCP and local biological protection and resource protection ordinances, with similar mitigation requirements to those listed in Section 3.19.

Grassland (including native, non-native, disturbed, and areas in the process of being restored to grassland) is the natural community most substantially impacted by the proposed project (approximately 175 acres for the Preferred Alternative and up to approximately 203 acres for the Draft EIR/EIS alternatives/variations) and the cumulative projects within the RSA (161.2 acres would be impacted by the Otay Crossings Commerce Park, 110.7 acres by Otay Business Park, 48.6 acres by Sunroad Centrum Tech Center, 38.52 acres by Saeed TM/Airway Business Center, 40 acres by Burke Minor Subdivision/Otay Logistics Center, 73.5 acres by Vulcan-Otay Mesa Plant, 103.61 acres by Salvage yard/National Enterprises Storage and Recycling Facility, 73.5 acres by Travel Plaza, and 23.4 acres by California Crossings, among others.) Mitigation measures identified for the cumulative projects include grassland preservation and designation of open space.

The Preferred Alternative design includes a reduced footprint for the POE which reduces the project impact to non-native grassland. This measure, combined with the mitigation measures for the proposed project described in Section 3.19, including the acquisition and management of off-site mitigation parcels to allow preservation of grassland and other natural communities, are expected to minimize the project’s contribution

to natural communities impacts. Similar measures would be required for the other cumulative projects in the RSA as well, pursuant to the MSCP, as well as local, state and federal regulatory requirements. The necessary compliance of the proposed project and all cumulative projects in the region with these requirements would mitigate the cumulative impacts associated with the proposed project.

Wetlands and Other Waters

There are 12 cumulative projects within the RSA for wetlands and other waters (the watershed in which the project is located). Of these 12 projects, 5 would impact or potentially impact wetlands and/or other waters, including SR-905, Otay Mesa Recycled Water Supply Link, Otay Crossings Commerce Park, Otay Hills Construction Aggregate Extraction Operation, and Otay Business Park. Such impacts would be significant and mitigable. As discussed above, the EOMSP EIR (1993) noted that cumulative biological resources impacts were determined to be significant under CEQA in a regional context, “especially given the number of other proposed and/or approved projects in the area and the sensitivity of the habitats in the SPA.” Specific wetlands and other waters identified in the EOMSP EIR discussion as cumulatively impacted include wetland and non-wetland Waters of the U.S. A cumulative impact to wetlands and other waters is, therefore, present in the RSA.

As discussed in Section 3.20, wetlands and other waters would be impacted by implementation of the Preferred Alternative or any of the other build alternatives. Avoidance, minimization, or mitigation measures that could be applied to reduce impacts to wetlands and other waters associated with the proposed project include restoration and/or preservation. The cumulative land development projects listed in Tables 3.27-1 and 3.27-2 would also be subject to the requirements of the MSCP, local biological protection and resource protection ordinances, CWA and Porter-Cologne Act, with similar mitigation requirements. The necessary compliance of the proposed project and all cumulative projects in the region with these requirements would mitigate the cumulative impacts associated with the proposed project.

Plant Species

As stated above, there are 37 cumulative projects within the RSA for biological resources. Of these projects, SR-905, Otay Crossings Commerce Park, and Otay Business Park are specifically identified in Table 3.27-2 as potentially impacting rare/non-listed sensitive plants, and many of the remaining cumulative projects are listed as impacting “sensitive species” or “biological resources.” As previously mentioned, the EOMSP EIR (1993) noted that cumulative biological resources impacts were determined to be significant under CEQA in a regional context. Specific plants identified in the EOMSP EIR discussion as cumulatively impacted include San Diego barrel cactus and San Diego County viguiera. A cumulative impact to non-listed sensitive plant species is, therefore, present in the RSA.

For the proposed project, individual plant species would be substantially and adversely impacted by implementation of the Preferred Alternative or any of the other build alternatives. The Preferred Alternative reduced the eastern extent of the POE, which would reduce project impacts to sensitive plant species, including variegated dudleya, decumbent goldenbush and San Diego barrel cactus. As discussed in Section 3.21, additional avoidance, minimization, or mitigation measures that could be applied to reduce the project’s direct impacts to sensitive plant species include salvage and translocation of individual plant species and preservation within the Lonestar parcels. The cumulative land development projects listed in Tables 3.27-1 and 3.27-2 would be subject to the requirements of the MSCP and local biological protection and resource protection ordinances, with similar mitigation requirements. The necessary compliance of the proposed project and all cumulative projects in the region with these requirements would mitigate the cumulative impacts associated with the proposed project.

Animal Species

As stated above, there are 37 cumulative projects within the RSA for biological resources. Of these projects, 6 are identified in Table 3.27-2 as potentially impacting non-listed sensitive animal species, including SR-905, Otay Crossings Commerce Park, Sunroad Centrum Tech Center, Saeed TM/Airway Business Center, Otay Mesa Auto Transfer/Rowland, and Otay Business Park, while 11 others are identified as impacting “sensitive species” or “biological resources.” Impacted species include coastal western whiptail, California horned lark, loggerhead shrike, grasshopper sparrow, burrowing owl, and northern harrier. Impacts to raptor foraging habitat are also noted for some projects. As previously mentioned, the EOMSP EIR (1993) noted that cumulative biological resources impacts were determined to be significant under CEQA in a regional context, including impacts to burrowing owls. A cumulative impact to non-listed sensitive animal species is, therefore, present in the RSA.

For the proposed project, individual animal species and raptor foraging habitat would be substantially and adversely impacted by implementation of the Preferred Alternative or any of the other build alternatives. The Preferred Alternative incorporated a reduced footprint for the POE, which avoids four locations where burrowing owls have been previously observed to the east of the new POE boundary. As discussed in Section 3.22, additional avoidance, minimization, or mitigation measures that could be applied to reduce impacts to animal species associated with the proposed project include pre-construction surveys to verify the presence or absence of nesting birds, avoiding grading and vegetation clearing during the bird breeding season, habitat preservation and enhancement within the Lonestar parcels, and passive relocation of burrowing owls. The cumulative land development projects listed in Tables 3.27-1 and 3.27-2 would be subject to the requirements of the MSCP and local biological protection and resource protection ordinances, with similar mitigation requirements. The necessary compliance of the proposed project and all cumulative projects in the region with these requirements would mitigate the cumulative impacts associated with the proposed project.

Threatened and Endangered Species

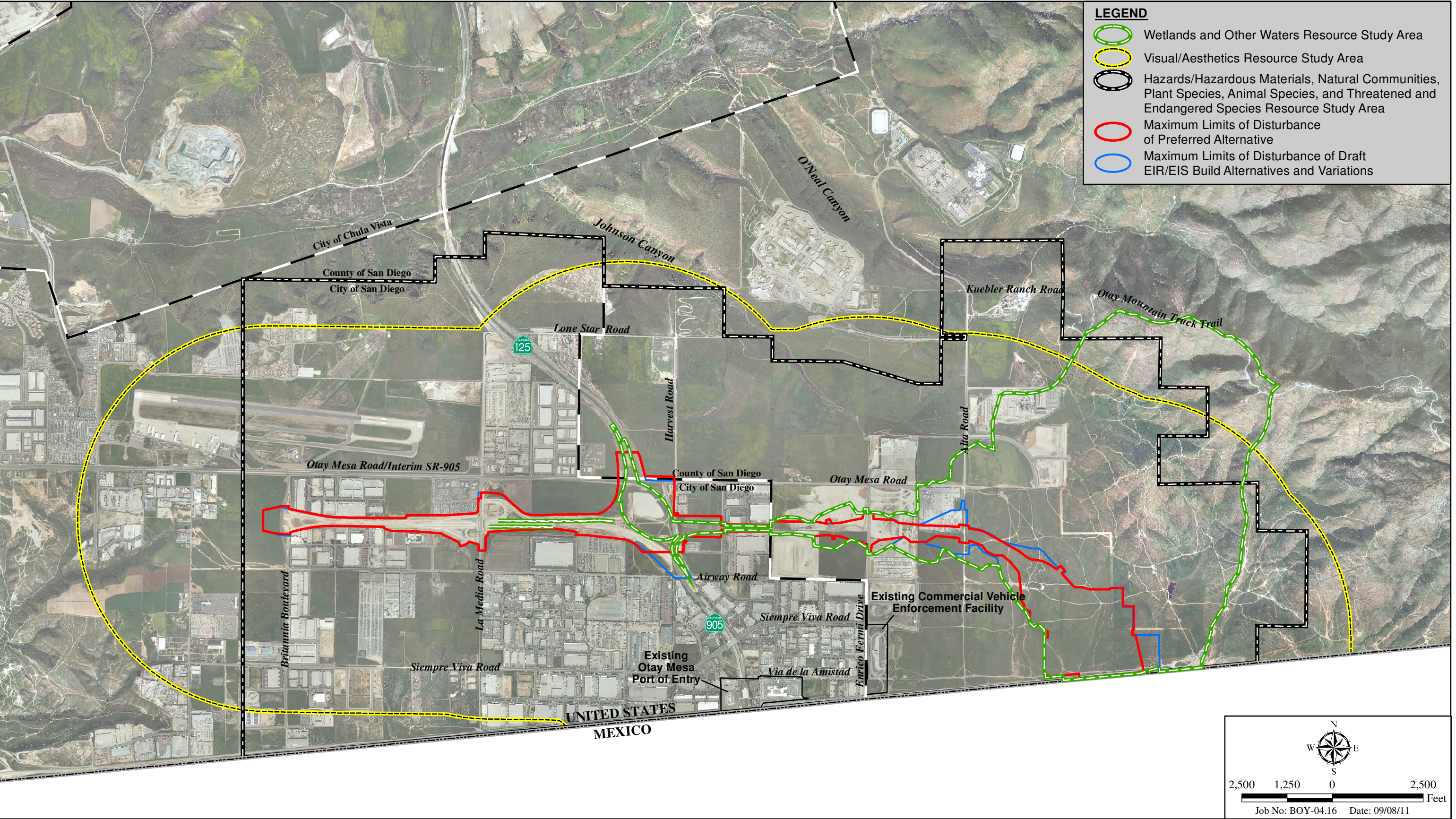
Of the 37 cumulative projects within the RSA for biological resources, 4 are specifically identified in Table 3.27-2 as impacting threatened and endangered species, including Otay Mesa Road Widening, Otay Crossings Commerce Park, Sunroad Centrum Tech Center, and Otay Business Park, while other cumulative projects are called out as impacting “sensitive” plants and/or animals or “biological resources,” which may include threatened and/or endangered species. Listed species that would be impacted by cumulative projects in the RSA include San Diego button celery, Quino checkerspot butterfly, and San Diego and Riverside fairy shrimp. As previously mentioned, the EOMSP EIR (1993) noted that cumulative biological resources impacts were determined to be significant in a regional context. A cumulative impact to threatened and endangered species is, therefore, present in the RSA.

