South Orange County Transportation Infrastructure Improvement Project (SOCTIIP)

Foothill-South

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FINAL SEIR
EXECUTIVE SUMMARY

EXECUTIVE SUMMARY FOR THE
ENVIRONMENTAL IMPACT STATEMENT/SUBSEQUENT ENVIRONMENTAL IMPACT REPORT
AND DRAFT SECTION 4(F) EVALUATION
FOR THE
SOUTH ORANGE COUNTY TRANSPORTATION INFRASTRUCTURE IMPROVEMENT PROJECT

Prepared for Final SEIR

FOOTHILL/EASTERN TRANSPORTATION CORRIDOR AGENCIES
ORANGE COUNTY, CALIFORNIA

November 2005

EXECUTIVE SUMMARY
TABLE OF CONTENTS

Cover Sheet

PREFACE P-1

TABLE OF CONTENTS TOC-1

List of Tables TOC-5
List of Figures TOC-5

GLOSSARY OF ACRONYMS G-1

G.1 Acronyms for the build Alternatives G-1
G.2 Acronyms for the No Action Alternatives G-2
G.3 Other Acronyms G-2
G.4 Measurements G-5

EXECUTIVE SUMMARY ES-1

ES.1 Introduction ES-1
ES.1.1 NEPA/Section 404 Integration Process ES-1
ES.2 Preferred Alternative ES-2
ES.2.1 Introduction and Summary of Major Features of Preferred Alternative ES-2
ES.2.1.1. Preferred Alternative Refinement ES-3
ES.2.2 Project Description ES-3
ES.2.2.1 Preferred Alternative Description ES-4
ES.2.3 Background to the Identification of the Preferred Alternative-NEPA, Clean Water Act and Endangered Species Act Integration Process ES-5
ES.2.3.1 History of Foothill Transportation Corridor South Planning – Project Alternatives ES-5
ES.2.3.2 The NEPA/Section 404 Collaborative Process ES-6
ES.2.3.3 Purpose and Need ES-8
ES.2.3.4 Process for Identification of the Preferred Alternative ES-9
ES.2.3.4.1 Practicability ES-10
ES.2.3.4.2 Comparison of A7C-FEC-M, FEC-W and FEC-M Alternatives ES-12
ES.2.3.4.3 Benefits of the Preferred Alternative ES-13
ES.2.3.5 Least Environmentally Damaging Practicable Alternative (LEDPA) ES-14
ES.2.3.6 Evaluation Criteria and Screening Process ES-15
ES.2.3.7 Consideration of Other Factors ES-18
ES.2.4 Preferred Alternative and LEDPA Selection ES-19
ES.3 Project History ES-19
ES.3.1 Description of the Project Area ES-20
ES.3.2 Description of the Proposed Project ES-20
ES.4 Purpose and Need for the Project and Project Objectives ES-21
ES.4.1 Project Need ES-21
ES.4.2 NEPA Purpose and Need ES-22
ES.4.3 CEQA Objectives ES-22

ES.5 Alternatives Considered ES-23
ES.5.1 Alternatives ES-23
ES.5.2 Other Major Governmental Actions in the Project Area ES-26
ES.5.3 Consistency with Transportation Planning Programs ES-27
ES.5.4 Section 4(F) Requirements and Alternatives ES-28
ES.5.5 Alternatives Evaluated and Eliminated from Further Study ES-29
ES.5.5.1 Corridor Variations on Camp Pendleton ES-29
ES.5.5.2 Other build Alternatives ES-30
ES.6 Coordination and Consultation ES-32
ES.6.1 Overview of Agency and Public Consultation ES-32
ES.6.2 Public and Agency Involvement for the Current EIS/SEIR ES-33
ES.6.2.1 Public Notification Process ES-33
ES.6.2.2 SOCTIIP Scoping Meetings ES-33
ES.6.2.3 Other Meetings ES-33
ES.6.2.4 Native American Consultation ES-34
ES.6.2.5 Notice of Preparation for the SEIR ES-34
ES.6.2.6 Notice of Intent for the EIS ES-34
ES.6.2.7 Public Participation for TCA EIR 3 ..... ES-35
ES.6.3 NEPA/Section 404 Memorandum of Understanding ES-35
ES.6.3.1 Phase I of the SOCTIIP Collaborative ES-35
ES.6.3.2 Phase II of the SOCTIIP Collaborative ES-36
ES.6.3.3 Next Phase of the SOCTIIP Collaborative ES-39
ES.6.4 Areas of Controversy ES-39
ES.6.5 Unresolved Issues ES-40
ES.7 Intended Uses of the EIS/SEIR/Anticipated Agency Actions ES-40
ES.7.1 Anticipated Agency Actions for the Corridor Alternatives ES-40
ES.7.1.1 Actions by the TCA Board of Directors ES-41
ES.7.1.2 Actions by Federal Agencies ES-41
ES.7.1.3 Actions by State Agencies ES-41
ES.7.1.4 Actions by Regional and Other Agencies ES-42
ES.7.2 Anticipated Agency Actions for the Arterial Improvements in the AIO Alternative . ES-42
ES.7.2.1 Actions by the TCA Board of Directors ES-42
ES.7.2.2 Actions by Federal Agencies ES-42
ES.7.2.3 Actions by State Agencies ES-42
ES.7.2.4 Actions by Regional and Other Agencies ES-43
ES.7.3 Anticipated Agency Actions for I-5 Improvements in the I-5 Alternative ES-43
ES.7.3.1 Actions by the TCA Board of Directors ES-43
ES.7.3.2 Actions by Federal Agencies ES-43
ES.7.3.3 Actions by State Agencies ES-43
ES.7.3.4 Actions by Regional and Other Agencies ES-44
ES.8 Summary of Environmental Impacts and Mitigation Measures ES-44
ES.8.1 Summary of Impacts Related to Traffic and Circulation ES-45
ES.8.1.1 Potential Beneficial Traffic Effects of the SOCTIIP Alternatives ES-45
ES.8.1.2 Analysis of Alternatives With Existing Conditions as the Baseline for Impact Assessment ES-48
ES.8.1.3 Potential Adverse Traffic Impacts of the SOCTIIP Alternatives ES-49
ES.8.1.4 Mitigation Measures Related to Traffic and Circulation ES-51
ES.8.1.5 Unavoidable Adverse Impacts and CEQA Level of Significance after Mitigation Related to Traffic and Circulation ES-52
ES.8.2 Summary of Impacts Related to Wetlands and Waters of the United States ES-53
ES.8.2.1 Potential Impacts of the SOCTIIP Alternatives ES-54

ES.8.2.2 Mitigation Measures Related to Wetlands and Waters of the United States ES-57
ES.8.2.3 Unavoidable Adverse Impacts and CEQA Level of Significance after Mitigation for Waters of the United States and Wetlands ES-59
ES.8.3 Summary of Impacts Related to Wildlife, Fisheries and Vegetation ES-59
ES.8.3.1 Potential Impacts of the SOCTIIP Alternatives ES-59
ES.8.3.2 Mitigation Measures Related to Wildlife, Fisheries and Vegetation ES-62
ES.8.3.3 Unavoidable Adverse Impacts and CEQA Level of Significance Related to Wildlife, Fisheries and Vegetation ES-66
ES.8.4 Summary of Impacts Related to Threatened and Endangered Species ES-68
ES.8.4.1 Potential Adverse Impacts of the SOCTIIP Alternatives to Threatened and Endangered Species ES-68
ES.8.4.2 Mitigation Measures Related to Threatened and Endangered Species ES-69
ES.8.4.3 Unavoidable Adverse Impacts and CEQA Level of Significance Related to Threatened and Endangered Species ES-72
ES.8.5 Summary of Impacts Related to Water Quality ES-72
ES.8.5.1 Adverse Impacts Related to Water Quality ES-73
ES.8.5.2 Mitigation Measures Related to Water Quality ES-74
ES.8.6 Summary of Impacts Related to Socioeconomics, Environmental Justice and Growth Inducement ES-75
ES.8.6.1 Potential Beneficial Socioeconomic Effects of the SOCTIIP Alternatives ES-75
ES.8.6.2 Adverse Impacts Related to Socioeconomics, Environmental Justice and Growth Inducement ES-76
ES.8.6.3 Mitigation Measures Related to Socioeconomics, Environmental Justice and Growth Inducement ES-78
ES.8.6.4 Unavoidable Adverse Impacts and CEQA Level of Significance after Mitigation Related to Socioeconomics, Environmental Justice and Growth Inducement ES-78
ES.8.7 Summary of Impacts Related to Air Quality ES-79
ES.8.7.1 Beneficial Air Quality Impacts of the SOCTIIP build Alternatives ES-79
ES.8.7.2 Adverse Air Quality Impacts ES-80
ES.8.7.3 Conformity with Regional Plans ES-81
ES.8.7.4 Mitigation Measures Related to Air Quality ES-82
ES.8.7.5 Unavoidable Adverse Impacts and CEQA Level of Significance after Mitigation for Air Quality ES-82
ES.8.8 Summary of Impacts Related to Noise ES-82
ES.8.8.1 Adverse Impacts Related to Noise ES-83
ES.8.8.2 Mitigation Measures and Commitments Related to Noise ES-84
ES.8.8.3 Unavoidable Adverse Impacts and CEQA Level of Significance after Mitigation Related to Noise ES-85
ES.8.9 Summary of Impacts Related to Military Uses ES-85
ES.8.9.1 Adverse Impacts Related to Military Uses ES-86
ES.8.9.2 Mitigation Measures Related to Military Uses ES-86
ES.8.9.3 Unavoidable Adverse Impacts and CEQA Level of Significance after Mitigation Related to Military Uses ES-87
ES.8.10 Summary of Impacts Related to Visual Resources ES-87
ES.8.10.1 Beneficial Effects Related to Visual Resources ES-88
ES.8.10.2 Adverse Impacts Related to Visual Resources ES-88
ES.8.10.3 Mitigation Measures Related to Visual Resources ES-88

ES.8.10.4 Unavoidable Adverse Impacts and CEQA Level of Significance after Mitigation Related to Visual Resources ES-89
ES.8.11 Summary of Impacts Related to Land Use ES-89
ES.8.11.1 Potential Adverse Land Use Impacts of the SOCTIIP Alternatives ES-90
ES.8.11.2 Mitigation Measures Related to Land Use ES-92
ES.8.11.3 Unavoidable Adverse Impacts and CEQA Level of Significance after Mitigation Related to Land Use ES-92
ES.8.12 Summary of Impacts Related to Recreation Resources ES-93
ES.8.12.1 Adverse Impacts Related to Recreation Resources ES-93
ES.8.12.2 Mitigation Measures Related to Recreation Resources ES-94
ES.8.12.3 Unavoidable Adverse Impacts and CEQA Level of Significance after Mitigation Related to Recreation Resources ES-94
ES.8.13 Summary of Impacts Related to Floodplains, Waterways and Hydrologic Systems ES-95
ES.8.13.1 Adverse Impacts Related to Floodplains, Waterways and Hydrologic Systems ES-95
ES.8.13.2 Mitigation Measures Related to Floodplains, Waterways and Hydrologic Systems ES-97
ES.8.13.3 Unavoidable Adverse Impacts and CEQA Level of Significance after Mitigation Related to Floodplains, Waterways and Hydrologic Systems ES-98
ES.8.14 Summary of Impacts Related to Hazardous Materials and Hazardous Waste Sites ES-99
ES.8.14.1 Adverse Impacts Related to Hazardous Materials and Hazardous Waste Sites ES-99
ES.8.14.2 Mitigation Measures Related to Hazardous Materials and Hazardous Waste Sites ES-100
ES.8.14.3 Unavoidable Adverse Impacts and CEQA Level of Significance after Mitigation Related to Hazardous Materials and Hazardous Waste Sites ES-101
ES.8.15 Summary of Impacts Related to Public Services and Utilities ES-101
ES.8.15.1 Beneficial Effects Related to Public Services and Utilities ES-102
ES.8.15.2 Adverse Impacts Related to Public Services and Utilities ES-102
ES.8.15.3 Mitigation Measures Related to Public Services and Utilities ES-104
ES.8.15.4 Unavoidable Adverse Impacts and CEQA Level of Significance after Mitigation Related to Public Services and Utilities ES-105
ES.8.16 Summary of Impacts Related to Earth Resources ES-105
ES.8.16.1 Adverse Impacts Related to Earth Resources ES-106
ES.8.16.2 Mitigation Measures Related to Earth Resources ES-107
ES.8.16.3 Unavoidable Adverse Impacts and CEQA Level of Significance after Mitigation Related to Earth Resources ES-107
ES.8.17 Summary of Impacts Related to Paleontological Resources ES-107
ES.8.17.1 Adverse Impacts and Beneficial Effects Related to Paleontological Resources ES-107
ES.8.17.2 Mitigation Measures Related to Paleontological Resources ES-108
ES.8.17.3 Unavoidable Adverse Impacts and CEQA Level of Significance after Mitigation Related to Paleontological Resources ES-109
ES.8.18 Summary of Impacts Related to Historic and Archeological Resources ES-109
ES.8.18.1 Adverse Impacts Related to Historic and Archeological Resources ES-109
ES.8.18.2 Mitigation Measures Related to Historic and Archaeological Resources ES-109

ES.8.18.3 Unavoidable Adverse Impacts and CEQA Level of Significance after Mitigation Related to Historic and Archeological Resources ES-110
ES.8.19 Summary of Impacts Related to Section 4(f) Resources ES-110
ES.8.20 Summary of Impacts Related to Other Parameters ES-112
ES.8.20.1 Summary of Impacts Related to Farmland ES-112
ES.8.20.2 Summary of Impacts Related to Pedestrian and Bicycle Facilities ES-113
ES.8.20.3 Summary of Impacts Related to Wild and Scenic Rivers ES-115
ES.8.20.4 Summary of Impacts Related to Coastal Barriers ES-115
ES.8.20.5 Summary of Impacts Related to Coastal Zone ES-115
ES.8.20.6 Summary of Impacts Related to Energy ES-116
ES.8.20.7 Summary of Impacts Related to Mineral Resources ES-117
ES.9 Public Participation ES-118
ES.9.1 Native American Consultation ES-118
ES.9.2 Notification of Availability of the Draft EIS/SEIR ES-118
ES.9.3 Comments Received on the Draft EIS/SEIR ES-119
ES.9.4 Response to Comments ES-120
ES.9.5 Significant Comments on the Draft EIS/SEIR ES-122
ES.9.6 Common Responses to Comments ES-125

LIST OF FIGURES

ES.1-1 Local Jurisdictions, Communities and Major Land Uses in the SOCTIIP Study Area ES-188
ES.1-2 Alignments of the build Alternatives ES-189
ES.1-2A Preferred Alternative ES-190
ES.3-1 Alignments Considered by the Phase II SOCTIIP Collaborative ES-191
ES.4-1 Alignments Developed by the Phase I SOCTIIP Collaborative ES-192
ES.6-1 2025 Weekday Peak Hour Traffic Conditions – No Action Alternative (Build out Circulation System with Proposed RMV Plan) ES-205
ES.6-2 2025 Weekday Peak Hour Traffic Conditions – FEC-M and FEC-W Alternatives (Build out Circulation System with Proposed RMV Plan) ES-206
ES.6-3 2025 Weekday Peak Hour Traffic Conditions – CC Alternative (Build out Circulation System with Proposed RMV Plan) ES-207
ES.6-4 2025 Weekday Peak Hour Traffic Conditions – CC-ALPV Alternative (Build out Circulation System with Proposed RMV Plan) ES-208
ES.6-5 2025 Weekday Peak Hour Traffic Conditions – A7C-FEC-M Alternative (Build out Circulation System with Proposed RMV Plan) ES-209
ES.6-6 2025 Weekday Peak Hour Traffic Conditions – A7C-ALPV Alternative (Build out Circulation System with Proposed RMV Plan) ES-210
ES.6-7 2025 Weekday Peak Hour Traffic Conditions – AIO Alternative (Build out Circulation System with Proposed RMV Plan) ES-211
ES.6-8 2025 Weekday Peak Hour Traffic Conditions – I-5 Alternative (Build out Circulation System with Proposed RMV Plan) ES-212
ES.6-9 Summary of build Alternative Systemwide Travel Time Savings ES-216
ES.6-10 Summary of I-5 Congestion in the SOCTIIP Study Area ES-218
ES.6-11 Summary of Arterial System Congestion in the SOCTIIP Study Area ES-220

LIST OF TABLES

ES.2-1 Comparison of Environmental Impacts CP, FEC-M, Preferred Alternatives ES-6
ES.2-2 Summary of Permanent Impacts to Corps Jurisdiction (Acres) ES-16
ES.2-3 Normalized Rank Scores for all Criteria and Corridor Alternatives for the Initial Corridor Footprints ES-16
ES.6-1 Summary of Adverse Impacts before Mitigation ES-193
ES.6-2 Summary of the Beneficial Effects of the SOCTIIP build Alternatives for Operations ES-213
ES.6-3 Summary of build Alternative Systemwide Travel Time Savings ES-215
ES.6-4 Summary of I-5 Congestion in the SOCTIIP Study Area ES-217
ES.6-5 Summary of Arterial System Congestion in the SOCTIIP Study Area ES-219
ES.6-6 Summary of build Alternative Point to Point Travel Time Savings ES-221
ES.6-7 Summary of the Direct and Indirect Adverse Impacts of the SOCTIIP build Alternatives for Operations ES-222
ES.6-8 Summary of Direct Adverse Long-Term Impacts, Mitigation Measures and CEQA Level of Significance after Mitigation for Traffic and Circulation ES-224
ES.6-9 Plant Community Impacts for the Initial Corridor, AIO and I-5 Alternatives ES-233
ES.6-10 Plant Community Impacts for the Ultimate Corridor, AIO and I-5 Alternatives ES-234
ES.6-11 Sensitive Plant Species Impacts by Alternative ES-235
ES.6-12 Bridges/Undercrossings for Wildlife Movement by Alternative ES-236
ES.6-13 Sensitive Wildlife Impacts by Alternative ES-237
ES.6-14 Summary of Direct Impacts to Threatened and Endangered Species ES-232

Common Response: Preferred Alternative-1

1 Summary of Preferred Alternative Modifications
2 Comparison of Environmental Impacts CP, FEC-M, Preferred Alternatives
3 Summary of Permanent Impacts to Corps Jurisdiction (acres)
4 Normalized Rank Scores for all Criteria and Corridor Alternatives for the Initial Corridor Footprints

Common Response: Traffic-1

1 OCTAM 3.1—2025 Congested Speed Summary
2 OCTAM 3.1—2025 Congested Speed Summary with Speed Cycling
3 OCTAM 3.1—2025 Roadway Lane Miles and VMT/VHT Statistics with Speed Recycling
4 OCTAM 3.1—2025 Differences in Countywide (Orange County) Roadway Lane Miles and VMT/VHT with and without the FTC-S
5 SCSAM—2025 PM Peak-Hour Volumes on I-5 with and without Speed Recycling
6 SCSAM—2025 ADT Volumes on I-5 with and without Speed Recycling
7 SCSAM—2025 Daily VMT and VHT in South Orange County with and without Speed Recycling

AVAILABILITY OF DOCUMENTS

The Final SEIR document and appendices are available for review during regular business hours at:

Transportation Corridor Agencies
125 Pacifica
Irvine, CA 92618
Phone: 949-754-3444
Hours: 8 AM to 5 PM, Monday through Friday.