For the proposed project, one animal species federally listed as endangered (Quino checkerspot butterfly) would be substantially and adversely impacted by implementation of the Preferred Alternative or any of the other build alternatives. In addition, any of the build alternatives would impact critical habitat for San Diego fairy shrimp; the Preferred Alternative design would have the least impact because it incorporates a reduced footprint along the eastern side of the POE. The Draft EIR/EIS build alternatives would impact critical habitat for the Quino checkerspot butterfly, but the Preferred Alternative would avoid impacts to the Quino checkerspot butterfly critical habitat, due to the reduced footprint of the POE. As discussed in Section 3.23, avoidance, minimization, or mitigation measures that could be applied to reduce impacts to Quino checkerspot butterfly include the off-site preservation and enhancement of habitat within the Lonestar parcels. Mitigation also would include the preservation of parcels containing vernal pools. The cumulative land development projects listed in Tables 3.27-1 and 3.27-2 would also be subject to the requirements of the MSCP, local biological protection and resource protection ordinances, FESA, and

CESA, with similar mitigation requirements. The necessary compliance of the proposed project and all cumulative projects in the region with these requirements would mitigate the cumulative impacts associated with the proposed project.

Conclusion

Resources substantially impacted by the proposed project and in poor or declining health include transportation/traffic (Section 3.8), visual/aesthetics (Section 3.9), hazardous waste/materials (Section 3.15), natural communities (Section 3.19), wetlands and other waters (Section 3.20), plant species (Section 3.21), animal species (Section 3.22), and threatened and endangered species (Section 3.23). For each of these issues, mitigation or minimization measures proposed for the project, together with the mitigation measures required for other cumulative projects in the area, would reduce the overall cumulative impact to the affected resources. Impacts to hazardous waste/materials, natural communities, wetlands and other waters, plant species, animal species, and threatened and endangered species would be reduced to the extent that these impacts would no longer be substantial. Cumulative impacts to visual resources and transportation/traffic would remain substantial and adverse.



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Cumulative Resource Study Areas

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

Figure 3.27-1

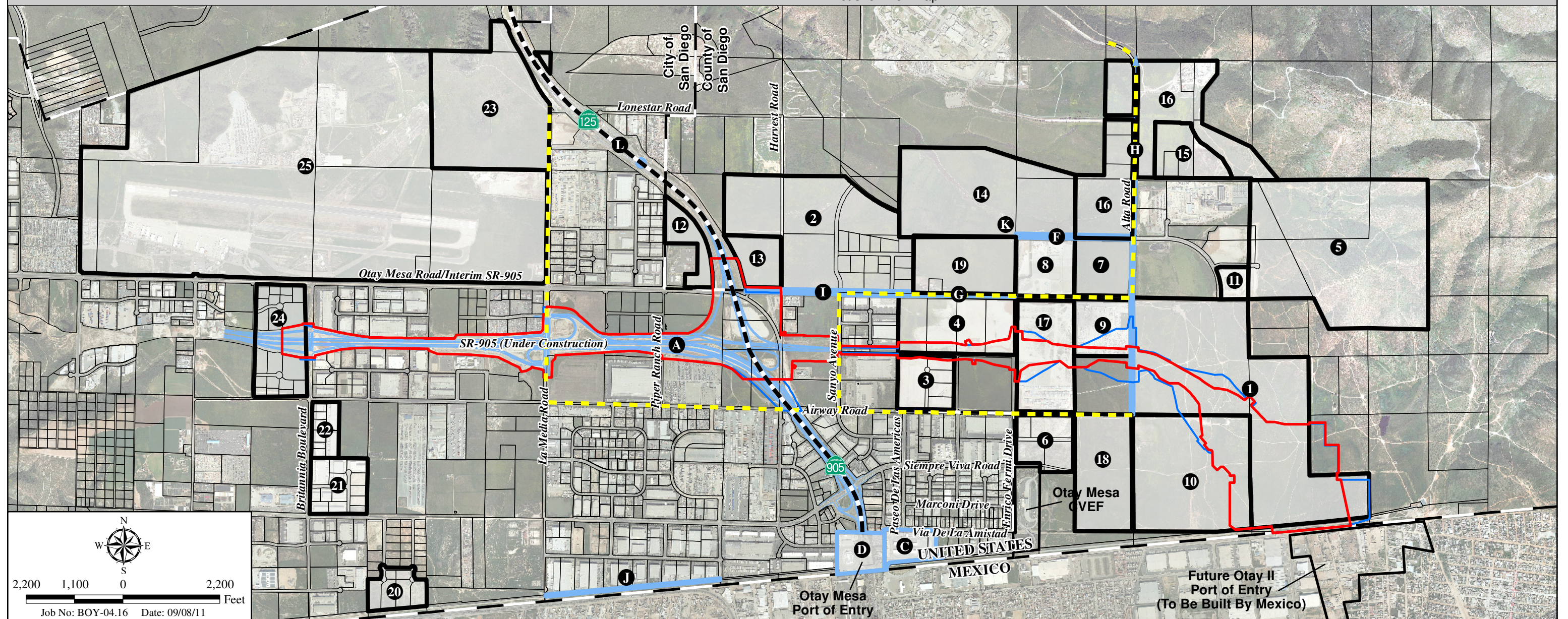
LEGEND

- Cumulative Projects - Private**
- 1 Otay Crossings Commerce Park
 - 2 Sunroad Centrum Tech Center
 - 3 Saeed TM/Airway Business Center
 - 4 Dillard and Judd Roll County LLC/Enrico Fermi Industrial Park
 - 5 Otay Hills Construction Aggregate Extraction Operation
 - 6 Burke Minor Subdivision/Otay Logistics Center
 - 7 East Otay Mesa Auto Storage/Aaron Construction Auto Park
 - 8 Otay Mesa Auto Transfer/Rowland
 - 9 Bradley/Robertson Copart Salvage Auto Auctions

- 10 Otay Business Park (Paragon)
- 11 Vulcan Otay Mesa Plant
- 12 Maple Leaf Industrial/Piper Otay Park
- 13 California Crossings
- 14 International Industrial Park
- 15 Corrections Corporation of America
- 16 Salvage Yard/National Enterprises Storage
- 17 Travel Plaza
- 18 Hawano Subdivision
- 19 Rabago Technical Business Park Subdivision
- 20 Cross Border Facility

- 21 Just Rite
 - 22 Airway 18 Truck Terminal/Airway Auto Park Storage
 - 23 Lonestar/New Millenium
 - 24 Brown Field Technology Park
 - 25 Brown Field Airport Development Project
- Cumulative Projects - Public**
- A SR-905 and SR-905/SR-125 Interchange (Under Construction)
 - B I-805 Managed Lanes South¹
 - C U.S. Cargo Import Facility Improvements at Existing Otay Mesa POE
 - D Otay Mesa POE Modernization Project

- E Reconfiguration and Expansion of the San Ysidro POE¹
 - F Lonestar Road
 - G Otay Mesa Road Widening (County)
 - H Otay Mesa Recycled Water System Capital Improvement Program R2087, R2077, R2058 Project
 - I Otay Mesa Road Widening (City)
 - J Otay Truck Route Widening
 - K SDRFD/Sheriff Station (Approximated Location)
 - L South Bay Bus Rapid Transit
- Maximum Limits of Disturbance of Preferred Alternative
- Maximum Limits of Disturbance of Draft EIR/EIS Build Alternatives and Variations



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Anticipated Cumulative Development within the Project Vicinity

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II EIR/EIS

Figure 3.27-2



Chapter 4

CEQA Evaluation

CHAPTER 4.0 – CEQA EVALUATION

4.1 DETERMINING SIGNIFICANCE UNDER CEQA

The proposed project is a joint project by Caltrans and FHWA and is subject to state and federal environmental review requirements. Project documentation, therefore, has been prepared in compliance with both CEQA and NEPA. Caltrans is the lead agency under CEQA and FHWA is the lead agency under NEPA.

One of the primary differences between NEPA and CEQA is the way significance is determined. Under NEPA, significance is used to determine whether an EIS, or some lower level of documentation, will be required. NEPA requires that an EIS be prepared when the proposed federal action (project) *as a whole* has the potential to “significantly affect the quality of the human environment.” The determination of significance is based on context and intensity. Some impacts determined to be significant under CEQA may not be of sufficient magnitude to be determined significant under NEPA. Under NEPA, once a decision is made regarding the need for an EIS, it is the magnitude of the impact that is evaluated and no judgment of its individual significance is deemed important for the text. NEPA does not require that a determination of significant impacts be stated in the environmental documents.

CEQA, on the other hand, does require Caltrans to identify each “significant effect on the environment” resulting from the project and ways to mitigate each significant effect. If the project may have a significant effect on any environmental resource, then an EIR must be prepared. Each and every significant effect on the environment must be disclosed in the EIR and mitigated if feasible. In addition, the CEQA Guidelines list a number of mandatory findings of significance, which also require the preparation of an EIR (Association of Environmental Professional 2007a). There are no types of actions under NEPA that parallel the findings of mandatory significance of CEQA. This chapter discusses the effects of this project and CEQA significance. Appendix M of this EIR/EIS includes a CEQA Checklist.

This EIR/EIS constitutes a tiered (Tier II) document of the environmental program (i.e., tiered from and based on the Phase I Program PEIR/PEIS), and addresses the project accordingly, pursuant to applicable elements of the CEQA Statutes (Public Resources Code Sections 21093 and 21094) and the CEQA Guidelines (Section 15152). The referenced regulatory sections require specific determinations regarding the necessity of subsequent environmental review, under Section 21094(b) of the CEQA Statutes and Section 15152(f) of the CEQA Guidelines. In addition, findings and analysis regarding subsequent environmental review would be provided pursuant to Sections 15162 and 15168(c) of the CEQA Guidelines.

Based on the above discussion, the following document is hereby incorporated by reference pursuant to Section 15150 of the CEQA Guidelines:

- State Route 11 and the Otay Mesa East Port of Entry: Final Program Environmental Impact Report/Phase I Environmental Impact Statement (Caltrans 2008a)

The Phase I EIR/EIS evaluated the impacts of alternative locations for the proposed project and is relied upon to support the selection of the Western Alternative as the location for the design alternatives evaluated in this Tier II EIR/EIS. It was determined that the Tier II document would address all of the environmental issues that were also evaluated in Phase I, to facilitate analysis and comparison of the various design alternatives under consideration in Tier II and to update the impact analysis based on the greater level of detail now known concerning project implementation.