San Clemente Information Center
209 Avenida Del Mar
Suite 102
San Clemente, CA 92672
Phone: 949-366-4941
Hours: Tuesday through Friday, 9:30 AM to 5:00 PM and Saturday from 10:00 AM to 4:00 PM

In addition, these reports may be purchased in either hard copy or on a compact disc (CD) by calling the TCA at 949-754-3444.

GLOSSARY OF ACRONYMS

G.1 ACRONYMS FOR THE BUILD ALTERNATIVES

A number of build alternatives for the South Orange County Transportation Infrastructure Improvement Project were evaluated. The acronyms for the build Alternatives (both alternatives removed from and retained for further study) in the Environmental Impact Statement/Subsequent Environmental Impact Report (EIS/SEIR) are listed below.

Far East Corridor-West Alternative	FEC-W Alternative*
Far East Corridor-West-Initial	FEC-W-Initial *
Far East Corridor-West-Ultimate	FEC-W-Ultimate*
Far East Corridor-Modified Alternative	FEC-M Alternative*
Far East Corridor-Modified-Initial	FEC-M-Initial *
Far East Corridor-Modified-Ultimate	FEC-W-Ultimate *
Far East Corridor-Complete Alternative	FEC Alternative
Far East Corridor-Talega Variation Alternative	FEC-TV Alternative
Far East Corridor-Cristianitos Variation Alternative	FEC-CV Alternative
Far East Corridor-Ortega Highway Variation Alternative	FEC-OHV Alternative
Far East Corridor-Avenida Pico Variation Alternative	FEC-APV Alternative
Central Corridor-Complete Alternative	CC Alternative*
Central Corridor-Complete-Initial	CC-Initial*
Central Corridor-Complete-Ultimate	CC-Ultimate*
Central Corridor-Avenida La Pata Variation Alternative	CC-ALPV Alternative*
Central Corridor-Avenida La Pata Variation-Initial	CC-ALPV-Initial*
Central Corridor-Avenida La Pata Variation-Ultimate	CC-ALPV-Ultimate*
Alignment 7 Corridor-Far East Crossover-Modified Alternative	A7C-FEC-M Alternative*
Alignment 7 Corridor-Far East Crossover-Modified-Initial	A7C-FEC-M-Initial*
Alignment 7 Corridor-Far East Crossover-Modified-Ultimate	A7C-FEC-M-Ultimate *
Alignment 7 Corridor-Avenida La Pata Variation Alternative	A7C-ALPV Alternative*
Alignment 7 Corridor-Avenida La Pata Variation-Initial	A7C-ALPV-Initial*
Alignment 7 Corridor-Avenida La Pata Variation-Ultimate	A7C-ALPV-Ultimate*
Alignment 7 Corridor-Complete Alternative	A7C Alternative
Alignment 7 Corridor-7 Swing Variation Alternative	A7C-7SV Alternative
Alignment 7 Corridor-Far East Crossover Variation Alternative	A7C-FECV Alternative
Alignment 7 Corridor-Far East Crossover (Cristianitos) Variation-Alternative	A7C-FECV-C Alternative
Alignment 7 Corridor-Far East Crossover (Agricultural Fields) Variation Alternative	A7C-FECV-AF Alternative
Alignment 7 Corridor-Ortega Highway Variation Alternative	A7C-OHV Alternative
Arterial Improvements Only Alternative	AIO Alternative*
Arterial Improvements Plus HOV and Spot Mixed-Flow Lanes on I-5 Alternative	AIP Alternative
I-5 Widening Alternative	I-5 Alternative*

* These alternatives were retained for detailed evaluation in this EIS/SEIR.

G.2 ACRONYMS FOR THE NO ACTION ALTERNATIVES

No Action Alternative-Orange County Projections - 2000	No Action Alternative-OCP-2000
No Action Alternative-Rancho Mission Viejo Development Plan	No Action Alternative-RMV

G.3 OTHER ACRONYMS

AAQS	Ambient Air Quality Standards
ac	acre, acres
ACOE	United States Army Corp of Engineers
AQMD	Air Quality Management District
AQMP	Air Quality Management Plan
ATRMP	Arroyo Toad Resource Management Plan
Base	Marine Corps Base Camp Pendleton
BAT	best available technology
BCT	best conventional technology
BMP, BMPs	Best Management Practice, Practices
BRMP	Biological Resources Management Plan
CAA, CAAs	Clear Air Act, Acts
Caltrans	California Department of Transportation
CCA	California Coastal Act
CCC	California Coastal Commission
CCMP	California Coastal Management Program
CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CDP	Coastal Development Permit
CESA	California Endangered Species Act
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Data Base
CNEL	Community Noise Equivalent Level
CO	carbon monoxide
CSS	coastal sage scrub
CTC	California Transportation Commission
CTMP	Construction Traffic Management Plan
CTP	California Transportation Plan
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
dB	decibels
dBA	decibels, A-weighted
DoD, DOD	United States Department of Defense
DON	United States Department of the Navy
DOT	United States Department of Transportation
DSMP	District System Management Plan
du, dus	dwelling unit, dwelling units
EDB, EDBs	extended detention basin, basins

EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EIS/SEIR	Environmental Impact Statement/Subsequent Environmental Impact Report
EPA	United States Environmental Protection Agency
ESA	Endangered Species Act
ESA, ESAs	Environmentally Sensitive Area, Areas
ETC	Eastern Transportation Corridor
FESA	Federal Endangered Species Act
F/ETC TCA	Foothill/Eastern Transportation Corridor Agency
FHWA	Federal Highway Administration
F.R.	Federal Register
FSTIP, FSTIPs	Federal State Transportation Improvement Program, Programs
ft	foot, feet
FTC	Foothill Transportation Corridor
FTC-N, FTC-North	Foothill Transportation Corridor – North
FTC-S, FTC-South	Foothill Transportation Corridor – South
FTIP, FTIPs	Federal Transportation Improvement Program, Programs
ha	hectare, hectares
HC	hydrocarbons
HOV, HOVs	High Occupancy Vehicle, Vehicles
I	initial
I-405	Interstate 405
I-5	Interstate 5
INRMP	Integrated Natural Resources Management Plan
JPA	Joint Powers Agency
Km, kms	kilometer, kilometers
km^2	square kilometers
kph	kilometers per hour
LEDPA	Least Environmentally Damaging Practicable Alternative
LOS, LOSs	level, levels of service
LUE, LUEs	Land Use Element, Elements
m	meter, meters
MCB	Marine Corps Base
MEP	Maximum Extent Practicable level
mi	mile, miles
MOU	Memorandum of Understanding
MPAH	Master Plan of Arterial Highways
mph	miles per hour
MPO, MPOs	metropolitan planning organization
MSAA	Master Streambed Alteration Agreement
N/A	not applicable or not available
NAC	Noise Abatement Criterion, Criteria
NCCP	Natural Community Conservation Plan

NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NOA	Notice of Availability
NOI	Notice of Intent
NOP	Notice of Preparation
NO_2	nitrogen dioxide
NO_X	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NRHP	National Register of Historic Places
O_3	ozone
OCP-2000	Orange County Projections – 2000
OCTA	Orange County Transportation Authority
Pb	lead
PC, PCs	Planned Community, Communities
PPM	Pacific pocket mouse
RMP	Runoff Management Plan
RMV	Rancho Mission Viejo
ROC	reactive organic compounds
ROG	reactive organic gases
RTIP, RTIPs	Regional Transportation Improvement Program
RTP, RTPs	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SAMP	Special Area Management Plan
SANDAG	San Diego Association of Governments
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SEIR	Subsequent Environmental Impact Report
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
sm	square meter, meters
SO_2	Sulfur dioxide
SO_X	Sulfur oxides
SOCTIIP	South Orange County Transportation Infrastructure Improvement Project
SONGS	San Onofre Nuclear Generating Station
SOSB	San Onofre State Beach
SOW, SOWs	Scope of Work, Scope of Works
sq km	square kilometer
sq mi	square mile
SR	State Route
SR 91	State Route 91
SR 241	State Route 241
STIP, STIPs	State Transportation Improvement Plan, Plans
SWMP	Storm Water Management Plan
SWPPP	Storm Water Pollution Prevention Plan

SWQCB	State Water Quality Control Board
SWRCB	State Water Resources Control Board
TCA	Transportation Corridor Agency, Agencies
T&E	threatened and endangered
TSM	Transportation Systems Management
U	ultimate
U.S.	United States
U.S.C., USC	United States Code
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USMC	Unites States Marine Corps
VHT	vehicle hours traveled
VMT	vehicle miles traveled
WoUS	Waters of the United States

G.4 MEASUREMENTS

The measurement units in this report are expressed in both metric and English units, with metric units followed by English units in parentheses. For ease of translation, the following conversions are included to allow the reader to better understand the measurements in the report.

English/Metric Conversion	**Metric/English Conversion**
AREA	AREA
1 square foot = 0.093 square meters 1 acre = 0.405 hectares, 4,047 square meters 1 square mile (640 acres) = 2.59 square kilometers	1 square meter = 10.764 square feet 1 hectare = 2.471 acres 1 square kilometer = 0.386 square mile
LENGTH	LENGTH
1 inch = 2.54 centimeters	1 centimeter = 0.394 inch
1 foot = 30.480 centimeter or 0.305 meter	--
1 yard = 0.914 meter	1 meter = 1.094 yards
1 mile = 1.609 kilometers	1 kilometer = 0.621 mile

EXECUTIVE SUMMARY

ES.1 INTRODUCTION

This Executive Summary is the summary of the Environmental Impact Statement/Subsequent Environmental Impact Report (EIS/SEIR) for the proposed South Orange County Transportation Infrastructure Improvement Project (SOCTIIP). This summary is also intended to provide an overview of the processes that have continued since release of the Draft EIS/SEIR.[1] This Executive Summary provides a condensed version of the technical information discussed in the EIS/SEIR and includes references to the complete sections of the environmental document for additional detailed analysis and discussion.

Additionally, this Executive Summary includes excerpts from the Responses to Comments document beginning at Section ES-9.6.

The EIS/SEIR describes the purpose and need for the proposed SOCTIIP; the alternatives being considered to address the defined project purpose and need; and the potential environmental impacts of those alternatives pursuant to the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). The EIS/SEIR is provided in five volumes which contain the EIS/SEIR technical analysis and the EIS/SEIR technical appendices. Technical reports prepared for the project analysis are also available for review, at locations listed in the Table of Contents in the EIS/SEIR.

The Foothill/Eastern Transportation Corridor Agency (TCA), a Joint Powers Authority (JPA), is the project sponsor for the SOCTIIP, which is also referred to as the Foothill Transportation Corridor-South (FTC-South). The TCA Board of Directors is composed of representatives from the local government agencies in the area of benefit of the Foothill Transportation Corridor-North (FTC) and the Eastern Transportation Corridor (ETC). Specifically, the TCA Board of Directors who would certify the SEIR consists of Orange County Supervisors for the 3rd, 4th and 5th Districts and Council Members from the Cities of Mission Viejo, Irvine, San Juan Capistrano, San Clemente, Orange, Anaheim, Santa Ana, Dana Point, Tustin, Yorba Linda, Rancho Santa Margarita and Lake Forest.

The Federal Highway Administration (FHWA) is the federal lead agency for the EIS, pursuant to NEPA and associated federal rules, regulations and Executive Orders. The United States Department of the Navy (DON), Marine Corps Base (MCB) Camp Pendleton is a Cooperating Agency for the EIS under NEPA. The TCA is the lead agency for the SOCTIIP pursuant to CEQA for the SEIR. The California Department of Transportation (Caltrans) is the state highway agency that performs oversight for transportation projects sponsored by local agencies and is a local responsible agency under CEQA for the SEIR.

ES.1.1 NEPA/Section 404 Integration Process

The SOCTIIP environmental document was prepared in compliance with the requirements of CEQA and NEPA and in a manner consistent with the NEPA/Section 404 Memorandum of Understanding (MOU). The NEPA/Section 404 MOU provides for federal resource agency coordination in identifying the project Statement of Purpose and Need, selecting the Alternatives for evaluation, and agreement of the Preferred Alternative leading to identification of the Least Environmentally Damaging Practicable Alternative (LEDPA). The federal agencies participating in this integration process are the Federal Highway

[1] There are changes and additions to this Executive Summary for this Final EIR as compared to the text in the Draft EIS/SEIR. The majority of these changes are shown in strikeout or redline to highlight the change. There are also some minor section numbering changes which are not highlighted.

Administration (FHWA), U.S. Environmental Protection Agency (EPA), U.S. Fish & Wildlife Service (USFWS), and U.S. Army Corps of Engineers (ACOE). The Department of the Navy through the Marine Corps Base-Camp Pendleton (MCB Camp Pendleton) is as a cooperating agency, and Caltrans is an active participant as the local liaison for FHWA. The NEPA/404 MOU agencies, MCB Camp Pendleton, Caltrans and the TCA are collectively referred to as the "SOCTIIP Collaborative:"

The NEPA/Section 404 Integration Process MOU was initiated during 1993 and 1994 among FHWA, Caltrans, EPA, ACOE, USFWS and NMFS on the processing of transportation projects to ensure that the requirements of NEPA, the Endangered Species Act and the CWA are met. NMFS declined to participate in this process.

On December 6, 1996 a letter was sent to the participating agencies that outlined the status of NEPA/Section 404 Integration Process as it relates to the FTC. At that time, the agencies were requested to concur with the purpose and need for the project and alternatives. Concurrence was achieved among the agencies and the purpose and need statement was finalized on March 26, 1999. In March and April 1999, the USFWS, ACOE and EPA, MOU signatory agencies, provided FHWA with their formal concurrence with the SOCTIIP Purpose and Need Statement.

The EPA and ACOE have preliminarily determined that the Preferred Alternative is the LEDPA. The USFWS has preliminarily indicated that the Preferred Alternative will comply with applicable requirements of the Endangered Species Act. These determinations reflect the evaluations by these agencies in the Collaborative process conducted over the last six years.

ES.2 PREFERRED ALTERNATIVE

ES.2.1 INTRODUCTION AND SUMMARY OF MAJOR FEATURES OF PREFERRED ALTERNATIVE

The following description provides detailed information about the Preferred Alternative, changes to the Preferred Alternative since circulation of the Draft EIS/SEIR, refinements to the Preferred Alternative, and the reasons for selection of the Preferred Alternative. The Preferred Alternative is the A7C-FEC-M-Intitial Alternative, but with the following primary modifications:

- **Reduction in Size of Project.** The Preferred Alternative is reduced in size from eight lanes to a maximum of six general purpose lanes. This modification reduces the typical cross-section of the project from 156 feet to 128 feet. Initially, the project will be constructed as a four-lane facility (two lanes in each direction).
- **Consistency With Anticipated NCCP Reserve Design.** The modifications conform to the anticipated reserve design for the Southern Orange County Natural Community Conservation Plan. In general, the RMV Ranch Plan (as reflected in the Settlement Agreement) concentrates the development on the RMV property in the western and northern portions of the RMV property. It is anticipated that the reserve design for the Orange County Southern Natural Community Conservation Plan will be consistent with the Ranch Plan.
- **Modifications Regarding RMV Ranch Plan to Maximize Open Space.** The alignment of the Preferred Alternative is revised to conform as much as is feasible to the areas shown for development in the Ranch Mission Viejo (RMV) Ranch Plan approved by the County of Orange as modified by the Settlement Agreement among RMV, the County and the environmental organizations (the Endangered Habitats League, Natural Resources Defense Council, Sea and Sage Audubon Society, Laguna Greenbelt, Inc., and Sierra Club). The RMV Plan (as reflected in the Settlement Agreement) contemplates the development of 14,000 units and 3,480,000 square feet of urban activity center uses,

500,000 square feet of neighborhood center uses and 1,220,000 square feet of business park uses in six development areas. By including as much of the Preferred Alternative within the development areas as is feasible, impacts on open space and habitat areas are minimized.

- **Minimization of Impacts on Wetlands and Other Natural Resources.** The Preferred Alternative includes a number of adjustments that avoid or minimize impacts to wetlands and other natural resources. For example, the Preferred Alternative impacts only 0.82 acre of wetlands.
- **Adjustments to Minimize Utility Relocation Impacts.** Utility relocation impacts are minimized to conform to Caltrans standards.
- **Inclusion of Additional Wildlife Crossings.** Fifteen wildlife crossings are included to further facilitate wildlife movement. Wildlife crossings are included within the four large habitat blocks identified in the approved Ranch Plan open space reserves. These large open spaces areas are functionally interconnected though bridge and wildlife crossings incorporated into the design of the Preferred Alternative and through the project design features associated with the approved Ranch Plan.
- **Minimization of Access Road Impacts.** The design of the connections between the Preferred Alternative and access roads is modified to further minimize grading and to insure continued access to existing utility and agricultural operations on the Ranch.
- **Minimization of Cultural Resources Impacts.** The location and design of several Extended Detention Basins is modified to reduce impacts on cultural and biological resources.

ES.2.1.1 Preferred Alternative Refinement

The Preferred Alternative incorporates the refinements above in response to comments on the Draft EIS/SEIR and reflects detailed discussions among the U.S. Fish and Wildlife Service, the U.S. Environmental Protection Agency, the U.S. Army Corps of Engineers, the U.S. Marine Corps, the Federal Highway Administration, Caltrans, the TCA, and the California Department of Fish and Game. These and other changes are discussed further in Table 2.2-1 in Section 2.0 of the Final SEIR and included in Common Response Preferred Alternative-1 at the end of this Executive Summary.

Additional analysis of the Preferred Alternative is provided in each topical section of this EIS/SEIR. The additional analysis includes an investigation of potential environmental effects expected from the Preferred Alternative that may be different from those identified in the Draft EIS/SEIR. The Preferred Alternative does not result in any new significant impacts and does not increase the severity of any impact of the A7C-FEC-M Alternative. The Preferred Alternative reduces the impacts of the A7C-FEC-M Alternative in several respects.

ES.2.2 PROJECT DESCRIPTION

The Preferred Alternative is a limited access highway that would extend the existing SR-241, (FTC-N), south from its existing southern terminus at Oso Parkway to I-5 in the vicinity of the Orange/San Diego County line. This extension would be operated as a toll road, as are the existing portions of SR-241.

The Draft EIS/SEIR provided detailed information regarding all of the alternatives evaluated in the Draft EIS/SEIR. The Preferred Alternative is the initial corridor described for the A7C-FEC-M Alternative with the modifications described above in Section ES-2.1.

ES.2.2.1 Preferred Alternative Description

The Preferred Alternative is approximately 26 km (16 mi) long plus approximately 1.3 km (0.8 mi) of improvements on the I-5. The proposed facility includes four general-purpose travel lanes, two in each direction, for the entire length of the corridor. Two additional lanes will be added in the future as traffic conditions warrant. Key components of the Preferred Alternative include continuous mainline travel lanes and ramps south of Oso Parkway, several wildlife structures/bridges to facilitate wildlife movement, an approximately 2,100 foot bridge structure crossing San Juan Creek, a toll plaza north of Ortega Highway, ramp toll plazas at Cow Camp Road and Avenida Pico, an approximately 2,859 foot elevated bridge structure spanning San Mateo Creek and I-5 providing a direct connection to I-5, and reconstruction of the existing I-5 Basilone Road interchange.

Figure 2.2-1 in Section 2.0 of the Final SEIR shows the anticipated disturbance limits, which include the grading limits, remedial grading limits, right-of-way limits, utility relocation, and construction staging areas for the Preferred Alternative. The Preferred Alternative is limited to a maximum of six lanes.

The Preferred Alternative is divided into five approximately equal segments shown on Figures 2.2-2–2.2-6 (Sheets 1 through 5) in Section 2.0 of the Final SEIR. These sheets provide a means of illustrating the proposed project in greater detail but are not intended to show construction segments. These figures show the A7C-FEC-M Alternative as presented in the Draft EIS/SEIR and the Preferred Alternative and illustrate areas where the alignment is refined. A general description of each sheet is provided below. The sheets overlap, therefore the total length of the Preferred Alternative on each of the sheets totals more than the actual length.

Sheet 1 (Figure 2.2-2): Sheet 1 shows the Preferred Alternative from the existing terminus of the FTC-N at Oso Parkway, on the east side of Cañada Chiquita It extends south through Cañada Chiquita and terminates approximately 0.5 km south of the Goodwin Ridge fire road.

Sheet 2 (Figure 2.2-3): Sheet 2 shows the Preferred Alternative segment extending south on the ridge that separates Cañada Chiquita and Cañada Gobernadora, past the Cañada Chiquita Water Reclamation Plant, traversing San Juan Creek and Ortega Highway to just north of the Olgebay-Norton Sand Quarry.

Sheet 3 (Figure 2.2-4): Sheet 3 starts just north of the Olgebay-Norton Sand Quarry and extends south through The Donna O'Neill Land Conservancy (The Conservancy), terminating just east of Talega.

Sheet 4 Figure 2.2-5): Sheet 4 starts just east of Talega and just west of the Northrup-Grumman Capistrano Test Site. The alignment travels south, crossing the Orange County/San Diego County boundary and onto Marine Corps Base (MCB) Camp Pendleton (San Onofre State Beach Leasehold) in San Diego County.

Sheet 5 (Figure 2.2-6): Sheet 5 shows the corridor continuing south across Camp Pendleton (through the San Onofre State Beach Leasehold) to I-5 with direct connectors between the corridor and I-5.

Section 2.0 provides a more specific indication of the changes and the reasons for the change. The total footprint of the Preferred Alternative is 1,194 ac (483 ha). This includes areas for grading, remedial grading, and construction disturbance, areas for paved roads and associated bridges and interchanges, access roads, materials storage areas, areas for utility relocations and areas for the construction of Best Management Practices (BMPs) (such as EDBs and other water quality features). The total area within the disturbance limits was 492 hectares (1,216 acres) for the A7C-FEC-M-Initial Alternative and 507 ha (1,254 ac) for the Ultimate. The Preferred Alternative is 483 hectares (1,194 acres). The reduction in the total disturbance area limits for the Preferred Alernative is approximately 23 acres compared with the

A7C-FEC-M-Initial Alternative, and 37 acres compared with A7C-FEC-M-Ultimate Alternative. The Preferred Alternative is proposed at a width that is the same as the initial corridor identified in the Draft EIS/SEIR and would be a maximum of six lanes.

A summary of the change in environmental effects between the A7C-FEC-M Initial and the Preferred Alternative is provided for each of the topics included in Section 4.0 of the Final EIS/SEIR.

ES.2.3 BACKGROUND TO THE IDENTIFICATION OF THE PREFERRED ALTERNATIVE - NEPA, CLEAN WATER ACT AND ENDANGERED SPECIES ACT INTEGRATION PROCESS

ES.2.3.1 History of Foothill Transportation Corridor South Planning – Project Alternatives

The FTC-S, the proposed southern extension of the FTC-N, has been the subject of continuing planning efforts for over 20 years. Prior studies completed for the FTC-S include EIR No.123 certified by the County of Orange in 1981. That EIR resulted in a conceptual alignment for a transportation corridor facility being placed on the County Master Plan of Arterial Highways (MPAH). Between 1989 and 1991, the TCA prepared TCA EIR No. 3, which addressed the C and BX road alignments, selected as part of the Alternatives Analysis phase of the project, as the primary build Alternatives. This effort concluded with the certification of the EIR and the selection of the locally Preferred Alternative by Foothill/Eastern Transportation Corridor Agency Board of Directors.

In December 1993, the TCA initiated the preparation of a Subsequent EIR to evaluate the CP Alignment, the BX Alignment and the No build Alternative. The CP Alignment is a refinement of the C Alternative and is similar to the FEC-M Alternative described in the Draft EIS/SEIR. The BX Alignment is identical to the CC Alternative described in this Draft EIS/SEIR. Subsequent to this effort, the project was mandated to participate in the NEPA/Section 404 MOU process. Between August 1999 and November 2000, the NEPA/Section 404 MOU signatory agencies and the TCA developed the project Alternatives to be evaluated in this Draft EIS/SEIR. The NEPA/404 MOU agencies (U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, U.S. Army Corps of Engineers, Federal Highway Administration, Caltrans, as well as the U.S. Marine Corps) and the TCA are collectively referred to as the "SOCTIIP Collaborative."

During the course of Phase I of the SOCTIIP Collaborative process (August 1999-November 2000), the Collaborative developed a list of alternatives for evaluation in the SOCTIIP project's NEPA and Section 404 process. The Phase I Collaborative identified several Alternatives for evaluation.

It was during this time that the Central Corridor-Complete (CC-Alternative was previously referred to as the BX Alternative) and the Far East Alternative (CP Alternative) were evaluated to determine optimal alignments. The TCA/FHWA defined the Alignment 7 Corridor Alternative (A7C Alternative) as an Alternative to the CC Alternative to avoid and/or reduce impacts to the significant biological resources in the upper and middle Chiquita areas. The A7C-Alternative represents a shift to the east to move the alignment out of Cañada Chiquita including its primary drainage course and to avoid the wetlands area at the confluence of Cañada Chiquita and San Juan Creek, and at the Segunda Deshecha wetlands complex. Additionally, this shift minimized impacts to sensitive habitat including coastal sage scrub. Similarly, other Alternatives to the CC Alternative were created (i.e., Alignment 7 Corridor Swing Variation (A7C-7SV) Alternative, the Alignment 7 Corridor-Far East Crossover Variation (A7C-FECV) Alternative and the Alignment 7 Corridor Ortega Highway Variation (A7C-OHV) Alternative). The A7C Alternatives and its variations were created as Alternatives to the CC Alternative.

In November 2000, the SOCTIIP Collaborative concurred on the Alternatives to be evaluated in the technical studies supporting the Draft EIS/SEIR. The Collaborative agreed to 24 Alternatives for evaluation in the technical analysis. These include 19 toll road Alternatives, 3 non-toll Road Alternatives and 2 no action Alternatives.

During Phase II of the SOCTIIP Collaborative (January 2001-Present), the TCA sought to further refine the Alternatives to minimize impacts to sensitive environmental resources. During that time the FHWA/TCA realized that the socioeconomic impacts of the Alternatives that connected to the I-5 at Pico Avenue could not be appreciably avoided by specifically refining those Alternatives. Development in the City of San Clemente had increased substantially, especially in the undeveloped areas where the Foothill-South Corridor Alignments were proposed.

Table ES.2-1 represents the results of the avoidance/minimization efforts conducted by the TCA in coordination with the SOCTIIP Collaborative. The C Alignment (CP Alignment), which was selected as the Preferred Alternative in 1991 had much greater environmental impacts than either the FEC-M or the Preferred Alternative. The continued refinement of the SOCTIIP alternatives has resulted in an alternative that is significantly superior to the CP alternative. Most notably, impacts to ACOE jurisdictional wetlands have been minimized to 0.82 acres from the previously delineated 17.0 acres of impact. Occupied Pacific Pocket mouse habitat was avoided through refinement efforts to the Preferred Alternative. The total disturbance limits for the Preferred Alternative have been reduced approximately 30 percent resulting in significantly less impact to the natural environment.

Table ES.2-1
Comparison of Environmental Impacts CP, FEC-M, Preferred Alternatives

	CP Alignment	FEC-M Alignment	Preferred Alternative
Total Area of Disturbance	1735 acres	1274 acres	1194 acres
Plant Communities			
Venturan-Diegan Coastal Sage Scrub (2.3)	537.5 acres	443.9 acres	385.3 acres
Thread-leaved brodiaea			
Population	13	6	3
Counts	384	94	16
Wetlands			
Riparian Ecosystems (Dan Smith, June 2003)	160.1 acres	53.4 acres	42.9 acres
ACOE Wetlands (GLA)	17 acres	1.99 acres	0.82 acres
ACOE Non-wetland water (GLA)	20.28 acres	4.01 acres	5.45 acres
Wildlife			
Arroyo Toad (use areas)	6	2	2
Coastal California Gnatcatcher (use areas)	23	13	9
Least Bell's vireo (use areas)	2	0	0
Pacific Pocket Mouse	Occupied Habitat Affected	No Occupied Habitat Affected	No Occupied Habitat Affected
Consistency with NCCP Reserve Design	Low	Low	High

Source: TCA, 2005

ES.2.3.2 The NEPA/Section 404 Collaborative Process

The Preferred Alternative is the product of twenty years of analysis of the southern extension of State Route 241 by local and state transportation planning agencies and six years of extensive discussions and analysis by state and federal transportation and environmental agencies including the U.S. Fish and

Wildlife Service, the U.S. Environmental Protection Agency, the U.S. Army Corps of Engineers, the U.S. Marine Corps, the Federal Highway Administration, the California Department of Transportation and the Foothill/Eastern Transportation Corridor Agency. All of the above agencies (collectively known as the "Collaborative") participated in a rigorous six year evaluation of the SOCTIIP pursuant to the provisions of the 1994 Memorandum of Understanding entered into between the federal transportation and resource agencies. Memorandum of Understanding – National Environmental Policy Act and Clean Water Act Section 404 Integration Process for Surface Transportation Projects in Arizona, California and Nevada (the "NEPA/404 MOU").

In 1994, the Federal Highway Administration, the U.S. Environmental Protection Agency, the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service and Caltrans entered into the NEPA/404 MOU concerning the evaluation of federally-approved transportation projects in Arizona, California and Nevada under NEPA, section 404 of the Clean Water Act and the Endangered Species Act. The NEPA/404 MOU provides the following:

> The signatories to this MOU are committed to integrating NEPA and section 404 of the Clean Water Act in the transportation planning, programming, and implementation stages. We are committed to ensuring the earliest possible consideration of environmental concerns pertaining to waters of the U.S. . . . We place a high priority on the avoidance of adverse impacts to waters of the U.S. and associated sensitive species, including threatened and endangered species. Whenever avoidance of waters of the U.S. is not practicable, minimization of impacts will be achieved, and unavoidable impacts will be mitigated to the extent reasonable and practicable. We will improve interagency cooperation and consultation at all levels of government throughout the process. We will integrate compliance with the Section 404(b)(1) Guidelines with compliance with the National Environmental Policy Act.

The NEPA/404 MOU requires the signatory agencies to the MOU to integrate agency evaluations of highway projects under NEPA, the Clean Water Act and the Endangered Species Act in a single, coordinated process that insures compliance with NEPA, the Clean Water Act and the Endangered Species Act. The NEPA/Section 404 MOU provides for early and continued involvement of the federal transportation and resource agencies with regulatory jurisdiction over transportation projects. The described benefits of the NEPA/404 MOU are to:

1. Improve cooperation and efficiency of governmental operations at all levels, thereby better serving the public,

2. Expedite construction of necessary transportation projects, with benefits to mobility and the economy at large,

3. Enable more transportation projects to proceed on budget and on schedule, and

4. Protect and enhance the waters of the U.S., which will benefit the region's aquatic ecosystems and the public interest.

The NEPA/404 MOU ensures that the requirements of the three major federal environmental laws governing transportation projects are addressed in the NEPA document. The MOU seeks to insure that the Preferred Alternative identified by the Federal Highway Administration under NEPA also satisfies the regulatory requirements of section 404 of the Clean Water Act and Section 7 of the Endangered Species Act. In general, section 404 of the Clean Water Act requires avoidance and minimization of impacts on wetlands and other waters of the U.S. when practicable. Section 7 of the Endangered Species Act

requires federal agencies to consult with the U.S. Fish and Wildlife Service on impacts to threatened and endangered species and requires the federal agencies to avoid actions that jeopardize the continued existence of threatened and endangered species or that destroy or adversely modify critical habitat.

The NEPA/404 MOU includes the following major steps:

1. Development of preliminary agreement on NEPA purpose and need and section 404 basic and overall project purpose, identification of criteria for alternate selection, and identification of project alternatives for evaluation.

2. Holding scoping meetings.

3. Development of Draft EIS including agreement on:

   - NEPA purpose and need and section 404 project purpose
   - Criteria for alternative selection
   - Project alternatives to be evaluated in the draft EIS

4. Coordination of environmental inventory/impact evaluation.

5. Final EIS Development, including.

   - Preliminary agreement with Fish and Wildlife Service in the project mitigation plan
   - Corps of Engineers and U.S. EPA preliminary identification of least environmentally damaging practicable alternative

6. FHWA Final EIS approval.

7. FHWA development of record of decision.

8. Corps of Engineers permit decision.

Over the last six years, the members of the SOCTIIP Collaborative process have completed Steps 1 through 4 and are in the process of completing Step 5 of the above progression. The U.S. Army Corps of Engineers and the U.S. Environmental Protection Agency recently issued their preliminary agreement that the Preferred Alternative is the least environmentally damaging practicable alternative. The U.S. Fish and Wildlife Service has preliminarily determined that the Preferred Alternative complies with the requirements of the Endangered Species Act. The following sections briefly describe the process utilized by the state and federal agencies to identify the Preferred Alternative.

ES.2.3.3 Purpose and Need

Sections 2.1, 2.3, 2.4, 2.5, and 2.6 of the Final SEIR address in detail the screening process used to identify the alternatives analyzed in the Draft EIS/SEIR, including alternatives from earlier phases, the NEPA/404 MOU Integration Process, No Action Alternatives, and Corridor, AIO, and I-5 Alternatives. The Draft EIS/SEIR released in May 2004 evaluated eight build and two No Action Alternatives. The Collaborative selected these alternatives for analysis in the Draft EIS/SEIR because of their ability to address the purpose and need of the project and because the alternatives included a broad range of alternatives including six corridor build alternatives, two non-corridor build alternatives and two no action

alternatives. The Draft EIS/SEIR also included several land use development scenarios so that the impacts of the alternatives could be compared using different assumptions regarding future growth in the SOCTIIP area.

The purpose of the SOCTIIP is to provide improvements to the transportation infrastructure system that would help alleviate future traffic congestion and accommodate the need for mobility, access, goods movement, and future traffic demands on I-5 and the arterial network in the action area. The Preferred Alternative meets this purpose because it provides the number of traffic lanes necessary to meet forecasted traffic demand through 2025, which is the design forecast year for the SOCTIIP and the planning horizon year for regional plans and socioeconomic forecasts. The Preferred Alternative also meets the purpose because it accommodates the need for mobility, access, and goods movement by providing increased traffic capacity and because it provides an alternative route to I-5.

One of the project purposes is to improve the projected future level of service (LOS) and reduce the amount of congestion and delay on the freeway system and, as a secondary objective, the arterial network, in southern Orange County. The overall goal is to improve projected levels of congestion and delay as much as is feasible and cost-effective. This may include strategies that lead to a reduction in the length of time LOS F will occur, even if the facility will still operate at LOS F for a short period of time, if the strategy will result in benefits to the traveling public and more efficient movement of goods by reducing total delay. The Preferred Alternative furthers this objective by increasing overall regional capacity and reducing congestion on I-5 and local arterials.

For additional information regarding the purpose and need of the project, refer to Section 1.0 of this document.

ES.2.3.4 Process for Identification of the Preferred Alternative

Selection of the Preferred Alternative represents a coordinated, and balanced approach to minimizing harm to both the natural and built environments.

The Draft EIS/SEIR included a comprehensive evaluation of six corridor build alternatives, two non-corridor build alternatives and two no build alternatives. After release of the Draft environmental document and review of the comments received on the Draft EIS/SEIR, the SOCTIIP Collaborative began a multi-dimensional evaluation of the alternatives in order to identify a Least Environmentally Damaging Practicable Alternative (LEDPA). Using Table ES.6-1 and other information in the Draft EIS/SEIR, the Collaborative prepared a comprehensive matrix to assist in evaluating the alternatives using several parameters including: traffic conditions, air quality, aquatic resources (including compliance with Section 404 of the Clean Water Act/CDFG Streambed Alteration Program), water quality, endangered species impacts (including compliance with Section 7 of the ESA), socioeconomic impacts, land use impacts, military impacts on MCB Camp Pendleton, earth resources, cultural and historic resources, recreational resources, and project costs. The Collaborative used this multi-layer process to determine which alternatives were likely to qualify as the LEDPA. For more information on the LEDPA selection process, refer to Section 2.0 in the Final SEIR.

The Collaborative thoroughly reviewed and discussed the evaluation matrix at several SOCTIIP Collaborative meetings. The Collaborative used the evaluation matrix to screen those Alternatives that might qualify as the least environmentally damaging practicable alternative. The Collaborative determined that the shorter alternatives (CC-ALPV and A7C-ALPV) do not provide a substantial improvement in traffic conditions but do result in less effects to the natural environment because these alignments were shorter and crossed areas that had recently been developed. The CC Alternative, while providing good traffic relief, entails very substantial adverse impacts on the human and built environment

and on socioeconomics because it requires the removal of 763 homes and 106 businesses. The CC Alternative also has adverse impacts to endangered species, habitat loss and fragmentation, and has high wetland impacts. The full-length alternatives (FEC-M, FEC-W and A7C-FEC-M) perform well in traffic relief, minimize impacts on the built environment (because they do not require acquisition of homes or businesses) but have adverse impacts to endangered species, habitat loss and fragmentation, and wildlife connectivity.

Recognizing that the selection of the Preferred Alternative required assessment of its regional significance, the SOCTIIP Collaborative agreed that the selection of the Preferred Alternative required a balanced approach that evaluated the compatibility of the Preferred Alternative with the ongoing Orange County Southern Natural Community Conservation Plan (NCCP) and Special Area Management Plan (SAMP) processes. The Collaborative agreed to consider the alternatives in relation to the evaluation matrix and the NCCP and SAMP planning processes. These planning processes have implications for the SOCTIIP because they will determine the location and extent of development and open space uses in the SOCTIIP study area.

The Collaborative recognized that the impacts of a preferred alternative could be further reduced by insuring that the alternative is located as much as possible in an area contemplated for development in the NCCP and SAMP. Doing so has the further advantages of minimizing fragmentation of habitat and minimizing cumulative and growth-inducing impacts.