4.2 LESS THAN SIGNIFICANT EFFECTS OF THE PROPOSED PROJECT

4.2.1 Less Than Significant Effects with No Mitigation

With the implementation of BMPs and other practices included in Caltrans' standard specifications, the project alternatives and variations would result in no environmental impacts or less than significant environmental impacts (with no mitigation) at both the project and cumulative levels for the following issues identified in Appendices F and G of the CEQA Guidelines:

- Agricultural Resources (refer to the introduction to Chapter 3.0 of this EIR/EIS)
- Air Quality (refer to Section 3.16 of this EIR/EIS)
- Cultural Resources (refer to Section 3.10 of this EIR/EIS)
- Geology and Soils (refer to Section 3.13 of this EIR/EIS)
- Hazardous Waste/Materials (refer to Section 3.15 of this EIR/EIS)
- Hydrology and Water Quality (refer to Sections 3.11 and 3.12 of this EIR/EIS)
- Land Use Planning (refer to Sections 3.1 and 3.4 of this EIR/EIS)
- Mineral Resources (refer to Section 3.13 of this EIR/EIS)
- Population and Housing (refer to Sections 3.3, 3.4, and 3.5 of this EIR/EIS)
- Utilities and Public Services (refer to Section 3.7 of this EIR/EIS)
- Recreation (refer to the introduction to Chapter 3.0 and Section 3.4 of this EIR/EIS)
- Energy (refer to Section 3.18 of this EIR/EIS)
- Noise (refer to Section 3.17 and the additional discussion below)

A discussion of the less than significant impacts associated with each of these issues is provided in the referenced sections in Chapter 3.0. For many of these issues, the potential impacts would be addressed via compliance with regulatory requirements or standard Caltrans practices and specifications, which do not qualify as mitigation. Compliance with these standard requirements would avoid the potential significant impacts, as described in the above referenced sections. Because the CEQA approach to noise impact analysis varies from the NEPA approach, additional CEQA analysis of the proposed project's potential for noise impacts is presented below.

Noise

When determining whether a noise impact is significant under CEQA, a comparison is made between the baseline noise level and the build noise level. The CEQA noise analysis is completely independent of the NEPA analysis discussed in Section 3.17 which is centered on noise abatement criteria. Under CEQA, the assessment entails evaluating the setting of the noise impact and then how large or perceptible the noise increase would be in the given area. Key considerations include the uniqueness of the setting, the sensitivity of surrounding noise receptors, the magnitude of the noise increase, the number of receptors affected and the absolute noise level.

The noise receptors in the project area were evaluated based on a comparison of future predicted cumulative noise levels with and without the project; both of these scenarios would include operation of SR-905 (currently under construction). An increase of three dBA or less is not perceptible to the human ear.

Construction Noise Impacts

Noise produced by construction equipment required to build the project under any of the alternatives, including the Preferred Alternative, would occur with varying intensity and duration during the different phases of construction. Construction is expected to occur from approximately 2013 to 2015. Typically,

construction activities would occur on weekdays between the hours of 7:00 AM and 7:00 PM; however, nighttime construction may also occur.

Construction activities would result in a short-term, temporary increase in the ambient noise level. The increase in noise level would primarily be experienced close to the noise source. The magnitude of the impact would depend on the type of construction activity, noise level generated by various pieces of construction equipment, duration of the construction phase, and distance between the noise source and receiver.

Construction equipment would generate a noise level between approximately 70 dBA and 90 dBA at 50 feet from the source (refer to Table 3.17-5). Noise levels generated by construction equipment (or by any “point source”) decrease at a rate of approximately six dBA per doubling of distance away from the source. Therefore, at a distance of 100 feet, noise levels would be approximately six dBA lower than the levels at the 50 feet reference distance. The average sound level at construction sites is typically less than the maximum noise level because the equipment operates in alternating cycles of full power and low power. Also, the equipment rotates in various directions (i.e., varying the exposure of the noisiest side of the equipment and the quieter sides of the equipment toward each receptor) and moves around the construction site, especially during clearing, grubbing and grading activities. Thus, the average noise levels produced would be less than the maximum level.

With the exception of the Southwestern College campus, no noise-sensitive uses occur immediately adjacent to the project site; adjoining parcels are either undeveloped (designated industrial) or developed with industrial uses. The closest residences to the proposed construction activities are located approximately 1,200 feet north of proposed SR-11 along the north side of Otay Mesa Road; at this distance, project-related construction noise would be attenuated below a level of significance. Per Caltrans Standard Specifications Section 7-1.01(I) (Caltrans 2006d), required contractor compliance with applicable local noise standards would avoid or minimize temporary noise from construction at the Southwestern College campus, as well as at nearby industrial properties. In general, construction noise would be short-term and intermittent, and would comply with Caltrans’ Standard Specifications 7-1.01(I). Short-term noise impacts during construction would be less than significant.

With regard to cumulative construction noise, each cumulative project listed in Table 3.27-2 would produce temporary construction noise. As with the proposed project, construction schedules and construction noise equipment levels would vary depending on the type of equipment and its duration of use. Construction schedules of the various projects may not overlap and each project would have to limit construction hours and noise exposure to be in compliance with local construction noise ordinances. Because construction noise generally does not exceed allowable levels beyond 200 feet from the property line of projects under construction, noise-sensitive receptors would not be exposed to construction noise from multiple projects, and cumulative construction noise impacts would not be significant.

Groundborne Vibration

Groundborne vibration may occur during periods of earthmoving and use of heavy construction equipment. In general, the discussion of construction noise, above, is applicable to the production of groundborne vibration. The magnitude of the impact from groundborne noise and vibration would depend on the type of construction activity, noise level generated by various pieces of construction equipment, duration of the construction phase, and distance between the noise source and receiver. In general, groundborne noise and vibration associated with construction would be short-term and intermittent, and would comply with Caltrans’ Standard Specifications 7-1.01(I) (Caltrans 2006d). Short-term vibration impacts during construction would be less than significant.

Operational Noise Impacts

Transportation Noise. Table 4-1, *Future Noise Levels at Sensitive Receptor Locations - Project Build Alternatives*, shows the predicted peak hour noise levels associated with the project build alternatives at the only sensitive receptor locations in the study area (R-10 and R-11), which represent the Southwestern College campus (refer to Figure 3.17-1). These data are compared with predicted noise levels at these locations under the No Build scenario, which, as previously noted, would include operation of SR-905 (approved in 2004 and currently under construction). As seen in the tables, noise levels would increase by less than one dBA at these two receptor locations; with rounding, there would be no difference. Since an increase of less than three dBA is not perceptible to the human ear, noise impacts associated with the Preferred Alternative or any of the other build alternatives would be less than significant under CEQA.

Table 4-1 FUTURE NOISE LEVELS AT SENSITIVE RECEPTOR LOCATIONS PROJECT BUILD ALTERNATIVES			
Receptor	Peak Hour Noise Level		
	No Build	Build	Change in Noise Level
R-10	74	74	0
R-11	75	75	0

Potential cumulative transportation noise impacts must be considered at the two existing sensitive noise locations in the project vicinity, i.e., the Southwestern College campus (receptors R-10 and R-11), and the three existing residences identified on Otay Mesa Road. At Southwestern College, Table 3.17-3 in Section 3.17 indicates that a noise level increase of 17 dBA can be expected by year 2035 under LOS C traffic conditions (worst case noise conditions), with or without the proposed project, under the Preferred Alternative or any of the other build alternatives. As noted above, this noise would be primarily due to traffic noise on SR-905, which was an approved project prior to the approval and construction of the college campus. The project would not result in a noise increase over the baseline cumulative noise impacts following construction of SR-905 and the Southwestern College adjacent to the freeway, and would therefore have a less than significant contribution to cumulative noise impacts to the college.

The three existing residences identified on Otay Mesa Road are located approximately 1,200 feet from the proposed project, beyond a reasonably expected project noise impact distance. Otay Mesa Road is directly adjacent to the homes and would have a noise impact higher than SR-11 at this distance. Consequently, the project would have a less than significant contribution to cumulative noise at the three identified residences under the Preferred Alternative or any of the other build alternatives.

Stationary Noise. Project-generated stationary noise sources would be associated with the POE and CVEF, which would be located entirely within County jurisdiction, and would be surrounded by planned industrial uses, including several active development applications with the County. A swathe of land approximately 1,200 to 1,500 feet north of the proposed CVEF that is designated for rural residential development under the EOMSP could feature large-lot residential use (20-acre minimum) at some time in the future, but there are no current residences or current residential projects in this area.

POE design/operations details have not yet been fully identified, but the facility is anticipated to incorporate the following typical varied-level noise sources: outdoor mechanical equipment (air compressors, pumps, fans and cooling towers), truck deliveries, loading dock activities including forklifts, and maintenance activities (parking lot sweepers, trash collection trucks and outdoor paging systems). A

sewer pump and one or more electricity generators are also anticipated on the POE site. The one-hour average sound level at 50 feet from typical industrial installations having similar types of equipment and activities, ranges from approximately 60 to 75 dBA with appropriate muffling and shielding, depending on the equipment and the intensity of use (i.e., duty cycle). These noise levels are typical of an industrial zone. In addition, each idling truck within the POE and CVEF would be expected to generate noise in the range of approximately 65 to 75 dBA. These noise levels would be compatible with surrounding existing and planned industrial uses. Existing residences and currently proposed residential development are sufficiently distant for stationary noise generated by operational activities at the POE and CVEF to be attenuated below a level of significance. Impacts would be less than significant under the Preferred Alternative or any of the other build alternatives.

With respect to cumulative stationary noise, all of the cumulative projects proposed in the land use study area are industrial in character, would not result in the construction of new noise-sensitive uses, and would be required to comply with the noise limits set by the County and City. The closest currently proposed residential projects that would result in the construction of new noise-sensitive uses are located over five miles from the project site, within the City. In addition, although the three identified homes along Otay Mesa Road could be exposed to stationary noise from other closer projects in the County's jurisdiction, the project contribution to cumulative stationary noise impacts would not be significant because the intervening related projects would both shield and mask the POE/CVEF noise and would be required by the County to limit noise levels at their property lines to the noise limits set by the County and City.