ES.2.3.4.1 Practicability

The Collaborative considered the regulations and guidance documents prepared by the U.S. Army Corps of Engineers and the U.S. EPA concerning the NEPA/404 MOU and the Section 404(b)(1) Guidelines for the discussion of practicability. The 404(b)(1) Guidelines define the concept of a "practicable alternative" as one that is available[2] and capable of being done[3] after taking into consideration: (1) cost[4]; (2) existing technology; and (3) logistics in light of the overall project purposes.

The Collaborative measured each alternative against the criteria described in the Section 404(b)(1) Guidelines, guidance documents and applicable case law. The NEPA/404 guidance paper lists seven criteria for evaluating the practicability of alternatives, six of which are relevant to SOCTIIP (one is transit-related). According to the Guidance Paper, an Alternative is not considered practicable if:

a. It does not meet the project purpose and need;
b. Cost of construction (including mitigation) is excessive;
c. There are severe operational or safety problems;
d. There are unacceptable adverse, social, economic, or environmental impacts;
e. There would be serious community disruption;
f. There are unsuitable demographics (for transit Alternatives); and
g. There are logistical or technical constraints.

The Collaborative applied the seven criteria listed to the eight SOCTIIP Alternatives. Based on that evaluation, the following SOCTIIP Alternatives were determined to be not practicable: Central Corridor (CC) (yellow); Central Corridor-Avenida La Pata (CC-ALPV) (light orange); Alignment 7 Corridor-

[2] "Available" means obtainable for meeting the project purposes. Available site may include property already owned by a permit applicant, as well as properties that could be obtained, utilized, expanded, or managed.

[3] "Capable of being done" means that it is possible to achieve the basic purpose on a given site, after consideration of cost, existing technology, and logistics.

[4] If an Alternative is unreasonably expensive to the applicant, the Alternative is not practicable.

Avenida La Pata (A7C-ALPV) (dark orange); Arterial Improvements Only (AIO) (blue); the I-5 Widening Alternative (I-5) (red); and the No Action Alternatives.

The reasons for the determinations are as follows:

Criterion 1: It does not meet the project purpose and need
- No Action Alternatives

Criterion 2: Cost of construction (including mitigation) is excessive
- CC Alternative
- I-5 Widening Alternative
- A7C-ALPV Alternative
- AIO Alternative

Criterion 3: There are severe operational or safety problems
- CC Alternative

Criterion 4: There are unacceptable adverse, social, economic, or environmental impacts
- CC Alternative (aquatic resources, built environment and social and economic impacts)
- CC-ALPV Alternative (aquatic resources, built environment and social and economic impacts)
- A7C-ALPV Alternative (built environment, social and economic impacts)
- AIO Alternative (built environment, social and economic impacts)
- I-5 Widening Alternative (built environment, social and economic impacts)

Criterion 5: There would be serious community disruption
- CC Alternative
- CC-ALPV Alternative
- A7C-ALPV Alternative
- AIO Alternative
- I-5 Widening Alternative

Criterion 6: There are unsuitable demographics
- None. (This criterion applies to mass transit Alternatives, not highway Alternatives)

Criterion 7: There are logistical and technical constraints
- AIO Alternative
- I-5 Widening Alternative

Using the above criteria, FHWA, Caltrans and TCA proposed that the Collaborative consider the Far East Crossover-Modified (FEC-M) (purple); the Far East Crossover-West (FEC-W) (lavender); and the Alignment 7 Corridor-Far East Crossover-Modified (A7C-FEC-M) (green) to be practicable alternatives for further consideration by the Collaborative.

After review and discussion of the joint proposal, the Collaborative agreed that the AIO Alternative and the I-5 Widening Alternative were not practicable because of the absence of available funding. There is

no established funding for the I-5 or AIO alternatives. No potential funding sources have been identified or reserved for these alternatives. There was also recognition of the severe community disruption that would occur with implementation of the CC Alternative, CC-ALPV Alternative, and the A7C-ALPV Alternative. The Collaborative then evaluated whether the above alignments could be further modified to avoid severe community disruption.

The Collaborative agreed that it would consider all factors related to the human and natural environment when identifying a practicable alternative that results in least environmental harm, i.e., the LEDPA.

ES.2.3.4.2 Comparison of A7C-FEC-M, FEC-W and FEC-M Alternatives

The Collaborative agreed that there were opportunities to adjust the A7C-FEC-M, FEC-W and FEC-M alternatives to accomplish further avoidance of impacts. Several members of the Collaborative agreed that the A7C-FEC-M alternative appeared to be less environmentally damaging than the FEC-W and FEC-M alternatives. To further evaluate the practicability of these three alternatives, the TCA, FHWA, and Caltrans reviewed and compared the individual impacts of each alternative. The comparison indicates that the A7C-FEC-M Alternative is environmentally preferable to the other two alternatives.

Advantages of the A7C-FEC-M that were considered in the selection process are presented briefly below.

Preservation of Large Blocks of Open Space and Retention of Wildlife Corridors. The FEC-W and FEC-M cross Cañada Gobernadora and bifurcate open space areas east of the A7C-FEC-M Alternative. The FEC-M alternative has the greatest impact on existing open space and has an adverse impact on retention of large blocks of open space on the RMV property. The FEC-M alternative is in very close proximity to Cristianitos Creek and impacts a large number of thread leaved brodiaea plants. The A7C-FEC-M Alternative (the Preferred Alternative), with its more western location minimizes impacts on open space areas by being located in proximity to existing development and within the areas approved for development in the Ranch Plan. It allows for retention of large blocks of open space east of the alignment and retains major wildlife movement corridors and allows greater wildlife connectivity between the RMV property and the Cleveland National Forest.

The Preferred Alternative incorporates bridges and wildlife crossings into the design to minimize the effect of habitat fragmentation. The NCCP/HCP identifies several important linkages connecting these open space habitat block areas. Out of the 20 habitat linkages and wildlife movement areas identified from field surveys in the NCCP/HCP planning area, 15 are applicable to the wildlife corridor existing conditions in the SOCTIIP biological study area. Bridge, arch culverts, and box culverts that provide for wildlife undercrossings of the Preferred Alternative have been incorporated into the project design at locations that are consistent with the linkages identified pursuant to the NCCP/HCP guidelines.

Consistency with Approved Land Use Plans. The Rancho Mission Viejo Company (RMV) expressed opposition to the FEC-W alternative because of its proximity to the RMV heritage sites (cow camp and the family cemetery).

The Preferred Alternative generally transects the center portion of the Ranch Plan, including Planning Areas 2 and 5 designated for development as well as areas designated as open space (Planning Area 10) in the approved Settlement Agreement Plan. The Preferred Alternative avoids impacts to large areas dedicated to resource open space in the eastern portion of the Ranch Plan referred to as the "Eastern block." Overall, the alignment would impact approximately 257 acres designated open space and infrastructure in the Ranch Plan reflected in the Settlement Agreement. This represents 1.42 percent of the 16,945 acre open space in the Ranch Plan. This occurs where the Preferred Alternative traverses the northern portion of Planning Area 2 within the area from Planning Area 2 over San Juan Creek into

Planning Area 5. A portion of this impact from the Preferred Alternative represents the alignment on bridge structure. Figure 2.2-1 illustrates the compatibility of the Preferred Alternative with the proposed Ranch Plan and future NCCP design, and demonstrates that the SOCTIIP Preferred Alternative is compatible with both these regional planning processes.

ES.2.3.4.3 Benefits of the Preferred Alternative

Congestion Relief and Increased Mobility. The I-5 freeway in south Orange County, between El Toro Road and the county line, will realize considerable traffic benefits from construction of the Preferred Alternative. With implementation of the Preferred Alternative, the deficient segments are reduced to only 3 segments in the AM and 3 segments in the PM peak periods. Traffic forecasts for the year 2025 indicate that if the No Action Alternative is adopted there will be 10 deficient segments in the AM and 10 deficient segments in the PM peak hour periods along this segment of the I-5.

Another benefit of the Preferred Alternative is that the I-5 freeway segments that are deficient will remain that way for a much shorter period of time when compared to the No Action scenario. For example, in 2025 under the No Action Alternative four sections of the I-5 between Ortega Highway and Camino Estrella are forecast to experience more than 4 hours of LOS F congestion in the PM. With construction of the Preferred Alternative, only one of these segments, between Ortega Highway and Camino Capistrano, will be deficient and the time in which the congestion will last is reduced from more than four hours to two hours or less.

Traffic relief on the local arterials is also a component of the project Purpose and Need that is achieved by the Preferred Alternative. In 2025 under the No Action Alternative, there are forecast to be 13 arterial intersections that are considered deficient during AM and PM peak hours. With the Preferred Alternative the number of deficient intersections is reduced from 13 to 4 in the AM and from 13 to 6 in the PM peak hours.

Forecasts for the year 2025 indicate that traffic congestion on the I-5 and local arterials in south Orange County will increase significantly from present levels. Implementation of the Preferred Alternative will result in considerable beneficial impacts that will reduce the anticipated traffic congestion.

Compatibility with Regional Planning: The TCA evaluated the Preferred Alternative for its compatibility with the Natural Communities Conservation Plan (NCCP) and the proposed Rancho Mission Viejo Ranch Plan. The Preferred Alternative is compatible with the Ranch Plan as reflected in the Settlement Agreement because the Preferred Alternative is located adjacent to existing development or within the areas shown for development in the Ranch Plan and Settlement Agreement wherever feasible. As a result, the Preferred Alternative retains the large blocks of open space contemplated for the RMV property in the Ranch Plan and the Settlement Agreement. The NCCP is anticipated to be similar to the Ranch Plan as reflected in the Settlement Agreement. Also refer to Response to Comments Attachment 10 "SOCTIIP Analysis of the NCCP/HCP Planning Guidelines and SAMP/MSAA Watershed Planning Principles" for a complete analysis of the Preferred Alternative compatibility/consistency with NCCP/HCP reserve design guidelines and the SAMP/MSAA Watershed Planning Principles.

Improved Water Quality on I-5: I-5 currently has no water runoff treatment system in the vicinity of Trestles beach. With each storm event, untreated water from the I-5 freeway runs directly into the creeks and ocean, potentially polluting Trestles Beach. TCA will install treatment systems meeting Regional Water Quality Control Board standards on the new roadway and an approximately two-mile portion of I-5 north and south of the connection to SR-241. SOCTIIP would construct extended detention facilities to treat the runoff from this existing portion of I-5 as well as the new connector roadways from the project. Based on engineers' calculations, nearly one million gallons of runoff per design water quality storm

event (those storms with about 0.6-inch of rain) would receive treatment with the project. Over the past two years of record, about five design water quality events have occurred annually. Using this estimate, the project would treat five million gallons of water each year that currently flows untreated into San Onofre and San Mateo Creeks.

Emergency Evacuation Benefits: I-5 is the major emergency evacuation route for SONGS, and is virtually the only non-signalized evacuation route between SONGS and I-405 to the north. Ortega Highway, north of SONGS, provides a route from I-5 to the east that is two lanes and non-signalized over most of its length. The Preferred Alternative would provide an additional evacuation route from I-5, immediately south of San Clemente, to Ortega Highway and to State Route 241 (SR-241), north of Ortega Highway and east of I-5. To the north, SR-241 connects with State Route 91 to the east, affording access to Riverside and Los Angeles Counties, and connects to I-5 and I-405 to the west, providing access to the north and northwest, respectively. The Preferred Alternative would have the beneficial effect of increasing the speed at which evacuations could be completed and would provide an alternate route should I-5 become impassable for some reason.

Avoids/Minimizing Environmental Impacts:

The Preferred Alternative has the following additional environmental benefits:

- It avoids impact to high value wetlands in the Tesoro wetlands area – ramps for the Oso Parkway Interchange were shifted to the east to avoid Tesoro Wetlands.
- It avoids crossing of Cañada Gobernadora which is the location of Gobernadora Environmental Reserve Area.
- It bridges over San Juan Creek. A 2,100-foot long and 60-foot high bridge structure will cross over San Juan Creek allowing virtually unobstructed water flow and continued wildlife movement.
- It minimizes visual impacts to Talega residents by keeping the alignment behind a natural ridgeline. There was an extensive design effort to locate the alignment behind the existing ridgeline to minimize views of the road by homeowners.
- It avoids the Blind/Gabino wetlands located at the confluence of Blind Canyon and Gabino Canyon
- It avoids occupied Pacific Pocket Mouse habitat.
- It bridges over San Mateo Creek. TCA minimized impacts to jurisdictional waters by reducing the size and number of structural supports in San Mateo Creek by locating those required structural columns outside of high value jurisdictional resources. In order to reduce the number of structural columns, TCA maximized bridge span by increasing the structural strength of the bridge and increasing the bridge depth. The 3,200 feet long bridge over San Mateo Creek and existing I-5 minimizes impacts to San Mateo creek and wetlands.

ES.2.3.5 Least Environmentally Damaging Practicable Alternative (LEDPA)

The agencies represented in the Collaborative rigorously evaluated the alternatives described in the technical reports and in the Draft EIS/SEIR.

The NEPA/Section 404 MOU establishes a process for the federal transportation and environmental agencies to identify the project Purpose and Need, select alternatives for evaluation in the Draft EIS/SEIR, and select the Preferred Alternative and Least Environmentally Damaging Practicable Alternative (LEDPA).

Section 404 of the Clean Water Act (CWA) requires that all appropriate and practicable steps must be undertaken by the applicant to first avoid and then minimize adverse impacts to the aquatic ecosystem prior to incorporating compensatory mitigation. The Refinement Process discussed in Section 4.10 of the Draft EIS/SEIR as well as the PDFs and BMPs discussed in Sections 4.8, 4.9, 4.10 and 4.11 provide the framework for avoidance and minimization of impacts to jurisdictional waters to the maximum extent practicable.

Specifically, direct impacts to both wetlands and non-wetland waters were avoided and/or minimized during the Refinement Process discussed in Section 4.10 in the Draft EIS/SEIR. Avoidance and minimization measures included refining the grading limits to reduce cut and fill by following natural contours, placement of bridge structures across major high order drainages, and shifting the alignment to avoid sensitive resources, including the Tesoro Wetlands area. Additionally, TCA sought to minimize impacts to jurisdictional waters by reducing the size and number of structural supports and by locating those required structural columns outside of high value jurisdictional resources. In order to reduce the number of structural columns, TCA maximized bridge span by increasing the structural strength of the bridge and increasing the bridge depth.

A more detailed description of aquatic resources and associated acreages is provided in Section 4 of the Wetlands Delineation Technical Report (Glenn Lukos Associates [GLA] 2004), which has been verified by the ACOE, and is included as Attachment 12 to the Response to Comments document. The Wetlands Delineation Technical Report was prepared for impacts associated with the SOCTIIP Alternatives, consistent with recommendations from the ACOE. The Alternatives evaluated in the delineation include the CC, CC-ALPV, A7C-ALPV, A7A-FEC-M, FEC-M and FEC-W Alternatives. Table 1.3-2 in the Wetlands Delineation Technical Report (GLA 2004) provides a quantitative summary of impacts to Waters of the United States (WoUS), including wetland and non-wetland waters, for each alternative.

ACOE will make the final decision on the LEDPA and a determination of compliance with the Section 404 (b)(1) Guidelines during the 30-day review period for the Final EIS.

Because it was the goal of the Collaborative to select a Preferred Alternative that would also be selected as the LEDPA, the evaluation and screening of the SOCTIIP Alternatives included evaluation of the Alternatives according to the NEPA/404 Evaluation criteria. The Collaborative applied the definition of "practicability" adopted by the Corps of Engineers and the U.S. EPA in the section 404(b)(1) Guidelines. A summary of the evaluation criteria and screening process is provided below.

ES.2.3.6 Evaluation Criteria and Screening Process

Summary of Jurisdictional Delineation Evaluation. A Jurisdictional Determination and Wetlands Delineation Technical Assessment was prepared for six of the project Alternatives in August 2004 and revised in April 2005 by Glenn Lukos Associates, Inc. (GLA). The report is Attachment 12 of the Response to Comments document. The Wetlands Delineation Technical Report describes the location and extent of aquatic features located within the disturbance limits of six of the corridor alternatives considered in the EIS/SEIR. The impacts of the six corridor alternatives are compared in Table ES.2-2 below.

Table ES.2-2
Summary of Permanent Impacts to Corps Jurisdiction (Acres)

Alternative	Corps		
	Total	Non-Wetland	Wetland
Preferred Alternative (A7C-FEC-M – Initial)	6.27	5.45	0.82
A7C-FEC-M Ultimate	6.90	5.97	0.93
CC – Initial	14.87	1.47	13.40
CC - Ultimate	15.08	1.51	13.57
CC-ALPV - Initial	12.38	0.97	11.41
CC-ALPV - Ultimate	13.39	1.01	12.38
A7C-ALPV - Initial	2.52	1.96	0.56
A7C-ALPV - Ultimate	3.34	1.98	1.36
FEC-W - Initial	6.69	4.07	2.62
FEC-W - Ultimate	6.96	4.32	2.64
FEC-M - Initial	5.44	3.73	1.71
FEC-M - Ultimate	6.02	4.04	1.99

Source: Glen Lukos 2004

In the planning level impact analysis conducted by the ERDC (Potential Impacts of Alternative Transportation Corridors on Waters of the U.S. and Riparian Ecosystems for the Southern Orange County Transportation Infrastructure Improvement Project, 2003), provided in the Draft EIS/SEIR the analyses assume that all drainages within the disturbance limits are permanently filled. This initial functional assessment conducted by ERDC did not account for bridges or culverts, but assumed a complete fill; this resulted in higher than actual estimates for post-project reductions in aquatic function. More recently, at the ACOE request, an updated functional assessment has been prepared by R.D Smith of ERDC which clarifies the impact analyses addressing the avoidance of impacts by the construction of bridges and culverts.

Review of the results indicate that of the eight categories evaluated (Criteria 1, 2, 3a, 3b, 3c, 4a, 4b and 4c), the Preferred Alternative is ranked best in four categories (3a, 3b, 3c and 4a), second in two categories (2 and 4b), fourth in one category (1) and fifth in one category (4c). Being ranked at the top in four categories is the best for any of the alternatives evaluated. The normalized rank score for each of the integrity indices evaluated in the functional assessment for each the six corridor alternatives is provided in Table ES.2-3 below.

Table ES.2-3
Normalized Rank Scores for all Criteria and Corridor Alternatives for the Initial Corridor Footprints

Corridor Alternatives (Initial)	Criteria 1: Miles of Stream Channel	Criteria 2: Acres of Riparian	Criteria 3: Hydrology	Criteria 3: Water Quality	Criteria 3: Habitat	Criteria 4: Hydrology	Criteria 4: Water Quality	Criteria 4: Habitat	Total Normalized Rank Scores
A7C-ALPV	0.4	0.4	0.4	0.5	0.4	0.6	0.5	0.7	3.9
A7C-FEC-M (Preferred Alternative)	0.8	0.3	0.2	0.2	0.2	0.4	0.6	0.9	3.7
CC ALPV	0.7	0.9	0.9	0.9	0.9	0.9	0.9	0.9	7.0
CC	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	8.0
FEC-M	0.9	0.4	0.4	0.4	0.4	0.9	1.0	0.9	5.2
FEC-W	0.7	0.2	0.2	0.2	0.2	0.5	0.7	0.7	3.6

Source: R.D. Smith, ERDC, 2005

The Jurisdictional Determination and Wetlands Delineation Technical Assessment quantify impacts to wetlands and the Updated Functional Assessment quantifies loss of function. Together, these two technical analysis documents will provide the ACOE with the information required to ensure a complete understanding of the nature and degree of impact of the proposed discharge resulting from the SOCTIIP Alternatives. See Section 4.10 of this Final SEIR, and both Attachment 12 and Attachment 16 of the RTC document, for more information on these technical evaluations.

Summary of Biological Resources Evaluation. The proposed project will involve removal of vegetative resources that are known to provide or may have the potential to provide habitat for ten federally-listed threatened, endangered, or proposed wildlife and plant species. Threatened and endangered wildlife species and plant species that may or will be directly affected by implementation of the Preferred Alternative are the tidewater goby, southern steelhead trout, arroyo toad, coastal California gnatcatcher, and thread-leaved brodiaea. The thread-leaved brodiaea is also state listed.

Threatened and endangered plant species that would not be directly impacted, and for which potential habitat is available, are as follows: Braunton's milk-vetch, Nevin's barberry, spreading navarretia, Orcutt's grass, and Gambel's watercress.

The following threatened and endangered wildlife species would not be directly impacted, but potential habitat for them is available in the project area: vernal pool fairy shrimp, San Diego fairy shrimp, Riverside fairy shrimp, Quino checkerspot butterfly, California red-legged frog, least Bell's vireo, southwestern willow flycatcher, and Pacific pocket mouse.

The Preferred Alternative selected by the TCA and FHWA includes many conservation and avoidance methods to minimize impacts to the natural environment, including adverse impacts to sensitive species and other natural resources. Indirect impacts will be limited through project design features. For example, the drainage and water quality features will prevent water quality impacts to sensitive species. The Preferred Alternative will limit lighting to areas around toll plazas and interchanges, and low-light design features will be incorporated to the maximum extent feasible while maintaining consistency with Caltrans design standards. (See Project Design Features described in Section 2.5.1.7). Table 2.2-4 includes information regarding the conservation and avoidance features of the location refinement to the Preferred Alternative.

Community Impacts. The proposed southern extension of existing SR-241 has been subject to planning efforts for over 20 years and has been on the County of Orange MPAH since 1981. Therefore, development in the study area has been able to anticipate and accommodate the future implementation of a transportation facility in this area. The potential direct and indirect effects of the Preferred Alternative on existing land uses are reduced by the siting of the proposed facility to minimize impacts to existing uses, combined with existing topography and committed open space areas that separate the Preferred Alternative from existing residential uses.

The Preferred Alternative does not result in direct or indirect impacts to existing homes and businesses, Chiquita Water Reclamation Plant, or the Prima Deshecha Landfill. Although the Preferred Alternative is adjacent to Tesoro High School, it would not result in direct or indirect adverse impacts to this land use. Because Tesoro High School was constructed with the knowledge of the proposed extension of the Foothill Corridor, the Final EIR for the high school included measures to mitigate potential indirect noise impacts associated with a transportation facility in the area of the SOCTIIP corridor Alternatives. There are no significant adverse indirect impacts to existing homes due to the distance from the proposed alignment, combined with existing topography and the existing buffer provided in the Talega residential development.

ES.2.3.7 Consideration of Other Factors

Marine Corps Base—Camp Pendleton. The Department of the Navy (DON) owns the property on which the Preferred Alternative traverses the Marine Corps Base in San Diego County. In 1988, the Marine Corps agreed that only one potential alignment of the proposed extension of the Foothill South project could be evaluated on Camp Pendleton as long as it met certain criteria, the most important of which was that any on-Base portion of this proposed toll road must be as closely located to the northern Base boundary as possible and it must be routed in such a manner that it does not impact the Marine Corps mission nor interfere with Camp Pendleton's operational flexibility. The Preferred Alternative (for that section of the toll road which crosses through Camp Pendleton) meets the Marine Corps criteria.

SOSB is located entirely on lands leased from the DON; the State does not own the land. SOSB is operated by the State, pursuant to a 1971 agreement of lease (the "lease") with the United States. The California Department of Parks & Recreation (CDPR) lease with the United States is specifically subject to the reserved right of the United States to grant additional easements and rights-of-way over the leased property. Thus, in implementing the authority to lease, CDPR agreed that the United States may grant a right-of-way to a third party. Congress has adopted legislation authorizing the Navy to grant to the TCA an easement within this portion of Camp Pendleton.

San Onofre State Beach. The Preferred Alternative extends south through Subunit 1 of San Onofre State Beach (SOSB), leased from MCB Camp Pendleton, impacting biological and habitat resources value, and the overall size of the SOSB Subunit1. No camping sites in the San Mateo Campground would be removed as a result of implementation of the Preferred Alternative, but the Preferred Alternative has visual and aesthetic impacts on the camping experience at the San Mateo Campground. No impacts to the SOSB Trestles Subunit (Subunit 2) are expected as a result of the elevated ramp connecting the Preferred Alternative to I-5. Continued access to Trestles Beach will be provided during and after construction of the Preferred Alternative and, as described in Section 4.25, there will be no effect on the quality of the surf and sediment supply will be virtually unchanged in the after-project condition.

Construction activities associated with implementation of the Preferred Alternative could impact Camp Pendleton San Onofre Recreation Beach. Impacts to recreation uses at San Onofre Recreation Beach would relate mostly to noise, access, and dust during construction. These short-term impacts would not change land uses at San Onofre Recreation Beach or military uses at Green Beach.

The Donna O'Neill Land Conservancy. The Preferred Alternative takes land in The Conservancy. The SOCTIIP Collaborative agreed that the beneficial affects of the Preferred Alternative crossing into the western portion of The Conservancy outweighed the potential impacts. The benefits include: greater habitat connectivity into eastern Orange County; avoidance of high value aquatic resources including wetlands in the Blind Canyon/Gabino Canyon confluence; keeping in close proximity to neighboring development thereby minimizing habitat fragmentation; and minimization of viewshed impacts to residents in developed areas of San Clemente, including Talega. The Conservancy would be compensated for this impact. The TCA has initiated discussions with The Conservancy Board of Directors and the landowner to discuss right-of-way acquisition and potential mitigation strategies for impacts to The Conservancy. Mitigation strategies presented to The Conservancy included open space land for additional set-aside areas, either contiguous or non-contiguous to the existing Conservancy, or monetary compensation to The Conservancy.

Section 4(f) Resources/Cultural. There are 25 identified cultural resource sites within the Preferred Alternative. Of these, seven have been recommended ineligible for the NRHP under any criteria. Fourteen of the identified cultural resource sites have been recommended eligible for listing on the

NRHP. Of the sites that are eligible for the NRHP, two are eligible under Criterion D only. Ten NRHP-eligible sites are elements of the San Mateo Archaeological District (SMAD) and are considered eligible under Criteria A and D. The SMAD is also considered a Traditional Cultural Property by local Native American Groups. Eight of the identified resources have not been formally evaluated, in consultation with the SHPO, for eligibility. The eight unevaluated resources are located within the RMV Lands, Conservancy Land, adjacent to the Talega Development, and along I-5 in San Diego. Mitigation Measures are provided that will minimize or mitigate impacts to these resources to the extent feasible. In addition, avoidance of these resources within the Preferred Alternative Study Area has also been investigated, and avoidance has been achieved for two resources considered the "core" of the SMAD (CA-ORA-22 and CA-SDI-8435). Where possible, ground disturbing impacts of the Preferred Alternative were placed on deflating landforms where there is little likelihood of buried components for impacted 4(f) resources.

Farmland Resources. The Preferred Alternative would not result in the loss of rated farmland as defined by the Natural Resources Conservation Service on RMV. Due to alignment shifts, the Preferred Alternative would affect an additional 1 ha (2.57 ac) more than the A7C-FEC-M-Ultimate. The Preferred Alternative would result in the loss of approximately 63 ha (155 ac) less agricultural preserve land than the A7C-FEC-M Initial and approximately 65 ha (162 ac) less than the A7C-FEC-M-Ultimate.

ES.2.4 PREFERRED ALTERNATIVE AND LEDPA SELECTION

Of the three corridor alternatives remaining after the practicability analysis, the A7C-FEC-M-Initial corridor with design modification incorporated was selected by the Collaborative as the Preferred Alternative. In addition to meeting the seven criteria for evaluating the practicability of alternatives listed in the NEPA/404 MOU Guidance Paper and being better or comparable to the other two alternatives in terms of impacts to aquatic and biological resources, the Preferred Alternative allows the greatest wildlife connectivity and is more compatible with local existing land use plans. More specifically, the Preferred Alternative was selected over the FEC-M Alternative because it does not cross Cañada Gobernadora and it minimizes impacts on open space areas contemplated by the RMV Ranch Plan and does not impact RMV heritage sites.

Selection of the Preferred Alternative represents a coordinated balanced approach to minimizing harm to both the natural and built environments. The A7C-FEC-M and the Preferred Alternative culminates years of analysis and evaluation, engineering refinement, inter-agency consultation and coordinated consensus. ACOE will make the final decision on the LEDPA and a determination of compliance with the Section 404 (b)(1) Guidelines during the 30-day review period for the Final EIS.

ES.3 PROJECT HISTORY

The proposed southern extension of existing State Route 241 (SR-241) also referred to as the Foothill Transportation Corridor-South (FTC-S), has been subject to planning efforts for approximately 20 years. Final EIR 123, which was certified by the County of Orange in 1981, resulted in a conceptual alignment for a transportation corridor facility being placed on the County's Master Plan of Arterial Highways (MPAH). The MPAH shows the alignment of the existing SR-241 and a conceptual alignment for the FTC-S. Between 1989 and 1991, the TCA prepared TCA EIR 3, pursuant to CEQA, for the selection of a locally preferred road alignment for the FTC-S. TCA EIR 3 addressed the C and BX road alignments, developed as part of the alternatives analysis phase of the project, as the primary build Alternatives. On October 10, 1991, the Modified C Alignment was selected by the TCA as the locally Preferred Alternative. Subsequently, at the request of the United States Fish and Wildlife Service (USFWS), the Modified C Alignment was slightly altered to avoid high quality scrub communities, protect sensitive

species and wildlife movement in the Sulfur Canyon area and minimize impacts to the Pacific pocket mouse. As a result of these changes, this alignment was then renamed the CP Alignment.

In 1996, as a result of the 1994 NEPA/Clean Water Act (CWA) Section 404 Integration Process for Surface Transportation Projects, FHWA initiated coordination to implement the policies of the Memorandum of Understanding for the NEPA and Section 404 Integration Process for Surface Transportation Projects in Arizona, California and Nevada (MOU) in developing the EIS and Section 404 permitting for the FTC-S. The NEPA/Section 404 MOU implements the FHWA, United States Army Corps of Engineers (ACOE), U.S. Fish and Wildlife Service, and United States Environmental Protection Agency (EPA) policies of improved interagency coordination and integration of the NEPA, the Endangered Species Act and Section 404 procedures. The NEPA/Section 404 MOU applies to all projects needing both FHWA action under NEPA and an ACOE individual permit under Section 404 of the CWA, and that are subject to ESA Section 7 Consultation requirements. The signatory agencies to the NEPA/Section 404 MOU include FHWA, EPA, ACOE, USFWS, National Marine Fisheries Service (NMFS) and Caltrans.

In March 1999, pursuant to the NEPA/Section 404 MOU, a purpose and need statement was approved for the SOCTIIP. Between August 1999 and November 2000, the NEPA/Section 404 MOU signatory agencies developed a list of project alternatives to be evaluated in the EIS/SEIR. It was during this process that the signatory agencies referred to the project as the South Orange County Transportation Infrastructure Improvement Project or SOCTIIP. The NEPA/404 MOU agencies and the TCA are collectively referred to as the "SOCTIIP Collaborative." In November 2000, the SOCTIIP Collaborative concurred on the Alternatives to be evaluated in the technical studies and in August 2003 concurred on the Alternatives to be carried forward and evaluated in the EIS/SEIR. These Alternatives are described in Section ES.3 of this Executive Summary and are described in detail in Section 2.0 (Alternatives) of the EIS/SEIR. At this time, FHWA has not identified a Preferred Alternative under NEPA and the TCA has not identified the locally Preferred Alternative. All alternatives are evaluated equally in the EIS/SEIR.

ES.3.1 DESCRIPTION OF THE PROJECT AREA

The study area for the SOCTIIP encompasses the southeast part of Orange County and the northernmost part of San Diego County, and ten cities bordering or in the vicinity of Interstate 5 (I-5) between its confluence with Interstate 405 (I-405) in central Orange County and its intersection with Basilone Road in San Diego County. The jurisdictions and agencies in the study area are the County of Orange, MCB Camp Pendleton, California Department of Parks and Recreation and the incorporated Cities of San Clemente, Laguna Niguel, San Juan Capistrano, Laguna Woods, Dana Point, Laguna Hills, Rancho Santa Margarita, Lake Forest, Mission Viejo, Aliso Viejo and Irvine. These local jurisdictions, communities and major land uses in the SOCTIIP study area are shown on Figure ES.1-1. Figures and tables cited in this Executive Summary are provided following the last page of text in this Executive Summary.

ES.3.2 DESCRIPTION OF THE PROPOSED PROJECT

The SOCTIIP proposes locating, constructing and operating transportation improvements in southern Orange County as shown on Figure ES.1-2. Figure ES.1-2 also shows the existing freeways and toll roads in southern Orange County. The SOCTIIP alternatives include six corridor Alternatives to extend the existing FTC (SR-241 and also referred to as FTC-North) from Oso Parkway to I-5 near the Orange County/San Diego County boundary or at an intermediate point at an intersecting arterial road, one Alternative to improve existing and master planned arterial highways and one Alternative to widen I-5 from the County boundary north to the interchange with Interstate 405 (I-405). The alignments of the SOCTIIP build Alternatives are shown in different colors on Figure ES.1-2.

The six corridor alternatives evaluated in the EIS/SEIR are the Far East Corridor-West (FEC-W) Alternative (shown in lavender on Figure ES.1-2), Far East Corridor-Modified (FEC-M) Alternative (purple), Central Corridor-Complete (CC, formerly referred to as the BX Alignment) Alternative (yellow), Central Corridor-Avenida La Pata Variation (CC-ALPV) Alternative (light orange), Alignment 7 Corridor-Far East Crossover-Modified (A7C-FEC-M) Alternative (green) and Alignment 7 Corridor-Avenida La Pata Variation (A7C-ALPV) Alternative (dark orange). These six Alternatives, also referred to as the FTC-S or the corridor Alternatives, would extend existing SR-241 south to I-5 or an intermediate point at an intersecting arterial road, with four to eight lanes, on alignments from 14 kilometers (km, 9 miles (mi) to 26 km (16 mi) long. Each of the corridor Alternatives has two phases, an Initial phase and an Ultimate phase. The Initial phase of each Alternative would provide four lanes on the extension of SR-241; the Ultimate phase of each Alternative would provide six to eight lanes on the extension of SR-241. The Initial would be constructed now; the Ultimate, with more travel lanes, is not anticipated to be needed, based on forecasted traffic demand, until after 2025. The TCA anticipates seeking permits only for the initial phase of a corridor. Construction would take from 30 to 42 months, depending on the alternative. The TCA would design and construct one of the six corridor Alternatives.

The following description provides detailed information about the Preferred Alternative, changes to the Preferred Alternative since circulation of the Draft EIS/SEIR, refinements to the Preferred Alternative. The Preferred Alternative is the A7C-FECM Alternative, with some modifications. The Preferred Alternative is reduced in size from eight lanes to a maximum of six general purpose lanes. This modification reduces the typical cross-section of the project from 156 feet to 128 feet. Initially, the project will be constructed as a four-lane facility (two lanes in each direction).

The Arterial Improvements Only (AIO) Alternative would improve Antonio Parkway/Avenida La Pata from Oso Parkway to Avenida Pico, to beyond its MPAH designation, providing one or two additional lanes in each direction. The AIO Alternative is shown in blue on Figure ES.1-2. This Alternative would take approximately 30 months to construct. No agency has been identified for the implementation of the AIO Alternative.

The I-5 Widening (I-5) Alternative would provide additional general purpose, auxiliary and high occupancy vehicle (HOV) lanes on I-5 from approximately I-405 south to the County boundary in south San Clemente. The I-5 Alternative is shown in red on Figure ES.1-2. This Alternative would take approximately 42 months to construct. No agency has been identified for the implementation of the I-5 Alternative.

In addition to the eight build Alternatives identified above, two No Action Alternatives, which assume different background land use levels, were also analyzed and are documented in the EIS/SEIR.

ES.4 PURPOSE AND NEED FOR THE PROJECT AND PROJECT OBJECTIVES

ES.4.1 PROJECT NEED

The continued development of residential, commercial and industrial uses in south Orange County and throughout the rest of the County has resulted in continuing traffic congestion in the peak periods such that major travel routes experience very poor levels of service during these periods. Based on the adopted General Plans and adopted regional forecasts, south Orange County is anticipated to continue to experience growth in both residents and jobs. The total number of residents in south Orange County in 2000 was 481,900; this is forecast to increase to 627,568 residents in 2025. The total number of employees in south Orange County is forecast to increase from 207,193 employees in 2000 to 304,938 employees in 2025. The local jurisdictions' General Plans and the adopted regional demographic forecasts reflect this anticipated growth. The MPAH identifies needed transportation infrastructure to

support this development. Committed, funded transportation improvements in south Orange County would address some of the current and projected traffic demand in south Orange County. However, additional transportation improvements, consistent with the MPAH, are needed to serve this demand to ensure continued mobility for travelers and goods movement over the long-term planning horizon to 2025 and beyond. Without implementation of transportation improvements consistent with the MPAH, there would be inadequate circulation infrastructure to provide mobility on existing facilities, including I-5 and major arterials in south Orange County.

ES.4.2 NEPA PURPOSE AND NEED

As discussed earlier, in March 1999, pursuant to the NEPA/Section 404 MOU, a purpose and need statement was approved for the SOCTIIP. The project purpose and need statement is provided in Section 1.0 (Purpose and Need for the Proposed Project) in the EIS/SEIR.

In brief, as stated in the adopted purpose and need statement, "Transportation infrastructure improvements are necessary to address needs for mobility, access, goods movement and projected freeway capacity deficiencies and arterial congestion in south Orange County. Freeway capacity deficiencies and arterial congestion are anticipated as a result of projected traffic demand, which would be generated by projected increases in population, employment, housing and intra- and inter-regional travel estimated by the Southern California Association of Governments (SCAG) and the San Diego Association of Governments (SANDAG). The purpose of the SOCTIIP is to provide improvements to the transportation infrastructure system that would help alleviate future traffic congestion and accommodate the need for mobility, access, goods movement and future traffic demands on I-5 and the arterial network in the study area."

Section 3.0 (Traffic and Circulation) in the EIS/SEIR provides a detailed discussion of the existing and forecasted traffic conditions in the SOCTIIP study area, including detailed information regarding existing and 2025 operating conditions on I-5. As shown in Section 3.0, improvements in the subregional transportation system are needed, as described in the purpose and need statement, to provide for improved levels of service (LOS) on I-5.