Airport Noise. Two airports, Brown Field and Tijuana International Airport, are located near the proposed project. However, the proposed POE/CVEF, which is the only part of the project that would include buildings with employees, is not located within a Comprehensive Land Use Plan (CLUP) for airports; within the 60 CNEL contour zone of either Brown Field or Tijuana International Airport; within one mile of a private airstrip; or within two miles of a public airport or a public use airport. No noise sensitive land uses are proposed. Therefore, the project would not expose people in the project area to excessive airport-related noise levels under the Preferred Alternative or any of the other build alternatives.

4.2.2 Less Than Significant Effects After Mitigation

For the following issues identified in Appendices F and G of the CEQA Guidelines, the project alternatives and variations have the potential to result in significant impacts to the environment at the project and/or cumulative levels, but measures are available to be implemented that would avoid, mitigate or reduce potentially significant impacts to below a level of significance:

- Paleontological Resources (refer to Section 3.14 of this EIR/EIS)
- Biological Resources (project and cumulative levels):
 - Natural communities (refer to Section 3.19)
 - Wetlands and other waters (refer to Section 3.20)
 - Three special status plant species; i.e., variegated dudleya, San Diego barrel cactus, and decumbent goldenbush (refer to Section 3.21)
 - Twelve special status animal species, including burrowing owls (refer to Section 3.22)
 - Two federally listed endangered species; i.e., San Diego fairy shrimp and the Quino checkerspot butterfly (refer to Section 3.23)
 - Invasive plant species (refer to Section 3.24)

A discussion of the potentially significant impacts and measures to mitigate impacts to paleontological and biological resources to below a level of significance are included in Sections 3.14, and 3.19 through 3.24.

4.3 SIGNIFICANT ENVIRONMENTAL EFFECTS OF THE PROPOSED PROJECT (MANDATORY FINDINGS OF SIGNIFICANCE)

In accordance with CEQA, Caltrans must find that a project may have a significant effect on the environment and thereby require an EIR to be prepared for the project where any of the following conditions occur:

1. The project has the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered species, or eliminate important examples of the major periods of California history or prehistory.
2. The project has possible environmental effects that are individually limited but cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.
3. The environmental effects of a project will cause substantial adverse effects on human beings, either directly or indirectly.

Significant Impacts to Biological and Cultural Resources (Item 1)

As discussed above and in Section 4.2.2, any of the build alternatives, including the Preferred Alternative, do have the potential to result in significant impacts to biological resources, per item 1 above; however, avoidance, minimization and mitigation measures discussed in Sections 3.19 through 3.24 would reduce both project-level and cumulative impacts to biological resources to below a level of significance. As noted in Section 4.2.1, with the implementation of practices included in Caltrans' standard specifications, the Preferred Alternative or any of the other build alternatives, would result in less than significant environmental impacts to cultural resources (with no mitigation) at both the project and cumulative levels.

Cumulative Impacts (Item 2)

With regard to item (2) above, as discussed in Section 3.27 any of the build alternatives, including the Preferred Alternative, could potentially result in cumulative impacts related to biological resources, traffic/transportation and visual resources.

Avoidance, minimization and mitigation measures discussed in Sections 3.19 through 3.24 would reduce cumulative biological impacts to below a level of significance.

Operation of the new Otay Mesa East POE would result in cumulative traffic impacts to select roadway segments and intersections in the project study area. A number of measures are described in Section 3.8.4 that could reduce these traffic impacts, such that operations would be no worse than under the No Build Alternative. These measures should be considered in future transportation planning efforts for the study area in coordination with local entities, as SR-11 and the Otay Mesa East POE have been reflected in the EOMSP for many years. Because the implementation of these measures is beyond the control or responsibility of Caltrans, however, they are not proposed as part of the project and significant, unmitigated cumulative traffic impacts would remain.

Any of the build alternatives also could contribute to cumulative visual impacts in the project area. Although this would be part of a planned transition from a largely open and undeveloped grassland area to a more urban and industrial setting, cumulative visual impacts would be significant and unmitigable.

These unmitigable traffic and visual impacts are discussed in greater detail in Section 4.4, *Unavoidable Significant Environmental Effects*, and would require that Caltrans make Findings and adopt a Statement of Overriding Considerations. No other potentially significant cumulative impacts would occur under the project build alternatives.

Effects on Human Beings (Item 3)

With regard to item (3) above, with the implementation of BMPs and other practices included in Caltrans' standard specifications, the any of the build alternatives, including the Preferred Alternative, would result in less than significant impacts related to subsurface hazardous materials and on-site use and/or storage of hazardous materials such as vehicle fuels. Similarly, air quality, energy, hydrology, water quality, noise, and other potential impacts to human beings listed in Section 4.2.1 would be less than significant. Nevertheless, cumulative impacts to traffic and the visual environment associated with any of the build alternatives would constitute significant, unmitigable impacts to human beings.

4.4 UNAVOIDABLE SIGNIFICANT ENVIRONMENTAL EFFECTS

For many issues, measures can be implemented that would avoid, mitigate or reduce potentially significant environmental impacts to below a level of significance. These issues are listed above in Sections 4.2.1 and 4.2.2, and associated measures that would avoid, mitigate or reduce such impacts to below a level of significance are provided in the referenced sections in Chapter 3.0. For other issues, adequate remedies are not available, so impacts would remain significant and unmitigable for any of the build alternatives. These issues are:

- Transportation/Traffic (project and cumulative levels; refer to Section 3.8 of this EIR/EIS)
- Visual/Aesthetics (cumulative level only; refer to Section 3.9 of this EIR/EIS)

Although mitigation measures are proposed for these issues, their implementation would not fully mitigate impacts; these impacts would remain significant and unmitigable, and are discussed below.

Transportation/Traffic

According to the State CEQA Guidelines, potentially significant impacts could occur to transportation/traffic if the project would increase traffic such that there would be a substantial increase in the number of vehicle trips, volume to capacity ratio on roads, or congestion at intersections, or such that a level of service standard would be exceeded.

Construction-related Traffic

During heavy periods of hauling imported fill material to the project site, it is estimated that up to 300 truck trips per day could be generated. Additional traffic generated by project construction would include construction employees traveling to and from the site each day, hauling of demolition debris off site in the early stages of clearing/grading for the project, and delivery of construction materials to the site periodically. Project construction-related trips could result in increased congestion of local streets and freeways in the project area. According to the TMP for the project, temporary full or partial closures of SR-905, Sanyo Avenue, Enrico Fermi Drive, and Alta Road are anticipated to be necessary. Detour routes at various times during construction would likely include Otay Mesa Road, Airway Road, La Media

Road and Sanyo Avenue. These road closures and detours could cause motorist delays on existing roads during construction, and would represent significant, unavoidable, and unmitigable temporary impacts.

Operational Traffic

As discussed in Section 3.8 in 2035, the build alternatives were projected to have an impact on the operations of local roadway segments and intersections if the build alternatives would worsen the LOS to E or F compared to the No Build Alternative, or would maintain an LOS E or F but would worsen the V/C ratio compared to the No Build Alternative. These impacts would be considered significant under CEQA. For freeway segments, a significant impact would be assessed under CEQA if the build alternatives would worsen the LOS to F compared to the No Build Alternative, or would maintain an LOS F but would worsen the V/C ratio compared to the No Build Alternative. It should be noted that the project would also improve operations for many local roadway segments and intersections, as well as freeway segments.

The locations where potential future significant impacts would likely occur following project implementation are identified in Section 3.8. For these locations, measures to avoid or minimize the affected conditions such that operations would be no worse than with the No Build Alternative should be considered in future planning of the transportation system in the traffic study area.

The proposed project would implement SR-11 and the Otay Mesa East POE, which have been reflected in the EOMSP for many years. While it is beyond the jurisdiction of Caltrans to require amendments to the City and County circulation elements for the Otay Mesa region, the analysis presented in Section 3.8 provides guidance as to the types of modifications that would be necessary to achieve acceptable LOS in the region in 2035, and demonstrates that feasible measures exist. The implementation of such measures is beyond the control or responsibility of Caltrans, however, so under CEQA, project-level and cumulative traffic impacts would remain significant, unavoidable, and unmitigable.

Visual/Aesthetics

According to the State CEQA Guidelines, potentially significant impacts may occur to visual resources if the project would have a substantial adverse effect on a scenic vista; would substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway; would substantially degrade the existing visual character or quality of the site and its surroundings; or would create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

Just east of Sanyo Avenue, the project would construct up to approximately 26-foot high retaining walls in close proximity to existing buildings, resulting in an adverse project-level impact on the visual environment. The project's visual impact at this location, as well as its contribution to the cumulative visual impact within the Sanyo Avenue area would be minimized via typical Caltrans landscape and architectural design measures, as listed in Section 3.9. Similarly, a mitigation measure is identified in Section 3.9 to address potential visual impacts of raised, relocated electric power lines and associated taller, power poles adjacent to the eastern edge of the SR-905/SR-125/SR-11 Interchange. These direct project impacts would therefore be significant but mitigated.

The Preferred Alternative and other build alternatives would, however, contribute to cumulative visual impacts within the EOMSP area. The visual study area is not characterized by distinct visual features, public visual resources or a designated state scenic highway, focal points or a consistent neighborhood theme. West of Enrico Fermi Drive, the project would generally be visually compatible with the character and quality of the surrounding developing industrial area; however, the visual character to the

east of Enrico Fermi Drive is most memorable for its generally open and undeveloped condition. While the proposed project is included in existing planning documents and would be constructed to applicable design standards, it would introduce a new highway with associated ramps and interchanges; landform alteration and manufactured slopes up to 20 feet in height; retaining walls; border crossing, inspection, possible toll facilities; and lighting to an area that is currently in a largely natural state. Views would be altered from various vantage points throughout the project viewshed, including the recreational Otay Mesa Truck Trail. Cumulatively, the proposed project in combination with other anticipated development in eastern Otay Mesa would considerably change the visual environment of the area from open space to urban uses, and would contribute to cumulative visual impacts within the EOMSP area following project implementation. While the mitigation measures listed in Section 3.9 would serve to avoid and minimize project-specific impacts, cumulative impacts under CEQA would remain significant, unavoidable, and unmitigable.

4.5 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

Considerable amounts of land, fossil fuels, labor, construction materials, and state and federal funds would be expended in the construction and operation of the proposed project. These would result in generally irreversible environmental changes; however, the benefits of the project are expected to outweigh the commitment of these resources. Refer to Section 3.26 for more detailed discussion of this issue.

4.6 GROWTH-INDUCING IMPACTS

The State CEQA Guidelines require an EIR to “discuss the ways in which the project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth” (CEQA Guidelines Section 15126.2[d]). This could include any reasonably foreseeable physical or regulatory change that would remove a restriction to or encourage population growth in an area, including new or extended infrastructure or public facilities; new commercial or industrial facilities; large-scale residential development; accelerated conversion of homes to commercial or multi-family use; or regulatory changes such as general plan amendments, specific plan amendments, or zone reclassifications. In general, when discussing growth, the CEQA Guidelines point out that “it must not be assumed that growth in any area is necessarily beneficial, detrimental or of little significance to the environment” (CEQA Guidelines Section 15126.2[d]).

Section 3.3 concludes that the potential for growth influence and consequent growth-related impacts in the land use study area due to the Preferred Alternative or any of the other build alternatives would be limited to effects on the rate and timing of planned growth, because most of the area in the vicinity of the project is already the subject of active development applications in progress with the County and City. In addition, the pattern of development would be expected to easily adjust to accommodate the project limits, because these facilities have been indicated conceptually on planning documents for many years, and currently reflect the approximate location of the proposed project. Potential growth-related impacts are already accounted for in local development plans, and would be mitigated by the proponents of new and cumulative projects in the area.

The project purpose includes objectives to increase inspection processing capacities, reduce northbound vehicle and pedestrian queues and wait times to cross the border, and accommodate projected increases in international trade and personal cross-border travel at POEs in the San Diego-Tijuana region. In other words, part of the purpose of the project is to remove a bottleneck or obstacle to trade, travel, and ultimately growth in the region and beyond. As noted in Chapter 1.0, the January 2006 SANDAG/Caltrans study entitled *Economic Impacts of Wait Times at the San Diego-Baja California Border* concludes that border delays discourage cross-border personal trips, and result in increased

transportation costs and interruptions in the manufacture and delivery of goods, costing the U.S. and Mexican economies an estimated US\$6 billion in gross output and 51,325 jobs in 2005 (SANDAG/Caltrans 2006a). The study estimates that economic losses incurred by the regional and national economies will more than double in the next 10 years, unless substantial improvements in border crossing and transportation infrastructure and management take place. The project CIA estimates more conservatively that, by the project horizon year of 2035, the total annual economic output generated by the reduced border wait time for commercial border crossings alone as a result of any of the build alternatives would range from a low estimate of \$297 million and 1,575 jobs to a high of \$1.63 billion and 8,807 jobs for the San Diego regional economy. On a national level, economic output and employment generated would be approximately three times these figures.

As noted in Section 3.3, as population and trade in the border region grow in the future, wait times are likely to rise, at some point surpassing the maximum time periods that many border crossers would be willing to wait. If the border continues to be a bottleneck, this could result in a curtailment of growth in the maquiladora industry near the border, and cap other types of border crossings for employment, tourism, shopping and other purposes that are vital to the economic health of the region.

As discussed in Section 3.3, the result of the unmet demand for border crossings in the San Diego/Tijuana region could cause the demand to be exported to other ports and modes of transport. Indirectly, a continued bottleneck at the land border crossings for vehicles, due to the failure to implement a planned new border crossing, could result in increased demand to transport goods and services via the region's airports, ocean ports and rail terminals and lines, resulting in potential pressure to implement unplanned expansions of these facilities, with associated potential adverse impacts to environmental resources.

Thus, the No Build Alternative could influence the location and levels of growth outside the immediate land use study area. In the same way, any of the build alternatives could influence the location and levels of growth in the larger region, state and country. In fact, growth patterns in other countries could also be affected; for instance, if production in Mexico for the U.S. market were to be replaced by production in other countries because of increased transportation costs at the U.S. - Mexico border.

Accordingly, the proposed project has the potential to “foster economic or population growth,” as defined in the CEQA Guidelines, by removing an obstacle to that growth, i.e., the border crossing bottleneck. Identification and analysis of growth-induced environmental impacts of the project, however, would be speculative, because of the diffused geographical and temporal nature of this growth. The probable existence of future growth may be reasonably foreseeable, but its location and extent is not. CEQA guidance indicates that a Lead Agency is not required to analyze a particular impact that has been found to be too speculative for evaluation (CEQA Guidelines Section 15145). Nevertheless, it is worth noting that wherever the growth associated with the proposed project were to occur, it would be subject to the land use and environmental plans and regulations applicable to that location.

4.7 CLIMATE CHANGE

Climate change refers to long-term changes in temperature, precipitation, wind patterns, and other elements of the earth's climate system. An ever-increasing body of scientific research attributes these climatological changes to GHGs, particularly those generated from the production and use of fossil fuels.

While climate change has been a concern for several decades, the establishment of the Intergovernmental Panel on Climate Change (IPCC) by the United Nations and World Meteorological Organization in 1988 has led to increased efforts devoted to GHG emissions reduction and climate change research and policy. These efforts are primarily concerned with the emissions of GHGs related to human activity, which include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), tetrafluoromethane, hexafluoroethane, sulfur

hexafluoride (SF₆), HFC-23 (fluoroform), HFC-134a (s, s, s, 2 –tetrafluoroethane), and HFC-152a (difluoroethane).

There are typically two terms used when discussing the impacts of climate change. "Greenhouse Gas Mitigation" is a term for reducing GHG emissions in order to reduce or "mitigate" the impacts of climate change. "Adaptation," refers to the effort of planning for and adapting to impacts of climate change (such as adjusting transportation design standards to withstand more intense storms and higher sea levels)¹.

Transportation sources (passenger cars, light duty trucks, other trucks, buses and motorcycles) in the state of California make up the largest source of GHG emitting sources (electricity generation is the second largest). Conversely, the main source of GHG emissions in the United States is electricity generation, followed by transportation. The dominant GHG emitted is CO₂, mostly from fossil fuel combustion.

There are four primary strategies for reducing GHG emissions from transportation sources: 1) improve system and operation efficiencies, 2) reduce growth of VMT 3) transition to lower GHG fuels and 4) improve vehicle technologies. To be most effective, all four strategies should be pursued collectively. The following regulatory setting section outlines state and federal efforts to comprehensively reduce GHG emissions from transportation sources.

Regulatory Setting

State

With the passage of several pieces of legislation, including State Senate and Assembly Bills and EOs, California launched an innovative and pro-active approach to dealing with GHG emissions and climate change at the state level.

Assembly Bill 1493 (AB 1493), Pavley. Vehicular Emissions: Greenhouse Gases, 2002: requires the CARB to develop and implement regulations to reduce automobile and light truck GHG emissions. These stricter emissions standards were designed to apply to automobiles and light trucks, beginning with the 2009 model year. In June 2009, the EPA Administrator granted a FCAA waiver of preemption to California. This waiver allowed California to implement its own GHG emission standards for motor vehicles beginning with model year 2009. California agencies will be working with Federal agencies to conduct joint rulemaking to reduce GHG emissions for passenger cars of model years 2017 through 2025.

EO S-3-05: This EO was signed on June 1, 2005, by Governor Arnold Schwarzenegger. Its goal is to reduce California's GHG emissions to: 1) 2000 levels by 2010; 2) 1990 levels by the 2020; and 3) 80 percent below the 1990 levels by the year 2050. In 2006, this goal was further reinforced with the passage of Assembly Bill 32.

AB 32, the Global Warming Solutions Act of 2006: AB 32 sets the same overall GHG emissions reduction goals as outlined in EO S-3-05, while further mandating that CARB create a plan, which includes market mechanisms, and implements rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." EO S-20-06 further directs state agencies to begin implementing AB 32, including the recommendations made by the State's Climate Action Team.

EO S-01-07: In this EO, Governor Schwarzenegger set forth the low carbon fuel standard for California. Under EO S-01-07, the carbon intensity of California's transportation fuels is to be reduced by at least ten percent by 2020.

¹ http://climatechange.transportation.org/ghg_mitigation/

Senate Bill 97 (Chapter 185, 2007): required the Governor's Office of Planning and Research to develop recommended amendments to the State CEQA Guidelines for addressing GHG emissions. The Amendments became effective on March 18, 2010.

Federal

Although climate change and GHG reduction is a concern at the federal level, currently, no regulations or legislation have been enacted specifically addressing GHG emissions reductions and climate change at the project level. Climate change and its associated effects are being addressed through various efforts at the federal level to improve fuel economy and energy efficiency, such as the “National Clean Car Program” and EO 13514, Federal Leadership in Environmental, Energy and Economic Performance.

EO 13514 is focused on reducing GHGs internally in federal agency missions, programs and operations, but also directs federal agencies to participate in the interagency Climate Change Adaptation Task Force, which is engaged in developing a U.S. strategy for adaptation to climate change.

On April 2, 2007, in *Massachusetts v. EPA*, 549 U.S. 497 (2007), the Supreme Court found that GHGs are air pollutants covered by the FCAA, and that the EPA has the authority to regulate GHGs. The Court held that the EPA Administrator must determine whether or not emissions of GHGs from new motor vehicles cause or contribute to air pollution that may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision.

On December 7, 2009, the EPA Administrator signed two distinct findings regarding GHGs, under section 202(a) of the FCAA:

- **Endangerment Finding:** The Administrator found that the current and projected concentrations of the six key well-mixed GHGs in the atmosphere – CO₂, CH₄, N₂O, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and SF₆ – threaten the public health and welfare of current and future generations.
- **Cause or Contribute Finding:** The Administrator found that the combined emissions of these well-mixed GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution that threatens public health and welfare.

Although these findings did not themselves impose any requirements on industry or other entities, this action was a prerequisite to finalizing the EPA's *Proposed Greenhouse Gas Emission Standards for Light-Duty Vehicles*, which was published on September 15, 2009². On May 7, 2010, the final *Light-Duty Vehicle Greenhouse Gas Emissions Standards and Corporate Average Fuel Economy Standards* was published in the Federal Register.

EPA and the National Highway Traffic Safety Administration (NHTSA) are taking coordinated steps to enable the production of a new generation of clean vehicles with reduced GHG emissions and improved fuel efficiency from on-road vehicles and engines. These next steps include developing the first-ever GHG regulations for heavy-duty engines and vehicles, as well as additional light-duty vehicle GHG regulations. These steps were outlined by President Obama in a memorandum on May 21, 2010³.