The purpose and need statement also identifies the following specific objective for the SOCTIIP: "Improve the projected future LOS and reduce the amount of congestion and delay on the freeway system and, as a secondary objective, the arterial network, in southern Orange County. The overall goal is to improve projected levels of congestion and delay as much as is feasible and cost effective. This may include strategies which lead to a reduction in the length of time LOS F will occur, even if the facility will still operate at LOS F for a short period of time, if the strategy will result in benefits to the traveling public and more efficient movement of goods because it reduces total delay." Section 3.0 provides detailed analysis of the potential improvement in LOS on I-5 under the various SOCTIIP build and No Action Alternatives.

ES.4.3 CEQA OBJECTIVES

Section 15124(b) of the CEQA Guidelines requires that the project description contain a clear statement of the project objectives. These objectives are in addition to the Purpose and Need Statement required under NEPA. The objectives of the SOCTIIP, consistent with guidance provided in CEQA, are:

- Alleviate existing and future peak hour traffic congestion on the existing circulation network in south Orange County.

- Provide benefits to the traveling public and more efficient movement of goods through a reduction in the amount of congestion and delay in southern Orange County.
- Implement the Orange County MPAH by completing the transportation corridor system in south Orange County, between existing SR-241 and I-5.
- Minimize through traffic use of the existing arterial highway network in south Orange County by diverting traffic that cannot be accommodated on I-5 to a transportation corridor level facility rather than arterial highways. The MPAH states that transportation corridors will provide for efficient movement of traffic where projected volumes exceed major arterial capacities.
- Provide an alternative access route between south Orange County and central and northeastern Orange County to serve existing and developing employment centers and major attractions.
- Provide an alternative access route between south Orange County and central and northeastern Orange County for emergency evacuations and emergency service providers.
- Minimize adverse impacts related to community disruption, acquisition of residences and businesses, noise and aesthetics.
- Minimize adverse impacts to the environment while recognizing the conflicting demands of different types of resources, regulatory requirements and environmental priorities in the study area.
- Develop a "priced alternative to HOV lanes" to implement the air quality benefits of Transportation Control Measure (TCM)-01 in the Air Quality Management Plan (AQMP), the State Implementation Plan and the Regional Transportation Plan (RTP). TCM-01 includes the toll road extension of the existing FTC-N as one of many transportation improvements listed in the AQMP. The toll road corridor alternatives are a "priced alternative to HOV lanes" which simply means that, rather than implementing HOV lanes as part of the toll roads when first constructed, the HOV lanes can be delayed and tolls can be used to partially control demand, and maintain high levels of service, on the toll roads in the short-term.

ES.5 ALTERNATIVES CONSIDERED

As discussed in detail in the EIS/SEIR and in Section ES.4.2 (NEPA/Section 404 Memorandum of Understanding), FHWA, USFWS, EPA and ACOE developed the Alternatives considered in the EIS/SEIR in collaboration under the NEPA/CWA Section 404 Integration Process for Surface Transportation Projects. Also see Section ES.1.1 (NEPA/Section 404 Integration Process). The Alternatives evaluated in the EIS/SEIR are described briefly below and are described in detail in Section 2.0 (Alternatives) in the EIS/SEIR.

At this time, FHWA has not identified a Preferred Alternative under NEPA and the TCA has not identified the locally Preferred Alternative. All alternatives are evaluated equally in the EIS/SEIR. Between the draft and final EISs/SEIRs, FHWA, the ACOE, Caltrans and the TCA will identify the NEPA preferred/Section 404 least environmentally damaging practicable alternative alignment to achieve the NEPA project purpose and need and the Section 404 basic project purpose.

ES.5.1 ALTERNATIVES

Three categories of alternatives are evaluated in the EIS/SEIR:

- Six corridor Alternatives which propose a southern extension of existing SR-241 from Oso Parkway to I-5 in the vicinity of San Clemente. The northern segment of the FTC, commonly referred to as the FTC-North (FTC-N), is currently operating as a toll facility from Oso Parkway north to the ETC

which extends north to State Route 91 (SR-91). These six corridor alternatives are described and evaluated in detail in the EIS/SEIR. These corridor Alternatives would be operated as toll facilities. The six corridor Alternatives are the FEC-W, FEC-M, CC, CC-ALPV, A7C-FEC-M and A7C-ALPV Alternatives.

- Two non corridor Alternatives which propose improvements or enhancements to existing I-5 and/or to MPAH arterials in south Orange County. The two non corridor alternatives are the I-5 and the AIO Alternatives.
- Two No Action Alternatives under which no corridor alignments, SOCTIIP I-5 or SOCTIIP arterial transportation improvements would be implemented in south Orange County.

The general alignments of these eight build Alternatives are shown on Figure ES.1-2.

The EIS/SEIR evaluates the following SOCTIIP build and No Action Alternatives:

Far East Corridor Alignment Alternatives

Far East Corridor-West (FEC-W) Alternative: extension of existing SR-241 south from Oso Parkway to I-5 at the County line; four mixed flow lanes for the Initial; eight lanes (six mixed flow and two HOV) for the Ultimate; approximately 26 km (16 mi) long. The alignment of the FEC-W Alternative is shown in lavender on Figure ES.1-2.

Far East Corridor-Modified (FEC-M) Alternative: extension of existing SR-241 south from Oso Parkway to I-5 at the County line; four mixed flow lanes for the Initial; eight lanes (six mixed flow and two HOV) for the Ultimate; approximately 26 km (16 mi) long. The alignment of the FEC-M Alternative is shown in dark purple on Figure ES.1-2. The location of this Alternative closely resembles the CP Alternative that was the locally Preferred Alternative adopted by the TCA Board of Directors in 1991.

Central Corridor Alignment Alternatives

Central Corridor-Complete (CC, formerly referred to as the BX Alignment) Alternative: extension of existing SR-241 south from Oso Parkway to I-5 at Avenida Pico in San Clemente; four mixed flow lanes for the Initial; eight lanes (six mixed flow and two HOV) for the Ultimate approximately 19 km (12 mi) long. The alignment of the CC Alternative is shown in yellow on Figure ES.1-2.

Central Corridor-Avenida La Pata Variation (CC-ALPV) Alternative: extension of existing SR-241 south from Oso Parkway to Avenida La Pata in San Clemente; four mixed flow lanes for the Initial; eight lanes (six mixed flow and two HOV) for the Ultimate; approximately 14 km (8.7 mi) long. The alignment of the CC-ALPV Alternative is shown in light orange on Figure ES.1-2.

Alignment 7 Corridor Alignment Alternatives

Alignment 7 Corridor-Far East Crossover-Modified (A7C-FEC-M) Alternative: extension of existing SR-241 south from Oso Parkway to I-5 at the County line; four mixed flow lanes for the Initial; eight lanes (six mixed flow and two HOV) for the Ultimate; approximately 26 km (16 mi) long. The alignment of the A7C-FEC-M Alternative is shown in green on Figure ES.1-2.

Alignment 7 Corridor-Avenida La Pata Variation (A7C-ALPV) Alternative: extension of existing SR-241 south from Oso Parkway to Avenida La Pata I-5 at the County line; four mixed flow lanes for the Initial; eight lanes (six mixed flow and two HOV) for the Ultimate; 14 km (9 mi) long. The alignment of the A7C-ALPV Alternative is shown in dark orange in Figure ES.1-2.

Arterial Improvements Alternative

Arterial Improvements Only (AIO) Alternative: expansion of Antonio Parkway/Avenida La Pata between Oso Parkway and just south of Camino Las Ramblas, with the addition of one lane in each direction, beyond the MPAH designations for this road segment. The improved segment between San Juan Creek Road and Avenida Pico would have a total of six travel lanes, and the improved segment from Oso Parkway to San Juan Creek Road would have a total of eight travel lanes. Smart Street/Transportation Systems Management (TSM) improvements would be constructed in the existing rights-of-way on Avenida Pico, Camino Las Ramblas, on Ortega Highway between Antonio/La Pata and I-5, and on Avenida La Pata between Avenida Pico and south of Camino Las Ramblas, under the AIO Alternative.

I-5 Widening Alternative

HOV and Mixed Flow Lanes on I-5 (I-5) Alternative: addition of one HOV lane in each direction and one or two mixed flow lanes in each direction on I-5 from south of Las Flores to south of Cristianitos Road, and auxiliary lanes in some locations on this segment of I-5. The alignment of the I-5 Alternative is shown in red on Figure ES.1-2.

No Action Alternatives

Based on consideration of the No Action/No Project Alternative requirements under NEPA and CEQA and demographic and land use factors described in detail in Section 2.0 (Alternatives) in the EIS/SEIR, two No Action Alternatives were defined for evaluation in the EIS/SEIR. These two No Action Alternatives vary in the number of dwelling units (dus) assumed on the Rancho Mission Viejo (RMV) property and in the on site circulation improvements assumed to support the development on RMV. These No Action Alternatives are:

No Action Alternative-OCP-2000. This No Action Alternative assumes:

- Build out of the Land Use Elements (LUEs) of the General Plans for the cities and unincorporated Orange County.
- Use of the Orange County Projections-2000 (OCP-2000), the regionally adopted demographic forecasts for Orange County. These forecasts assume build out development of approximately 21,000 dus on the RMV property by 2025.
- Build out of the MPAH, with all arterials constructed to their ultimate cross sections consistent with the MPAH, with the exception of the FTC which would not be extended south of its existing terminus at Oso Parkway under this No Action Alternative.
- Build out of the 2001 RTP improvements in South Orange County.
- An on site circulation system on the RMV property, to support the 21,000 dus forecasted in OCP-2000.

No Action Alternative-RMV Development Plan. This No Action Alternative assumes the same background land use and circulation system conditions as described earlier for the No Action Alternative-OCP-2000, with the following differences:

- OCP-2000 population and employment projections for 2025, with modifications. Under this No Action Alternative, 14,000 dus are assumed to be developed on the RMV, as proposed by the RMV Company, rather than the 21,000 dus in OCP-2000.

- An on site circulation system on the RMV property, to support the 14,000 dus proposed by the RMV Company.

The No Action Alternatives with different land use assumptions were requested by the regulatory agency members of the SOCTIIP Collaborative. It was of interest to those members to compare different numbers of dus and different levels of MPAH traffic improvements under these No Action Alternatives.

ES.5.2 OTHER MAJOR GOVERNMENTAL ACTIONS IN THE PROJECT AREA

The following three major projects are planned in the SOCTIIP study area: the proposed development of the remaining part of the RMV property, the Southern Subregion Natural Community Conservation Plan (NCCP) and the Special Area Management Plan (SAMP). The RMV development proposal, the NCCP and the SAMP are being planned cooperatively.

The proposed development on RMV includes General Plan and zoning amendments for the 9,254 ha (22,850 ac) Ranch property, to allow a mixture of residential, commercial, employment and open space uses. In 2001, conceptual land use plans for RMV were submitted to the County proposing 14,000 dus in a community of mixed use villages on the 9,254 hectare (ha, 22,850 acre(ac) property. The village concept combines high and low density residential, commercial and office uses into integrated areas. The Ranch Plan proposes development on approximately 40 percent of the ranch with the remainder left in open space. At the time the Draft EIS/SEIR was being prepared~~,~~ these proposed conceptual plans ~~are~~ were preliminary, had not received federal, state or County approvals, and were undergoing environmental review. The environmental documentation process was initiated with the release of a Notice of Preparation (NOP) to prepare an EIR on February 24, 2003 by the County of Orange.

The County of Orange approved the RMV Planned Community (The Ranch Plan) in November 2004, after the publication of the SOCTIIP Draft EIS/SEIR. The Ranch Plan depicted an alignment of the FTC South as shown on the Master Plan of Arterial Highways; however, the EIR for the Ranch Plan acknowledged that if another alignment is selected, the development plan will accommodate the selected alignment (Ranch Plan DEIR, page 3-5). The Ranch Plan was approved at a General Plan or conceptual level plan, with development areas shown as "bubbles" and no grading plan or placement of residential units or buildings on the plan as approved. The approved RMV Ranch Plan provides for the following level of development intensity: 14,000 dwelling units, 3,480,000 square feet of urban activity center uses, 500,000 square feet of neighborhood center uses and 1,220,000 square feet of business park uses. Subsequent to County approval of the Ranch Plan, the County of Orange and RMV entered into a Settlement Agreement with the Endangered Habitats League, Natural Resources Defense Council, Sea and Sage Audubon Society, Laguna Greenbelt, Inc., and Sierra Club. The Settlement Agreement did not change the total number of approved dwelling units or non-residential development for the Ranch Plan, but did alter the location of development and increased the area devoted to open space uses including infrastructure.

The California Department of Fish and Game (CDFG) will oversee the compliance of the RMV development with the California Endangered Species Act (CESA) through the NCCP and watercourse alteration through the Master Streambed Alteration Agreement (MSAA) pursuant to Section 1600 et seq. of the California Fish and Game Code. The USFWS and the ACOE are engaged, in a cooperative effort, in overseeing compliance with the Federal Endangered Species Act (ESA) through the preparation of the NCCP/Habitat Conservation Plan (50 C.F.R. Section 13.0) and the CWA through the Section 404 Permit Process (33 C.F.R. Section 230). The primary undeveloped area in south Orange County is RMV, which is why the NCCP and SAMP plans are being concurrently processed with the RMV development proposal. Although there are a multitude of federal and state agencies involved in the planning process,

the County of Orange is the lead agency, in cooperation with CDFG, for the preparation of the Southern Subregion NCCP.

The USFWS and ACOE held informational meetings in 2002 and early 2003 on the resource planning for the South Subregion NCCP and SAMP. Ten candidate plans were presented which ranged from development reflecting the RMV proposal to a very low density of development over a very limited development area. According to the County's website for the South Orange County Coordinated Planning Process, these alternative plans will be evaluated in each of the Southern NCCP and SAMP environmental studies. The South NCCP area has been the subject of ongoing study for nearly a decade and the study of the ten candidate plans is now underway. A Notice of Intent (NOI) to prepare an EIS for these efforts was published in August 2001. These study efforts will influence and shape development on RMV as well as other land in the SOCTIIP study area. Although related because they are in the same geographic area, the RMV development plan, the Southern NCCP and the SAMP are separate projects that will have separate environmental documents. Those environmental documents will be prepared by the respective lead agency for each project and these lead agencies have been coordinating and will continue to coordinate with one another on these planning and study efforts.

In addition, a draft SAMP prepared for the San Juan Creek and San Mateo Creek watersheds in 1999 is discussed in the EIS/SEIR because it is relevant to the study area. The draft SAMP prepared in 1999 for the San Juan Creek and parts of the San Mateo Creek Watersheds by the ACOE consists of a comprehensive wetland planning effort. The 1999 draft SAMP provides identification and characterization of the aquatic resources, evaluation of alternatives for impacts to aquatic resources, and identification of the aquatic resources reserve program in these watersheds. The 1999 draft SAMP identifies wetlands and Waters of the United States (WoUS) by probability, as well as uplands and unregulated areas.

These projects, and other planned projects in the SOCTIIP study area, are described in more detail in Sections 1.3.7 (Other Major Governmental Actions in the Project Area) and 5.1 (Overview of Cumulative Projects) in the EIS/SEIR.

ES.5.3 CONSISTENCY WITH TRANSPORTATION PLANNING PROGRAMS

The SOCTIIP Alternatives were evaluated for consistency with existing federal, state and regional transportation planning programs as required under NEPA and CEQA. These federal, state and regional transportation planning programs are used by the applicable agencies for consideration of planning, funding and implementation of transportation improvements throughout southern California. The consistency of the SOCTIIP Alternatives with applicable federal, state and regional transportation planning programs is discussed in this Section, based on the descriptions of each Alternative (alignment, connection to I-5 and number of lanes).

The Federal State Transportation Improvement Program (FSTIP) and the Federal Transportation Improvement Program (FTIP) carry out the California Transportation Plan (CTP). The FSTIP is compiled by the California Transportation Commission (CTC) from the Regional Transportation Improvement Programs (RTIPs) prepared by the regional Metropolitan Planning Organizations (MPOs). An alignment similar to the alignment of the FEC-M Alternative is included in the FSTIP.

The FTIP is compiled by FHWA from the State Transportation Improvements Programs (STIPs). An alignment of the FTC-S similar to the FEC-M alignment is included in the FTIP. It is anticipated that any SOCTIIP Alternative which proposes an extension of SR-241 from Oso Parkway to I-5 would be consistent with the FTC-S as defined in the FTIP.

The District System Management Plan (DSMP) provides multi-modal, multi-jurisdictional systems strategies for evaluating and recommending improvements to the transportation system. The DSMP was adopted in 1989. It includes an alignment for the FTC-S consistent with the alignment of the FEC-M Alternative. It is anticipated that any SOCTIIP Alternative which proposes an extension of SR-241 from Oso Parkway to I-5 would be consistent with the FTC-S as defined in the DSMP.

SCAG is the federally designated MPO for the six county region which includes Imperial, Los Angeles, Orange, Riverside, San Bernardino and Ventura Counties. As the MPO, SCAG is required to adopt and periodically update a RTP. SCAG also prepares and implements the RTIP and the regional Growth Management Projections. The FTC-S is shown in the 2001 RTP as an extension of the existing FTC-N from the San Diego County line to Oso Parkway, with two mixed flow lanes in each direction by 2010 and two additional mixed flow lanes in each direction by 2015. An alignment similar to the alignment of the FEC-M Alternative is mapped in the RTP as a programmed part of the transportation network baseline and is assumed in the modeling for the RTP.

The South Coast Air Quality Management District (AQMD) is the air pollution control agency for the four-county region including Los Angeles and Orange Counties and parts of Riverside and San Bernardino Counties. An alignment similar to the alignment of the FEC-M Alternative is included in the Air Quality Management Plan (AQMP) and in the modeling for the AQMP. As defined in the AQMP and the AQMP modeling, the FTC-S is described as an extension of SR-241 from Oso Parkway to I-5. Therefore, it is anticipated that any SOCTIIP Alternative which proposes an extension of SR-241 from Oso Parkway to I-5 would be consistent with the AQMP and the AQMP modeling.

SANDAG is the state and federally designated MPO responsible for regional transportation planning for San Diego County. SANDAG prepares and implements two regional plans: the RTP and RTIP for San Diego County. An alignment similar to the FEC-M alignment is included in the SANDAG RTP. As defined in the SANDAG RTP, the FTC-S is described as an extension of SR-241 from Oso Parkway to I-5. Therefore, it is anticipated that any SOCTIIP Alternative which proposes an extension of SR-241 from Oso Parkway to I-5 would be consistent with the FTC-S as defined in the SANDAG RTP.

The Orange County Transportation Authority (OCTA) develops and implements unified transportation programs and services for Orange County. OCTA administers the County's MPAH. Projects must be on the MPAH to be implemented. The FTC-S is shown on the MPAH on an alignment similar to the FEC-M alignment. As shown conceptually on the MPAH, the FTC-S is described as an extension of SR-241 from Oso Parkway to I-5. Therefore, it is anticipated that any SOCTIIP Alternative which proposes an extension of SR-241 from Oso Parkway to I-5 would be consistent with the FTC-S as shown on the MPAH.

It is anticipated that the Alternatives which propose improvements other than to SR-241, which are the AIO, I-5 and No Action Alternatives, or which do not extend SR-241 all the way to I-5 (CC-ALPV and A7C-ALPV Alternatives) would not be considered consistent with the FTC-S as assumed in these regional transportation plans.