The final combined EPA and NHTSA standards that make up the first phase of this national program apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years

² <http://www.epa.gov/climatechange/endangerment.html>

³ <http://epa.gov/otaq/climate/regulations.htm>

2012 through 2016. The standards require these vehicles to meet an estimated combined average emissions level of 250 grams of CO₂ per mile, equivalent to 35.5 miles per gallon (MPG) if the automobile industry were to meet this CO₂ level solely through fuel economy improvements. Together, these standards will cut GHG emissions by an estimated 960 million metric tons and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012 through 2016).

On January 24, 2011, the EPA, along with the U.S. DOT and the State of California, announced a single timeframe for proposing fuel economy and GHG standards for cars and light-trucks of model years 2017 through 2025. Proposing the new standards in the same timeframe (September 1, 2011) signals continued collaboration that could lead to an extension of the current National Clean Car Program.

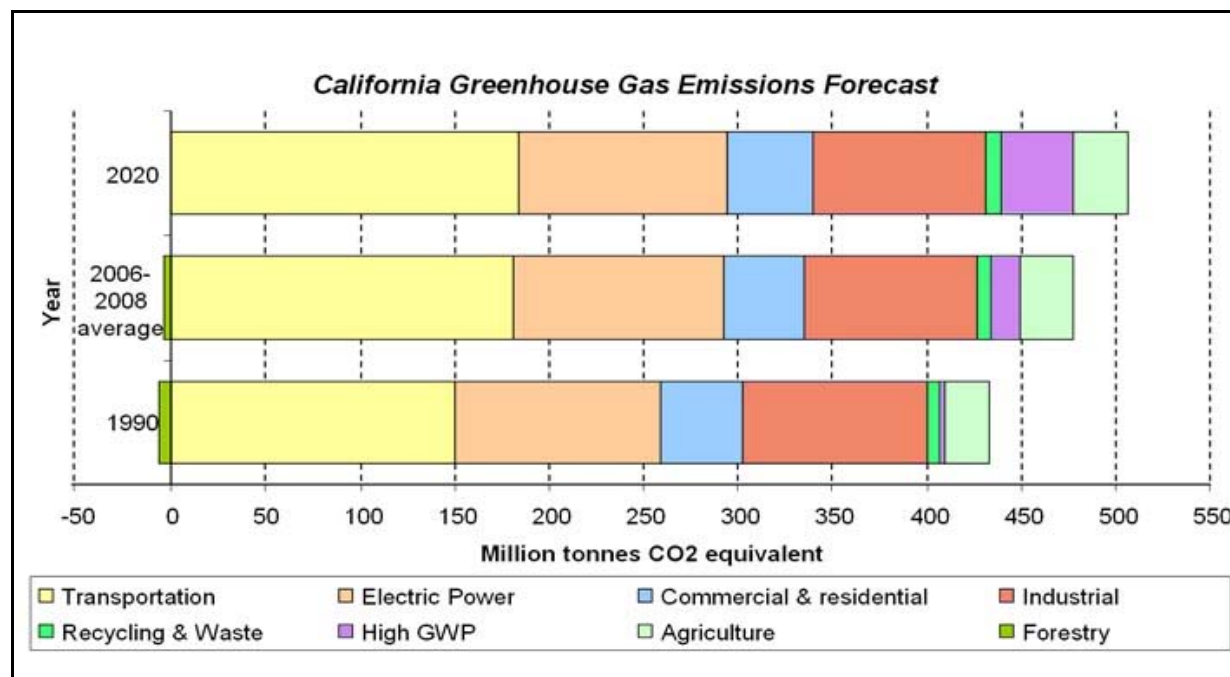
Project Analysis

An individual project does not generate enough GHG emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may participate in a potential impact through its incremental contribution combined with the contributions of all other sources of GHG.⁴ In assessing cumulative impacts, it must be determined if a project's incremental effect is "cumulatively considerable" (see CEQA Guidelines sections 15064(h)(1) and 15130). To make this determination, the incremental impacts of the project must be compared with the effects of past, current, and probable future projects. To gather sufficient information on a global scale of all past, current, and future projects in order to make this determination is a difficult, if not impossible, task.

The AB 32 Scoping Plan contains the main strategies California will use to reduce GHGs. As part of its supporting documentation for the Draft Scoping Plan, CARB released the GHG inventory for California (please see Figure 1, *California GHG Forecast*, below). The forecast (last updated: 28 October 2010) is an estimate of the emissions expected to occur in 2020 if none of the foreseeable measures included in the Scoping Plan were implemented. The base year used for forecasting emissions is the average of statewide emissions in the GHG inventory for 2006, 2007, and 2008.

⁴ This approach is supported by the Association of Environmental Professionals: *Recommendations by the Association of Environmental Professionals on How to Analyze GHG Emissions and Global Climate Change in CEQA Documents* (March 5, 2007), as well as the South Coast Air Quality Management District (SCAQMD) (Chapter 6: The CEQA Guide, April 2011) and the U.S. Forest Service (*Climate Change Considerations in Project Level NEPA Analysis*, July 13, 2009).

**FIGURE 4-1
CALIFORNIA GHG FORECAST**

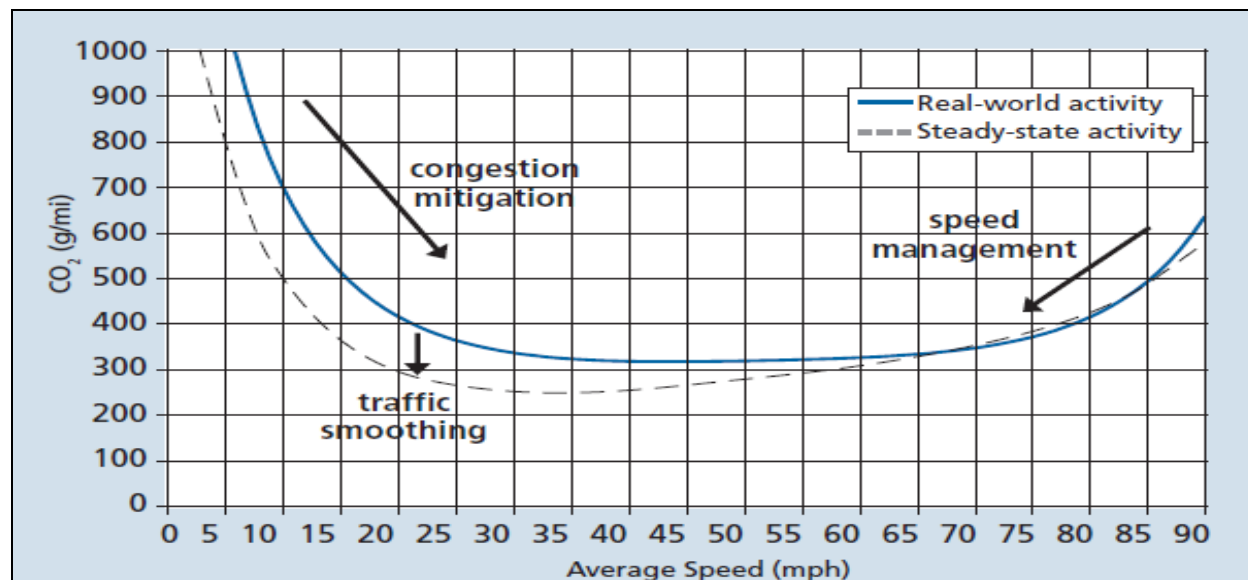


Caltrans and its parent agency, the Business, Transportation, and Housing Agency, have taken an active role in addressing GHG emission reduction and climate change. Recognizing that 98 percent of California's GHG emissions are from the burning of fossil fuels and 40 percent of all human-made GHG emissions are from transportation, Caltrans has created and is implementing the *Climate Action Program at Caltrans* that was published in December 2006.⁵

One of the main strategies in the Caltrans Climate Action Program to reduce GHG emissions is to make California's transportation system more efficient. The highest levels of CO₂ from mobile sources, such as automobiles, occur at stop-and-go speeds (0 to 25 miles per hour) and speeds over 55 mph; the most severe emissions occur from 0 to 25 miles per hour (see Figure 4-2, *Possible Effect of Traffic Operation Strategies in Reducing On-road CO₂ Emissions*, below). To the extent that a project relieves congestion by enhancing operations and improving travel times in high congestion travel corridors, GHG emissions, particularly CO₂, may be reduced.

⁵http://www.dot.ca.gov/hq/tpp/offices/ogm/key_reports_files/State_Wide_Strategy/Caltrans_Climate_Action_Program.pdf

**FIGURE 4-2
POSSIBLE EFFECT OF TRAFFIC OPERATION STRATEGIES
IN REDUCING ON-ROAD CO₂ EMISSION⁶**



Project Analysis

One of the main strategies in Caltrans' Climate Action Program to reduce GHG emissions is to make California's transportation system more efficient. The highest levels of carbon dioxide from mobile sources, such as automobiles, occur at stop-and-go speeds (0-25 mph) and speeds over 55 mph; the most severe emissions occur from 0-25 miles per hour (see Figure 4.3, *Fleet CO₂ Emissions vs. Speed [Highway]*, below). To the extent that a project relieves congestion by enhancing operations and improving travel times in high congestion travel corridors GHG emissions, particularly CO₂, may be reduced.

The project is proposed to be constructed as a four-lane toll facility. Three build alternatives, referred to as the Two Interchange, One Interchange, and No Interchange alternatives, as well as several variations on these were evaluated in the Draft EIR/EIS under this process, and an additional alternative (the Preferred Alternative) is evaluated in this Final EIR/EIS. TSM/TDM measures are currently anticipated to be incorporated into all of the build alternatives, as described in Section 2.2 of this EIR/EIS. The No Build Alternative was also evaluated.

The proposed toll system is currently anticipated to include toll collection in both directions and the use of "smart technology" such as FasTrak, although additional toll-related options are still under evaluation. The proposed toll system would also include the use of variable congestion pricing at peak and non-peak hours for both commercial and passenger vehicles. This system is intended to provide a financial incentive to encourage accessing the POE during non-peak hours, thereby reducing peak hour congestion.

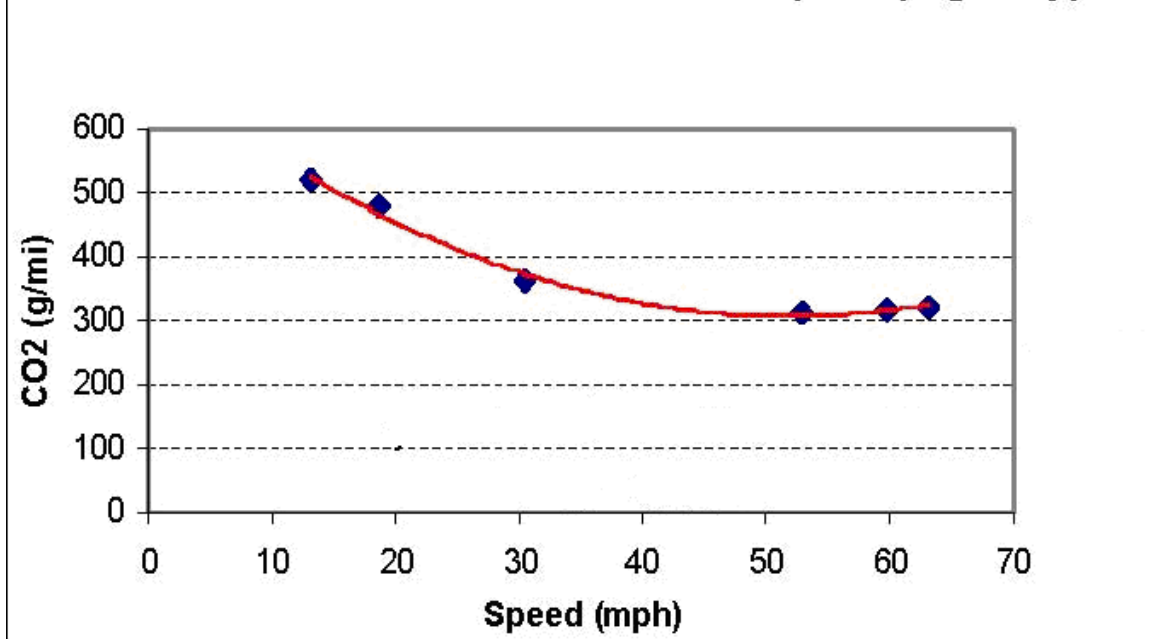
⁶ *Traffic Congestion and Greenhouse Gases*: Matthew Barth and Kanok Boriboonsomsin (TR News 268 May-June 2010) <<http://onlinepubs.trb.org/onlinepubs/trnews/trnews268.pdf>>

The proposed project is expected to increase inspection processing capacities for commercial and personal vehicles and pedestrians in the San Diego/Tijuana region, and reduce northbound vehicle and pedestrian queues and wait times to cross the border at other POEs in the region, which in turn would reduce congestion, fuel consumption and GHG emissions.

SR-11 is included in the SANDAG 2050 RTP (SANDAG 2007a); the 2010 RTIP, as amended (SANDAG 2010), which covers Fiscal Years 2010 through 2014; and the SAFETEA-LU List of High Priority Projects in San Diego, which covers the five-year period ending in September 2009.

FIGURE 4-3

Fleet CO₂ Emissions vs. Speed (Highway)



Source: Center for Clean Air Policy— [http://www.ccap.org/Presentations/Winkelman%20TRB%202004%20\(1-13-04\).pdf](http://www.ccap.org/Presentations/Winkelman%20TRB%202004%20(1-13-04).pdf)

To estimate the potential beneficial or negative effects of the proposed project on San Diego regional GHG levels, EMFAC2007/BURDEN analysis performed by SANDAG and the ARB EMFAC2007 vehicle emissions model for the San Diego Air Basin were used to calculate carbon dioxide emissions for the San Diego metropolitan area with and without the proposed SR-11/Otay Mesa East POE project.

To determine regional GHG emissions, traffic forecasts for this study were based on the SANDAG regional transportation model. One of the inputs to the model is land use forecasts for the time periods under study. The land use forecasts used in the regional transportation model are based on City and County General Plans as well as overall forecasts of population growth and economic activity. Land use forecasts are updated periodically by SANDAG. The set of land use forecasts that were currently available during the time of study is known as the SANDAG 2030 Regional Growth Forecast Update, also known as “Series 11.” Regional fuel consumption and CO₂ emissions were modeled with and without the build scenarios for each respective time horizon. Regional fuel consumption estimates for each of the build alternatives took into account travel along SR-11 with and without tolls. The results of the regional fuel consumption and CO₂ emissions models are shown in Table 4-2, *Average Difference in Regional CO₂ Emissions Draft EIR/EIS Alternatives*, below.

Table 4-2
AVERAGE DIFFERENCE IN REGIONAL CO₂ EMISSIONS
DRAFT EIR/EIS ALTERNATIVES

Alternative	Model Year	Fuel Consumption (gal)	Efficiency Fuel Savings (gal/day)	Regional CO₂ Annual Avg. Emissions (tons/day)	Efficiency CO₂ Savings (tons/day)
Existing Conditions	2006	4,900,450	0	47570	0
No Build	2015	5,469,970	0	53670	0
Two Interchange - Toll	2015	5,468,990	980	53660	10
One Interchange - Toll	2015	5,468,850	1,120	53660	10
No Interchange - Toll	2015	5,471,550	-1,580	53690	-20
Two Interchange - No Toll	2015	5,467,510	2,460	53650	20
One Interchange - No Toll	2015	5,468,210	1,760	53650	20
No Interchange - No Toll	2015	5,470,700	-730	53680	-10
Existing Conditions	2006	4,900,450	0	47570	0
No Build	2035	6,854,317	-	67620	-
Two Interchange - Toll	2035	6,849,683	4,633	67570	50
One Interchange - Toll	2035	6,846,503	7,813	67540	76
No Interchange - Toll	2035	6,858,497	-4,180	67650	-30
Two Interchange - No Toll	2035	6,844,817	9,500	67520	100
One Interchange - No Toll	2035	6,842,877	11,440	67500	11
No Interchange - No Toll	2035	6,856,127	-1,810	67630	-10

Note: EMFAC2007 model reporting limit=10 tons/day

Compared to the No Build Alternative for 2015, implementation of the Two- and One- Interchange Alternatives, with and without tolls, are estimated to reduce CO₂ emissions by up to 10 tons/day. The No Interchange Alternative, with and without tolls, would not provide a reduction in CO₂ emissions. Implementation of the Two- and One- Interchange Alternatives with and without tolls for 2035, compared to the No Build Alternative for 2035, are estimated to reduce CO₂ emissions by up to 100 tons/day. The No Interchange Alternative with and without tolls would not provide a reduction in CO₂. The Preferred Alternative would be very similar to the Two Interchange Alternative in terms of its traffic operations, and would be expected to result in similar CO₂ emissions; i.e., it is anticipated to reduce emissions by up to 10 tons/day in 2015 and up to 100 tons/day in 2035. The decreases in CO₂ would be attributed to the efficiency of vehicles moving through the POE, the lack of congestion and improved travel times along the SR-11 corridor and the local street network. Despite the localized increase in traffic levels along the SR-11 corridor between opening day and the horizon year, regional transportation efficiency would be increased and overall CO₂ emissions would be reduced. The proposed project is consistent with Caltrans' Climate Action Program to reduce GHG emissions and to make California's transportation system more efficient.

Currently, the emissions modeling software is limited to generating output only for freeway mainlines. Therefore, the above analysis does not reflect any reduction in GHG emissions that could result from reduced queue lengths at local intersections. The potential exists for further reductions in GHG emissions from vehicles spending less time idling.

Construction Emissions

GHG emissions for transportation projects can be divided into those produced during construction and those produced during operations. Construction GHG emissions include emissions produced as a result of material processing, emissions produced by on-site construction equipment, and emissions arising from traffic delays due to construction. These emissions would be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases. In addition, with innovations such as longer pavement lives, improved traffic management plans, and changes in materials, the GHG emissions produced during construction can be mitigated to some degree by longer intervals between maintenance and rehabilitation events.

CEQA Conclusions

While construction would result in a slight increase in GHG emissions during construction, it is anticipated that any increase in GHG emissions due to construction would be offset by the improvement in regional operational GHG emissions. It is Caltrans' determination that, in the absence of further regulatory or scientific information related to greenhouse gas emissions and CEQA significance, it is too speculative to make a determination regarding significance of the project's direct impact and its contribution on the cumulative scale to climate change. However, Caltrans is firmly committed to implementing measures to help reduce the potential effects of the project. These measures are outlined in the following section.

Greenhouse Gas Reduction Strategies

AB 32 Compliance

Caltrans continues to be actively involved on the Governor's Climate Action Team as CARB works to implement EOs S-3-05 and S-01-07 and help achieve the targets set forth in AB 32. Many of the strategies Caltrans is using to help meet the targets in AB 32 come from the California Strategic Growth

Plan, which is updated each year. Former Governor Arnold Schwarzenegger's Strategic Growth Plan calls for a \$222 billion infrastructure improvement program to fortify the state's transportation system, education, housing, and waterways, including \$100.7 billion in transportation funding during the next decade. The Strategic Growth Plan targets a significant decrease in traffic congestion below today's level and a corresponding reduction in GHG emissions. The Strategic Growth Plan proposes to do this while



FIGURE 4-4: MOBILITY PYRAMID

accommodating growth in population and the economy. A suite of investment options has been created that combined together are expected to reduce congestion. The Strategic Growth Plan relies on a complete systems approach to attain CO₂ reduction goals: system monitoring and evaluation, maintenance and preservation, smart land use and demand management, and operational improvements as depicted in Figure 4-4, *Mobility Pyramid*.

Caltrans is supporting efforts to reduce vehicle miles traveled by planning and implementing smart land use strategies: job/housing proximity, developing transit-oriented communities, and high density housing along transit corridors. Caltrans is working closely with local jurisdictions on planning activities; however, Caltrans does not have local land use planning authority. Caltrans is also supporting efforts to improve the energy efficiency of the transportation sector by increasing vehicle fuel economy in new cars, light- and heavy-duty trucks; Caltrans is doing this by supporting on-going research efforts at universities, by supporting legislative efforts to increase fuel economy, and by its participation on the Climate Action Team. It is important to note, however, that the control of the fuel economy standards is held by the EPA and CARB. Lastly, the use of alternative fuels is also being considered; Caltrans is participating in funding for alternative fuel research at the University of California Davis.

Table 4-3, *Climate Change Strategies*, summarizes the departmental and statewide efforts that Caltrans is implementing to reduce GHG emissions. More detailed information about each strategy is included in the Climate Action Program at Caltrans (Caltrans 2006e).