ES.5.4 SECTION 4(F) REQUIREMENTS AND ALTERNATIVES

Section 303(c) of the Department of Transportation Act of 1966 (49 U.S.C. Section 303, "Section 4(f)") requires agencies of the United States Department of Transportation, when carrying out transportation programs or projects, to avoid impacts to certain parklands, recreation areas, historic sites, and wildlife refuges of national, state, or local significance. Specifically, Section 4(f) provides that the Secretary of Transportation may approve a transportation program or project "requiring the use of publicly owned land of a public park, recreation areas or wildlife and waterfowl refuge, or land of an historic site of national,

state or local significance only if there is no prudent and feasible alternative to using that land, and the program or project includes all possible planning to minimize harm to the resource resulting from the use."

Section 4(f) applies to "publicly owned land of a public park, recreation areas or wildlife and waterfowl refuge, or land of an historic site of national, state, or local significance." Publicly owned land is considered to be a park, recreation area or wildlife and waterfowl refuge when the land has been officially designated as such or when the federal, state or local officials having jurisdiction over the land determine that one of its major purposes or functions is for park, recreation or refuge purposes. Section 4(f) applies to historic properties and archeological resources only when the resource is included on, or eligible for, the National Register of Historic Places (NRHP) and is important for preservation in place. Any part of a publicly owned park, recreation area, wildlife refuge or historic site is presumed to be significant unless there is a statement of insignificance relative to the whole park by the federal, state or local official having jurisdiction over that resource.

Consistent with this regulation, Section 4(f) analysis is required by FHWA to address the potential impacts of alternatives related to publicly owed 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. All the SOCTIIP build Alternatives result in potential use of Section 4(f) resources. In the EIS/SEIR, use is defined as the acquisition of property from a Section 4(f) resource. Some resources have been avoided based on the preliminary design of the Alternatives. However, the use of the remaining resources cannot be avoided by the SOCTIIP build Alternatives, as discussed in detail in Appendix H (Section 4(f) Evaluation) in the EIS/SEIR.

Alternatives within Camp Pendleton are not subject to Section 4(f) because Congress adopted legislation providing that Section 4(f) does not apply to SOCTIIP within Camp Pendleton.

ES.5.5 ALTERNATIVES EVALUATED AND ELIMINATED FROM FURTHER STUDY

Over the last approximately two decades, a wide range of corridor and road, transportation systems management and transit alternatives has been considered in south Orange County. These alternatives are discussed in detail in Section 2.5 (Alternatives Evaluated and Eliminated from Further Study) in the EIS/SEIR. The SOCTIIP Collaborative considered a wide range of build Alternatives in developing the list of alternatives evaluated in the EIS/SEIR. Alternatives considered by the Collaborative but eliminated from detailed consideration in the EIS/SEIR, as described in detail in Section 2.5 of the EIS/SEIR, are described in this Section.

ES.5.5.1 Corridor Variations on Camp Pendleton

In 1988, the Marine Corps stated their position regarding the potential for construction of a corridor project on Camp Pendleton land (Commandant of the Marine Corps (Gray) letter to TCA, May 23, 1988). The Marine Corps agreed, in consultation with the TCA, to the evaluation of one potential alignment of the southern extension of the FTC on the Base subject to several conditions including the stipulation that any toll road alignment on Camp Pendleton must not impact or interfere with the operational flexibility of the Marine Corps Mission at that Base. In 1992, the TCA , Camp Pendleton, the City of San Clemente and the State Parks Department mutually agreed on one alignment for the FTC toll road on the Base ("Statement of Intent Regarding Foothill Transportation Corridor Oso Parkway to I-5, Modified C Alignment," March 4, 1992). That alignment, previously known as the Modified-C alignment, then later the CP alignment and now referred to as the Far East Corridor alignment, represents the one and only alignment which meets the Marine Corps' 1988 stipulations for constructing a corridor project on Camp Pendleton. This document recited the respective opinions and positions of each of these organizations

with respect to the Modified C Alignment Alternative, in the event that this alternative were to be certified as environmentally superior and selected by the TCA Board of Directors as the locally Preferred Alternative. That Statement of Intent required those agencies to participate in ongoing discussions regarding mitigation, final design and the scope of the EIS analysis. Since the 1988 Commandant Letter and the 1992 Statement of Intent, the Marine Corps has consistently maintained that no alignment other than the previously agreed to Modified-C alignment (now the FEC-Complete Alternative) would be permitted on Camp Pendleton.

The alignment, identified in the 1992 Statement of Intent, previously and known at that time as the Modified-C alignment, then later the CP alignment, and now referred to as the Far East Corridor alignment, represents the one and only alignment which meets the Marine Corps' 1988 stipulations for constructing a corridor project on Camp Pendleton. The FEC-M, FEC-W and A7C-FEC-M/Preferred Alternatives meet the 1988 and 1992 stipulations for constructing a corridor on Camp Pendleton. The Agricultural Fields (AF) and Cristianitos Variation (CV) alignments which extend further south into the Base do not meet those stipulations.

In June 1992, FHWA and Camp Pendleton signed a Memorandum of Agreement (MOA) which established agreed upon the principles of organization and coordination in the funding, scoping, preparation, public participation, review and approval of the EIS on only those matters of interest to the Department of the Navy for the EIS process with Camp Pendleton as a cooperating agency. The MOA also required the establishment of a Quality Assurance Program. The TCA and Caltrans concurred in the MOA.

Based on the longstanding Marine Corps position allowing consideration of only the FEC alignment on the Base, consistent with the 1992 "Statement of Intent" and the June 1992 MOA with the TCA, the Marine Corps, as a cooperating agency on this EIS/SEIR, has indicated that the AF and CV alignments are not feasible and could not be built on the Base. In 2002, FHWA concurred that corridor Alternatives containing the AF and CV segments are infeasible and that they should not be evaluated in detail in the EIS/SEIR. In July 2003, the Collaborative concurred with the removal of the Far East Corridor-Cristianitos Variation (FEC-CV), Far East Corridor-Agricultural Fields Variation (FEC-AFV), Alignment 7 Corridor-Far East Crossover (Cristianitos) Variation (A7C-FECV-C) and Alignment 7 Corridor-Far East Crossover (Agricultural Fields) Variation (A7C-FECV-AF) Alternatives from detailed consideration in the EIS/SEIR.

ES.5.5.2 Other build Alternatives

In June, July and August 2003, the Collaborative considered the wide range of Alternatives analyzed in the technical reports and specifically considered each Alternative for advancement into or elimination from detailed evaluation in the EIS/SEIR. To compare the Alternatives, parameters for evaluating each alternative were developed by the Collaborative members and the TCA. These parameters were specifically related to biological resources, (riparian resources, coastal sage scrub (CSS) and coastal California gnatcatcher), traffic, socioeconomics (acquisition of residential units), project costs and cost effectiveness. Each Alternative was ranked based on its performance for each measure, in comparison to the performance of the other Alternatives for that measure. All the build Alternatives evaluated by the Collaborative in this process are shown on Figure ES.3-1. Based on this evaluation and comparison process, the Collaborative agreed to eliminate ten Alternatives from detailed consideration in the EIS/SEIR. The eliminated Alternatives and a brief summary of why each Alternative was eliminated are described below.

Far East Corridor (FEC) Alternative. The FEC Alternative performed the worst when evaluated for impacts to riparian resources, CSS and gnatcatchers; moderately well for congestion relief on I-5; well in

total hours of total travel time savings; moderately related to total project costs; and moderately well on cost per hour of travel time saved and it displaces no residences. Based on the poor performance of the FEC Alternative for the biological resource measures and the availability of similar Alternatives which perform well on the traffic, socioeconomics and costs measures and better on the biological resource measures, the Collaborative agreed to delete the FEC Alternative from consideration in the EIS/SEIR. The FEC-M and FEC-W Alternatives, described earlier, were substituted for the FEC Alternative and were carried forward for detailed consideration in the EIS/SEIR. The FEC-M and FEC-W Alternatives are refinements of the FEC Alternative designed to substantially reduce biological resource impacts. For further discussion of the alternatives refinement process, refer to Section ES.4.3.3 later in this Executive Summary.

Far East Corridor-Talega Variation (FEC-TV) Alternative. This Alternative performed poorly for impacts to waters of the United States; moderately in impacts to CSS; very high in impacts to gnatcatchers; moderately well for congestion relief on I-5; moderately for hours of travel time saved and for the total project cost; moderately well for the cost per hour of travel time saved; and it displaces 703 residences. Based on the low performance of the FEC-TV Alternative for the biological resource measures and the availability of similar Alternatives which perform well on the traffic, socioeconomics and cost measures and better on biological resources measures, the Collaborative agreed to delete the FEC-TV Alternative from consideration in the EIS/SEIR.

Far East Corridor-Ortega Highway Variation (FEC-OHV) Alternative. This Alternative performed poorly for the traffic measures because this Alternative terminates at Ortega Highway and does not provide a connection to I-5. It performed well on total project costs; moderately for cost per hour of travel time saved; moderately well for impacts to riparian ecosystems and CSS; moderately on impacts to the coastal California gnatcatcher; and it displaces no residences. Based on the poor traffic performance and the high cost per hour of travel time saved under this Alternative and the only moderate performance related to the biological resource measures, the Collaborative agreed to delete the FEC-OHV Alternative from consideration in the EIS/SEIR.

Far East Corridor-Avenida Pico Variation (FEC-APV) Alternative. This Alternative performed poorly for impacts to riparian resources; moderately for impacts to CSS and gnatcatchers; moderately for traffic congestion relief on I-5 and hours of travel time savings; and it displaces no residences. The traffic benefits under this Alternative are better than the Alternatives that terminate at Ortega Highway, because this Alternative extends to Avenida Pico, but it still does not provide a connection to I-5. Based on the poor performance of this Alternative related to the biological resource measures and the only moderate level of traffic benefits, the Collaborative agreed to eliminate the FEC-APV Alternative from consideration in the EIS/SEIR.

Central Corridor-Ortega Highway Variation (CC-OHV) Alternative. This Alternative performed poorly for the traffic measures, because it terminates at Ortega Highway and does not provide a connection to I-5. It performed well for total project costs; poorly for cost per hour of travel time saved and it displaces no residences. Based on the poor traffic performance and the high cost per hour of travel time saved, the Collaborative agreed to delete the CC-OHV Alternative from consideration in the EIS/SEIR.

Alignment 7 Corridor (A7C) Alternative. This Alternative performed moderately well on impacts to riparian ecosystems; moderately for impacts to CSS; poorly for impacts to gnatcatchers; well for congestion relief on I-5; moderately well for hours of vehicle travel time saved; poorly based on project costs; moderately on cost per hour of travel time savings and it displaces 704 residences. Based on the moderate performance of the A7C Alternative for the biological resource measures; the poor performance related to the socioeconomics measures and the availability of other Alternatives which provide similar

performance on the traffic measures and better performance on the biological and socioeconomics measures, the Collaborative agreed to delete the A7C Alternative from consideration in the EIS/SEIR.

Alignment 7 Corridor-7 Swing Variation (A7C-7SV) Alternative. The A7C-7SV Alternative performed poorly based on project costs; moderately on cost per hour of travel time savings; moderately well for impacts to riparian ecosystems; moderately for impacts to CSS; poorly for impacts to gnatcatchers and it displaces 602 residences. Based on the poor and moderate performance of this Alternative related to project costs and socioeconomics, the Collaborative decided to eliminate the A7C-7SV Alternative from consideration in the EIS/SEIR.

Alignment 7 Corridor-Far East Crossover Variation (A7C-FECV) Alternative. This Alternative performed poorly for impacts to riparian resources; the worst for impacts to gnatcatchers; very poorly for impacts to CSS; poorly for project costs and moderately for cost per hour of travel time saved. Based on its poor performance for the biological resource measures and project costs, the Collaborative agreed to eliminate the A7C-FECV Alternative from consideration in the EIS/SEIR. The A7C-FEC-M Alternative, described earlier, was substituted for the A7C-FECV Alternative and was carried forward for evaluation in the EIS/SEIR. The A7C-FEC-M Alternative is a refinement of the A7C-FEC Alternative. For further discussion of the alternatives refinement process, refer to Section ES.4.3.3 later in this Executive Summary.

Alignment 7 Corridor-Ortega Highway Variation (A7C-OHV) Alternative. This Alternative performed poorly for percent of traffic operating in congestion on I-5 in 2025 and in hours of vehicle travel time saved; and the worst of all the build Alternatives for cost per hour of travel time saved. This is because this Alternative terminates at Ortega Highway and does not provide a connection to I-5. The A7C-OHV Alternative performed moderately well for impacts to riparian ecosystems, CSS and gnatcatchers. Based on the poor traffic performance and the high cost per hour of travel time saved, the Collaborative agreed to delete the A7C-OHV Alternative from consideration in the EIS/SEIR.

Arterial Improvements Plus HOV and Spot Mixed-Flow Lanes on I-5 (AIP) Alternative. The AIP Alternative performed poorly in project costs and in cost per hour of travel time saved; well for traffic operating in congestion on I-5; moderately for hours of travel times savings; well in impacts to riparian ecosystems, CSS and gnatcatchers; and it displaces 898 residences. Based on the very poor performance of this Alternative related to project costs and socioeconomics, the Collaborative agreed to eliminate the AIP Alternative from consideration in the EIS/SEIR.

ES.6 COORDINATION AND CONSULTATION

ES.6.1 OVERVIEW OF AGENCY AND PUBLIC CONSULTATION

One of the primary goals of NEPA and CEQA is to ensure early coordination and consultation with resources agencies. Over the course of planning for the SOCTIIP, the FHWA and the TCA have coordinated and consulted with a wide range of public agencies, including the USFWS, ACOE, EPA, NMFS, Caltrans, California Department of Fish and Game (CDFG), California Department of Parks and Recreation, California Coastal Commission (CCC), State Historic Preservation Officer (SHPO), and the DON and MCB Camp Pendleton.

The general public and agencies have been invited on a number of occasions to provide input on the proposed SOCTIIP, both formally as required under CEQA and NEPA and informally in additional meetings and other input opportunities. The public involvement program is described in Section 11.0 (Comments and Consultation) in the EIS/SEIR and is documented in detail in the "South Orange County Transportation Infrastructure Improvement Project Scoping Summary Report" (April 2003) which is

available for review at the TCA office. The public participation process for the SOCTIIP is summarized below.

ES.6.2 PUBLIC AND AGENCY INVOLVEMENT FOR THE CURRENT EIS/SEIR

ES.6.2.1 Public Notification Process

Three public scoping meetings for the SOCTIIP were held in Orange and San Diego Counties in March 2001 to solicit input from public agencies, members of the general public, stakeholders and other interested parties related to the SOCTIIP alternatives and the overall scope and content of the EIS/SEIR. Notification of the public scoping meetings was provided via the TCA "Get Involved with Foothill-South" flyer, a one page overview of the SOCTIIP Alternatives and announcing the public scoping meetings; the TCA Website (www.thetollroads.com) which provided information on the dates and locations of the scoping meetings as well as providing an opportunity to submit comments directly on the website; advertisements/notices in seven area newspapers; and publication of the dates of the scoping meetings in the Federal Register on March 14, 2001 (66 F.R. 10934). In addition, the TCA flyer and a request to receive the Foothill South public notices was distributed to federal, state and local agencies and interested parties on March 16, 2001.

ES.6.2.2 SOCTIIP Scoping Meetings

The scoping process allows the lead agency to solicit input from the public and interested agencies on the nature and extent of issues and impacts to be addressed in the EIS/SEIR and the methods by which those impacts will be evaluated. NEPA specifically requires the lead agency to consult with federal agencies that have jurisdiction by law or special expertise on a proposed action. The lead agency is also required to solicit appropriate information from the public during EIS preparation. CEQA encourages the use of scoping by the lead agency to ensure identification of issues that are of concern to responsible agencies and the general public and requires scoping under some circumstances. Three scoping meetings were held for the SOCTIIP EIS/SEIR: March 26, 2001 (San Clemente), March 27, 2001 (Rancho Santa Margarita) and March 29, 2001 (Oceanside). The format of these scoping meetings included a presentation by the TCA describing the SOCTIIP Alternatives and the environmental process; public comments; and informal information at presentation boards provided at locations throughout the meeting space. Handouts describing the SOCTIIP Alternatives and the environmental process were distributed.

Public comments were accepted in the following ways at the scoping meetings: verbal comments following the formal presentation, with comments taken by a court reporter; verbal comments at any time during the scoping meeting, with comments taken by a court reporter, in an area separate from the main meeting room; written comments at the scoping meeting, using either personal stationary or forms provided at the meeting; written comments submitted to the TCA after the scoping meetings; written comments on the TCA's website; and written comments received by FHWA and transmitted to the TCA. Copies of the written comments received at the scoping meetings are provided in Appendix C of the EIS/SEIR. Copies of the transcripts of all the verbal comments are provided in the Scoping Report. Approximately 400 comments were received during and after the public scoping meetings held in March 2001. These comments are summarized in Section 11.0 in the EIS/SEIR.

ES.6.2.3 Other Meetings

Meetings to solicit input from other agencies were conducted with the California Department of Parks and Recreation (June 4, 2001), CDFG (June 26, 2001 and December 4, 2003), NMFS (September 17, 2001), the CCC (October 16, 2001), and several environmental groups (September 24, 2001; groups attending were Natural Resources Defense Council, Endangered Habitats League, Audubon Society and San Members). The issues raised by the attendees at these meeting are summarized in Section 11.0 of the EIS/SEIR.

ES.6.2.4 Native American Consultation

Native American consultation is being conducted as part of the Section 106 compliance activities for the SOCTIIP and will continue during circulation of the EIS/SEIR, the responses to comments process, and subsequent Section 106 activities. A letter detailing the project and providing United States Geological Survey (USGS) 7.5 minute maps of the SOCTIIP build Alternatives was sent to the California Native American Heritage Commission (NAHC) requesting a search of their Sacred Lands File and a list of Native American groups with an interest in the project area. Certified, return receipt letters were sent on November 12, 2003 to all tribal representatives identified by the NAHC describing the SOCTIIP build Alternatives and providing maps depicting the routes of the Alternatives. The letter specifically requested any information, or consultation the tribal representatives wish to share on the proposed undertaking. Caltrans followed up the letter with phone calls to each tribal representative. To date, no tribal representative has raised substantive issues regarding the proposed project. Consultation with Native American representatives will continue throughout the environmental and Section 106 processes for the proposed project. For updated information on Native American consultation, see Section ES.9.1.

ES.6.2.5 Notice of Preparation for the SEIR

The NOP is a required notice under CEQA to inform public agencies and persons requesting notice that an agency will be preparing an EIR. The purpose of the NOP is to solicit input on issues that should be addressed in the EIR, consistent with Section 15082 of the CEQA Guidelines. The NOP for the SOCTIIP Subsequent EIR included a description of the SOCTIIP Alternatives and a preliminary evaluation of the potential environmental impacts of the SOCTIIP Alternatives. A copy of the NOP is provided in Appendix B of the EIS/SEIR. The TCA issued the NOP for the SOCTIIP SEIR in June 2001. The NOP was distributed on June 7, 2001 by certified mail to a total of 4,055 recipients including federal, state and local agencies, property owners, members of the general public, groups and organizations and other potentially interested parties. It was posted with the Orange County Clerk's office on June 7, 2001 and on June 8, 2001 with the San Diego County Clerk. The distribution list for the NOP is on file at the TCA. The NOP was distributed by certified mail to property owners and agencies in proximity to all the alignments of the SOCTIIP build Alternatives. Because the I-5 Alternative was a new alternative and there was potential that recipients along I-5 might not have been fully aware of the SOCTIIP, a separate cover letter was provided in the NOP package for those recipients.