Table 4-3
CLIMATE CHANGE STRATEGIES

Strategy	Program	Partnership		Method/Process	Estimated CO ₂ Savings (MMT)	
		Lead	Agency		2010	2020
Smart Land Use	Intergovernmental Review (IGR)	Caltrans	Local Governments	Review and seek to mitigate development proposals	Not Estimated	Not Estimated
	Planning Grants	Caltrans	Local and regional agencies & other stakeholders	Competitive selection process	Not Estimated	Not Estimated
	Regional Plans and Blueprint Planning	Regional Agencies	Caltrans	Regional plans and application process	0.975	7.8
Operational Improvements & ITS Deployment	Strategic Growth Plan	Caltrans	Regions	State ITS; Congestion Management Plan	.007	2.17
Mainstream Energy & GHG into Plans and Projects	Office of Policy Analysis & Research; Division of Environmental Analysis	Interdepartmental effort		Policy establishment, guidelines, technical assistance	Not Estimated	Not Estimated
Educational & Information Program	Office of Policy Analysis & Research	Interdepartmental, CalEPA, CARB, CEC		Analytical report, data collection, publication, workshops, outreach	Not Estimated	Not Estimated
Fleet Greening & Fuel Diversification	Division of Equipment	Department of General Services		Fleet Replacement B20 B100	0.0045	0.0065 0.45 .0225
Non-vehicular Conservation Measures	Energy Conservation Program	Green Action Team		Energy Conservation Opportunities	0.117	.34
Portland Cement	Office of Rigid Pavement	Cement and Construction Industries		2.5 % limestone cement mix 25% fly ash cement mix > 50% fly ash/slag mix	1.2 .36	3.6
Goods Movement	Office of Goods Movement	Cal EPA, CARB, BT&H, MPOs		Goods Movement Action Plan	Not Estimated	Not Estimated
Total					2.72	18.67

To the extent that it is applicable or feasible for the project and through coordination with the project development team, the following measures would also be included in the project to reduce the GHG emissions and potential climate change impacts from the project:

Mitigation Measures

- The project would plant a variety of native and drought tolerant, low maintenance trees and shrubs in ratios sufficient to replace the air quality and cooling benefits of trees removed by construction of the project. Additional trees would be planted as space allows to further increase those benefits. Trees would be planted from large size containers to accelerate reestablishment of the GHG sink and to shade the pavement. In the short term, immature tree planting would probably not offset GHG produced as a result of project construction. However, in the long term tree planting should enhance the carbon sequestration potential of the project site and GHG emission levels would, in theory, continue to improve over time as the trees become more mature, except as counteracted by increased traffic volumes.
- Caltrans and the CHP are working with regional agencies to implement ITS to help manage the efficiency of the existing highway system. ITS is commonly referred to as electronics, communications, or information processing used singly or in combination to improve the efficiency or safety of a surface transportation system.
- Caltrans is including the provision of sufficient space for a potential future transit center within the overall POE footprint for possible future development of a transit center (by others) that would accommodate buses, taxis, shuttle service, bicycles and pedestrians, thereby reducing local and cross-border personal vehicle trips.
- The project would incorporate the use of energy efficient appurtenances, such as light emitting diode (LED) traffic signals and inductive sign lighting (ISL) fixtures. LED signal heads consume 10 percent of the electricity of traditional incandescent lights and ISL sign lighting fixtures consume less than half the power of traditional mercury vapor fixtures.
- The POE is expected to be a LEED Certified facility, which is designed to be environmentally sustainable, while reducing the negative environmental impacts of buildings and improving occupant health and well-being.
- Per Caltrans Standard Specifications, the contractor must comply with all local Air Pollution Control District's rules, ordinances, and regulations in regards to air quality restrictions. Include information regarding the local AQMD regulations regarding idling time during construction.

The following "green" practices and materials would be used, where possible, in the project as part of highway planting and erosion control work:

- PVC irrigation pipe with recycled content
- Non-chlorinated High Density Polyethylene (HDPE) irrigation crossover conduit
- Compost and soil amendments derived from sewage sludge and green waste materials
- Fiber produced from recycled pulp such as newspaper, chipboard, and cardboard
- Wood mulch made from green waste and/or clean manufactured wood or natural wood
- Native and drought tolerant plants species
- Irrigation controllers, including water conservation features and solar or battery power
- Restricted pesticide use and reduction goals

The State of California maintains several websites, which provide public information on measures to improve renewable energy use, energy efficiency, water conservation and efficiency, land use and landscape maintenance, solid waste measures, and transportation alternatives.

Adaptation Strategies

“Adaptation strategies” refer to how Caltrans and others can plan for the effects of climate change on the state’s transportation infrastructure and strengthen or protect the facilities from damage. Climate change is expected to produce increased variability in precipitation, rising temperatures, rising sea levels, storm surges and intensity, and the frequency and intensity of wildfires. These changes may affect the transportation infrastructure in various ways, such as damaging roadbeds by longer periods of intense heat; increasing storm damage from flooding and erosion; and inundation from rising sea levels. These effects will vary by location and may, in the most extreme cases, require that a facility be relocated or redesigned. There may also be economic and strategic ramifications as a result of these types of impacts to the transportation infrastructure.

At the Federal level, the Climate Change Adaptation Task Force, co-chaired by the CEQ, the Office of Science and Technology Policy, and the National Oceanic and Atmospheric Administration, released its interagency report October 14, 2010, outlining recommendations to President Obama for how Federal Agency policies and programs can better prepare the U.S. to respond to the impacts of climate change. The Progress Report of the Interagency Climate Change Adaptation Task Force recommends that the Federal Government implement actions to expand and strengthen the Nation’s capacity to better understand, prepare for, and respond to climate change.

Climate change adaption must also involve the natural environment as well. Efforts are underway on a statewide level to develop strategies to cope with impacts to habitat and biodiversity through planning and conservation. The results of these efforts will help California agencies plan and implement mitigation strategies for programs and projects.

On November 14, 2008, Governor Schwarzenegger signed EO S-13-08, which directed a number of state agencies to address California’s vulnerability to sea level rise caused by climate change. This EO set in motion several agencies and actions to address the concern of sea level rise.

The California Natural Resources Agency (Resources Agency) was directed to coordinate with local, regional, state and federal public and private entities to develop *The California Climate Adaptation Strategy* (Resources Agency 2009), which summarizes the best known science on climate change impacts to California, assesses California's vulnerability to the identified impacts, and then outlines solutions that can be implemented within and across state agencies to promote resiliency.

The strategy outline is in direct response to EO S-13-08 that specifically asked the Resources Agency to identify how state agencies can respond to rising temperatures, changing precipitation patterns, sea level rise, and extreme natural events. Numerous other state agencies were involved in the creation of the Adaptation Strategy document, including Environmental Protection; Business, Transportation and Housing; Health and Human Services; and the Department of Agriculture. The document is broken down into strategies for different sectors that include: Public Health; Biodiversity and Habitat; Ocean and Coastal Resources; Water Management; Agriculture; Forestry; and Transportation and Energy Infrastructure. As data continues to be developed and collected, the state's adaptation strategy will be updated to reflect current findings.

Resources Agency was also directed to request the National Academy of Science to prepare a Sea Level Rise Assessment Report by December 2010⁹ to advise how California should plan for future sea level rise. The report is to include:

- Relative sea level rise projections for California, Oregon and Washington taking into account coastal erosion rates, tidal impacts, El Niño and La Niña events, storm surge and land subsidence rates;
- The range of uncertainty in selected sea level rise projections;
- A synthesis of existing information on projected sea level rise impacts to state infrastructure (such as roads, public facilities and beaches), natural areas, and coastal and marine ecosystems;
- A discussion of future research needs regarding sea level rise.

Prior to the release of the final Sea Level Rise Assessment Report, all state agencies that are planning to construct projects in areas vulnerable to future sea level rise were directed to consider a range of sea level rise scenarios for the years 2050 and 2100 in order to assess project vulnerability and, to the extent feasible, reduce expected risks and increase resiliency to sea level rise. Sea level rise estimates should also be used in conjunction with information regarding local uplift and subsidence, coastal erosion rates, predicted higher high water levels, storm surge and storm wave data.

Until the final report from the National Academy of Sciences is released, interim guidance has been released by the Coastal Ocean Climate Action Team, as well as Caltrans, as a method to initiate action and discussion of potential risks to the state's infrastructure due to projected sea level rise.

All projects that have filed a Notice of Preparation (NOP), and/or are programmed for construction funding from 2008 through 2013, or are routine maintenance projects as of the date of EO S-13-08 may, but are not required to, consider these planning guidelines. The NOP for the proposed project was filed in December 2008 and the project is scheduled to begin construction in 2013, so a sea level rise analysis would not be required.

Furthermore, EO S-13-08 directed the Business, Transportation, and Housing Agency to prepare a report to assess vulnerability of transportation systems to sea level affecting safety, maintenance and operational improvements of the system and economy of the state. Caltrans continues to work on assessing the transportation system vulnerability to climate change, including the effect of sea level rise.

Currently, Caltrans is working to assess which transportation facilities are at greatest risk from climate change effects. Without statewide planning scenarios for relative sea level rise and other climate change impacts, Caltrans has not been able to determine what change, if any, may be made to its design standards for its transportation facilities. Once statewide planning scenarios become available, Caltrans will be able review its current design standards to determine what changes, if any, may be warranted in order to protect the transportation system from sea level rise.

Climate change adaptation for transportation infrastructure involves long-term planning and risk management to address vulnerabilities in the transportation system from increased precipitation and flooding; the increased frequency and intensity of storms and wildfires; rising temperatures; and rising sea levels. Caltrans is an active participant in the efforts being conducted in response to EO S-13-08 and is mobilizing to be able to respond to the National Academy of Science report on Sea Level Rise Assessment which is due to be released in 2012.

⁹ The Sea Level Rise Assessment report is currently due to be completed in 2012 and will include information for Oregon and Washington State as well as California.

4.8 MITIGATION MEASURES FOR SIGNIFICANT IMPACTS UNDER CEQA

Supporting documentation of all CEQA resource evaluation is provided in Chapter 3 of this Draft EIR/EIS. Discussion of all impacts avoidance, minimization and/or compensation measures is under the appropriate topic headings in Chapter 3. Implementation of these measures would reduce significant impacts to below a level of significance under CEQA for paleontological and biological resources. Significant project-related and cumulative impacts to traffic and visual resources would remain significant and unmitigable under the Preferred Alternative or any of the other build alternatives. All other project-related growth inducement and cumulative effects within the immediate project vicinity would be mitigated to below a level of significance through proposed project mitigation and required cumulative project mitigation. As described in Section 4.6, the project is likely to stimulate growth within the wider southern California region, by alleviating the current “bottleneck” at the border, and facilitating an increase in cross border trade. The locations of such growth, and the associated environmental impacts and mitigation requirements are too speculative to be determined, and therefore this growth impact is considered significant and unmitigable.