Section 11.0 of the EIS/SEIR summarizes the comments received by the TCA in response to the NOP. A total of 25 agencies, nine groups and organizations and 58 members of the general public provided written NOP comments. All copies of the written comments received in response to the NOP are provided in Appendix B of the EIS/SEIR.

ES.6.2.6 Notice of Intent for the EIS

The purpose of a NOI under NEPA is to provide notification that a federal agency will be preparing an EIS. The NOI specifically solicits the input of federal agencies and others on issues that should be addressed in the EIS. FHWA originally published a NOI for the FTC-S EIS in the Federal Register on June 4, 1986 (51 F.R. 20398) and again on December 16, 1993. FHWA published a Revised NOI on February 20, 2001 in the Federal Register (66 F.R. 10934) which notified federal agencies that an EIS will be prepared for a proposed transportation improvement in south Orange County and northern San Diego County. The February 2001 NOI described the proposed SOCTIIP Alternatives and the history of the project related to the earlier NEPA and CEQA notices and studies. FHWA published a Supplemental NOI in the Federal Register on March 14, 2001 (66 F.R. 10934) to inform federal agencies of the dates, times and locations of the three scoping meetings in March 2001. Copies of the Revised and Supplemental NOIs are provided in

Appendix B of the EIS/SEIR. Written comments on the NOIs were received from two federal agencies and three environmental groups. Copies of these comment letters are provided in Appendix C in the EIS/SEIR.

ES.6.2.7 Public Participation for TCA EIR 3

Prior to this current EIS/SEIR, the TCA prepared EIR 3 for the FTC-S. An NOP for TCA EIR 3 was distributed on December 6, 1989. Twenty agencies and public groups responded to the NOP. Concerns raised included land use, traffic, public services and utilities, open space and recreation, biological resources, military impacts, hydrology, noise and air quality. TCA Draft EIR 3 was released for public review on August 9, 1990, and the public review period ended October 9, 1990. The Draft EIR was distributed to local, state and federal agencies, and a Notice of Availability (NOA) was sent to property owners within 91.4 meters (300 feet) of the corridor in August 1990. The TCA held a public meeting on September 10, 1990, at the City of San Clemente Community Center to receive comments and answer questions pertaining to Draft EIR 3. Approximately 400 individuals were in attendance. The City of San Clemente Planning Commission meeting on October 2, 1990 and the City Council meeting on October 3, 1990 offered residents additional opportunities to comment on Draft EIR 3. Numerous comments on Draft EIR 3 were received. Written responses to the comments were prepared and circulated for public review in June 1991. The primary areas of concern raised during the public review process were natural resources, alternatives, traffic, parkland and open space impacts, hydrology/water quality, land use impacts, growth inducement, noise and aesthetics. In response to concerns raised over the design of the alignment identified in Draft EIR 3, modifications were incorporated, including the inclusion of wildlife crossings at key locations. A Draft Supplemental EIR was prepared to address these modifications to the C Alignment, along with the responses to comments on the Draft EIR 3. An NOA for the Draft Supplemental EIR and response to comments was distributed. On October 10, 1991, the TCA Board of Directors adopted the Modified C Alignment as the locally Preferred Alternative and certified the EIR as adequate.

The current EIS/SEIR is a joint federal/state environmental document. The EIR portion of the current EIS/SEIR was prepared as a Subsequent EIR to certified Final EIR 3 because additional alternatives were developed after Final EIR 3 was certified.

The FHWA and the TCA prepared and circulated the Draft EIS/SEIR for the proposed project for public review from May 7, 2004, to August 6, 2004. Documents were distributed to agencies, institutions, political representatives, community groups and interested parties. In response to requests from federal and local agencies, the FHWA and the TCA extended the public review period to 92 days, which is more than twice the minimum review period of 45 days. Over 7,000 comments were received during the public review period. Comments on the Draft EIS/SEIR were received from federal, state and local agencies; organizations; interested parties; and private citizens, and responses are provided in the Response to Comments document. Also, additional Native American consultation has been accomplished since the publication of the Draft EIS/SEIR.

ES.6.3 NEPA/SECTION 404 MEMORANDUM OF UNDERSTANDING

ES.6.3.1 Phase I of the SOCTIIP Collaborative

The SOCTIIP Collaborative first convened in August 1999 and continued to meet monthly through November 2000, which is referred to as Phase I. The NEPA/Section 404 MOU signatory agencies and the TCA retained a neutral facilitator to assist in developing the project alternatives to be evaluated in the current EIS/SEIR. It was during this process that the signatory agencies referred to the project as the South Orange County Transportation Infrastructure Improvement Project or SOCTIIP. The NEPA/404 MOU agencies and the TCA are collectively referred to as the "SOCTIIP Collaborative." The SOCTIIP

Collaborative is comprised of a group of federal and state transportation and resource agencies collaboratively working toward implementation of the 1994 NEPA/Section 404 MOU. After 15.5 months of discussion, a set of alternatives was selected for analysis. All those SOCTIIP alternatives met the Purpose and Need Statement concurred on by the NEPA/Section 404 MOU signatory agencies. In November 2000, the SOCTIIP Collaborative concurred on the alternatives to be evaluated in the current EIS/SEIR. These alternatives included the toll road corridor, arterial and I-5 Alternatives shown on Figure ES.4-1. These Alternatives were described to the public at a public meeting in November 2000 and public input was taken.

ES.6.3.2 Phase II of the SOCTIIP Collaborative

The objective of Phase II of the SOCTIIP Collaborative was to ensure a comprehensive and efficient process for managing the issues during the preparation and approval of the EIS for the SOCTIIP and implementation of the steps in the NEPA/Section 404 MOU. Building on the success of Phase I of the SOCTIIP Collaborative, a facilitated process to develop and review the technical analyses and environmental documentation leading to the EIS development was implemented. The firm of CDR is the facilitator for Phase II. Facilitated meetings to manage key identified issues were held approximately monthly during the development of the technical studies and the EIS/SEIR.

In addition to the Collaborative members under the NEPA/404 MOU, the TCA and Caltrans also participated in the Collaborative process in Phases I and II. MCB Camp Pendleton also participated in Phase II, in their role as a cooperating agency on the EIS/SEIR.

During Phase II, the SOCTIIP Collaborative participated in the following activities:

Scoping of Technical Reports (2001). The Collaborative participated in reviewing the scopes of work (SOWs) developed for the technical reports to analyze the potential impacts of the alternatives selected for evaluation. Collaborative members were given the opportunity to provide comment and direction on individual technical report SOWs. Member input was reviewed and incorporated as applicable into the final SOWs.

Technical Report Review (2002 and 2003). The TCA distributed each of the technical reports to the Collaborative for review and comment prior to their incorporation into the EIS/SEIR. Presentations on the methodology, findings and conclusions of key technical reports were presented at the Collaborative meetings as requested by the members. At the request of Collaborative members, additional sensitivity analyses and further studies were conducted to respond to issues brought up by one or more of the members. Collaborative members were requested to provide comments on the technical reports within a 30-, 60-, or 90-day period, depending on the technical report. The TCA and its environmental and technical staff responded to each of the comments received on the technical reports in the form of comment/response tables that were then distributed to each Collaborative member for review and comment. The purpose of this task was to recognize and address potential areas of concern as determined by the reviewing regulatory agencies early in the planning process.

Alternatives Refinement Process. Based on review of the technical reports, identification of sensitive natural resources in the study area and input from the Collaborative, the TCA considered ways to refine the corridor alternatives that were to be analyzed in the Draft EIS/SEIR. The refinement process suggested where site-specific adjustments to an alignment might improve or lessen impacts. The objective of any proposed refinement and/or change to an alignment to the existing alternatives was to minimize or avoid potential environmental impacts. The proposed refinement process is similar to the successful refinement process conducted for the San Joaquin Hills Transportation Corridor (SR-73) and

the Eastern Transportation Corridor (SR-241/SR-261/SR-133) during the environmental review processes for those projects.

Issues considered for potential site specific refinements included avoiding sensitive coastal sage scrub habitat, avoiding sensitive wetlands and encroachment into drainages, minimizing or avoiding effects on wildlife connectivity (wildlife movement through the area) and other key environmental issues. In addition to biological information, other important data also evaluated included: 1) geological data in relation to the locations of landslides, 2) cultural resources data and 3) existing land use data such as residential, recreational, military and utilities uses. This information was plotted on maps and the alignments were engineered to avoid or minimize impacts to these designated areas of concern to the extent feasible and reasonable.

The refinement process suggested where site-specific adjustments to an alignment might improve or lessen impacts. During the process of attempting to minimize environmental impacts, it became apparent that some of the original alignments could be substantially improved by both vertical and horizontal shifts in those alignments. TCA staff engineers modified some Alternatives where there was an opportunity to substantially minimize impacts to both the natural and built environments. The result of this process was the development of three refined alignments. The original FEC alignment was modified into two refined alignments: the Far East Corridor-Modified and the Far East Corridor-West (FEC-M and FEC-W). The Alignment 7 Corridor-Far East Corridor Variation (A7C-FECV) was refined into the Alignment 7 Corridor-Far East Corridor-Modified (A7C-FEC-M).

As the refinement process moved forward it was determined that to maximize the beneficial effect of the refined Alternatives it would be necessary to encroach on the Donna O'Neill Land Conservancy (Conservancy). The Conservancy is an area of 520 hectares (1,284) acres set aside by Rancho Mission Viejo as mitigation for conservation and preservation purposes for the Rolling Hills Planned Community development. The possibility of encroachment was discussed with members of the SOCTIIP Collaborative who agreed that TCA should explore this option. Biological resource studies were conducted to evaluate potential impacts to this sensitive area. Based on the findings of these studies and evaluating and comparing the potential impacts of encroachment into the Conservancy, it was determined that a complete environmental evaluation of the refined alternatives would be initiated.

After reviewing the technical data produced and evaluating the potential impacts of the refined alternatives with Collaborative members, the following considerations resulted: the habitat value of the Conservancy is of no greater value than other habitat located adjacent to the Conservancy; impacts to the highly sensitive Blind and Gabino Canyon wetlands could be avoided with the refined alignments; impacts to Cristianitos Canyon and associated wetlands could be avoided; potential displacement to Talega residents could be avoided; visual impacts to areas west of the Conservancy could be minimized; and large landslide hazards could be avoided resulting in a substantial reduction in remedial grading efforts thereby reducing disturbance limits.

In August 2003, the Collaborative agreed to substitute the FEC-M and the FEC-W alignments for the earlier FEC alignment and to substitute the A7C-FEC-M alignment for the earlier A7C-FECV) alignment.

The following provides an overview of the avoidance and/or minimization of environmental impacts as a result of the refinement process and implementation of the three refined alternatives.

Wetlands. On review of the information in the initial technical studies, it was apparent that one of the most important environmental concerns was the potentially large impact to wetlands under the original FEC alignment. To minimize these impacts, two revised alignments, the FEC-M and FEC-W, were developed and the following adjustments were made to the original FEC alignment:

- At the very northern end of the FEC alignment, in the vicinity of Tesoro High School, the Tesoro wetlands area was avoided by shifting the alignment to the east and shortening the southbound on-ramp structure.
- Impacts to the wetland areas in Cristianitos Creek and tributaries to the Creek were minimized by shifting the FEC-M alignment to the east onto a slight topographic rise. The FEC-W alignment was adjusted to avoid Cristianitos Creek by moving the alignment west onto hillside terrain above the Creek.
- The major wetlands impact of the FEC alignment was at the confluence of Blind and Gabino Canyons. This wetlands complex was avoided by shifting the FEC-M and FEC-W alignments to the west, completely out of this confluence area.
- At the southern end of the FEC alignment, impacts to wetlands in the vicinity of San Mateo Creek were minimized by adjusting the I-5 direct connector structure to decrease the right-of-way width required to build the structure.

By implementing these alignment adjustments, impacts to wetlands were reduced from approximately 65 hectares (160 acres) for the FEC Ultimate to approximately 22 hectares (53 acres) for the FEC-M Ultimate and approximately 16 hectares (40 acres) for the FEC-W Ultimate. Adjustments to the A7C-FECV alignment resulted in a reduction of wetland impacts from approximately 26 hectares (65 acres) in the A7C-FECV-Ultimate to approximately 18 hectares (45 acres) for the A7C-FEC-M. Quantification of potential impacts to wetlands was determined by assessing the linear distance of wetlands and stream channels directly impacted by a given Alternative. This wetland quantification was based on a plan level identification of potential wetlands. Because many of these areas will not be identified as wetlands during the formal wetland delineation process, this estimate of impacts to wetlands is overstated.

Pacific Pocket Mouse. The refined FEC-M, FEC-W and A7C-FEC-M/Preferred Alternatives also reduce impacts to sensitive species. At the southern end of the FEC and A7C-FECV alignments, impacts to the Pacific pocket mouse (PPM) have been completely avoided by shifting the alignments away from the PPM habitat and limiting the grading in the area by use of retaining walls.

Coastal California gnatcatcher/coastal sage scrub. Impacts to the coastal California gnatcatcher and associated coastal sage scrub (CSS) habitat are also reduced by the refined alignments. For the original FEC and A7C-FECV alignments, the numbers of gnatcatcher use areas identified were 21 and 22, respectively, in the Ultimate. These were reduced to nine for the FEC-W, 10 for the FEC-M and 11 for the A7C-FEC-M. Impacts to CSS were also reduced by the refinements. The FEC and A7C-FECV originally impacted 211 hectares (520 acres) and 202 hectares (499 acres) of CSS, respectively. By knowing the location of the CSS based on the technical studies and modifying the original alignments to minimize impact to this habitat, the refinements reduced the acres of CSS take. Potential impacts to CSS for the refinements are approximately 180 hectares (445 acres), 167 hectares (410 acres) and 156 hectares (385 acres) for the FEC-M, FEC-W and A7C-FEC-M-Ultimate Alternatives, respectively.

Earthwork/Landslides. Another important aspect of the refined alternatives is that they avoid many of the existing landslides in the area. Avoiding the landslides decreases the remedial grading for the refinements, which reduces the disturbance limits. The refined alternatives also reduce the earthwork quantities from the original FEC and A7C-FECV alignments. This was accomplished by engineering the road geometry to more closely follow the natural terrain. By conforming to the existing ground

surface, the amount of cut and fill grading decreases, which in turn reduces the disturbance limits for the refined alignments.

Residential Displacement. In relation to land use, the A7C-FEC-M/Preferred alignment does not result in the displacement of existing residences while the original A7C-FECV had a total of 56 residential takes. This reduction in land use impacts was accomplished by shifting the alignment to the eastern property boundary of the Talega development in San Clemente.

Wildlife Connectivity. The refined alternatives provide wildlife connectivity. By paralleling the Talega property boundary, the revised A7C-FEC-M alignment provides wildlife connectivity to the open space area to the east. The FEC-W alignment also provides this connectivity as the FEC-W and A7C-FEC-M are on a shared alignment in this area.

Utilities. The refined alignments also minimize impacts to existing utilities. This helped reduce impacts to sensitive areas because existing utilities can be left in place and do not have to be relocated to undisturbed areas.

Visual. The refined alternatives would generally have visual impacts similar to the impacts of the FEC and the A7C-FECV alignments.

Alternative Elimination Process (2003). As described earlier in Section ES.3.4, during June, July and August 2003, the Collaborative participated in an alternative elimination process. The preliminary environmental analysis for the selected measures involved determination of key environmental issues for assessment. This was accomplished through the development of the evaluation measures. Using the associated measured parameters, specific impacts were calculated for each of 16 corridor and three non-corridor build Alternatives. The evaluation measures were applied equally to all the SOCTIIP build Alternatives. This process resulted in the elimination and/or substitution of 10 of the Alternatives that were being evaluated. For a detailed discussion on the alternative elimination process, refer to Section 2.5 in the EIS/SEIR.

EIS/SEIR Screencheck Review (2003). The Collaborative member agencies were given the opportunity to review the screencheck EIS/SEIR prior to the distribution of the Draft EIS/SEIR to the public. The members agencies provided comments on the screencheck EIS/SEIR. The TCA responded to each of the comments received on the Screencheck EIS/SEIR in the form of comment/response tables.

ES.6.3.3 Next Phase of the SOCTIIP Collaborative

The SOCTIIP Collaborative will continue monthly facilitated meetings leading to the selection of a Least Environmentally Damaging Practicable Alternative (LEDPA), a Preferred Alternative and the Record of Decision (ROD) for permitting and construction.

ES.6.4 AREAS OF CONTROVERSY

The areas of controversy relate to the determination of whether the project is acceptable in light of its environmental effects and what alternative should be selected. The following are the key areas of controversy:

- Selection of a Preferred Alternative is an area of controversy. No Preferred Alternative has been selected prior to the circulation of this Draft EIS/SEIR. There is controversy among resource agencies, local governments in the study area and members of the public on the importance of the natural environment compared to the urban environment and displacements of residential uses.

- Some agencies and members of the public have questioned the need for the project.
- The potential for growth inducing effects of the corridor build Alternatives, including the effect on the Rancho Mission Viejo General Plan Amendment/Zone Change area, has been a concern expressed by the public and agencies.

ES.6.5 UNRESOLVED ISSUES

The major unresolved issue is the decision to select a build or no-build Alternative, and, if a build Alternative is selected, to determine which build Alternative is the Preferred Alternative. The environmental analysis information that will inform those decisions is summarized in Sections ES.6 and is addressed in detail in the EIS/SEIR. The unresolved issues below are specific implementation level issues that are unresolved as of the circulation of this Draft EIS/SEIR:

- There are two large-scale studies ongoing in the study area, the Special Area Management Plan (SAMP), which addresses wetlands on a watershed basis, and the Southern Subregion Natural Community Conservation Planning (NCCP), which addresses planning for multi-species habitat protection. The environmental analysis for the SOCTIIP addresses these two studies based on the information available at the time of the Draft EIS/SEIR. Because those two studies have not been completed, and a Preferred Alternative for those two studies had not been selected as of publication of this Draft EIS/SEIR, the role of the TCA and the SOCTIIP relative to those two studies may undergo additional refinement.
- The Preferred Alternative is, however, designed to be consistent with the Ranch Plan Settlement Agreement between Rancho Mission Viejo, the County of Orange, the Endangered Habitats League, Natural Resources Defense Council, Sea and Sage Audubon Society, Laguna Greenbelt, Inc., and Sierra Club. The Settlement Agreement authorizes the development of 14,000 dwelling units and other development uses generally in the western or northern portions of the RMV property. The Settlement Agreement also contemplates necessary infrastructure to connect the development areas. The Preferred Alternative is located within areas shown for development on the RMV property as much as is feasible and provides part of the transportation infrastructure serving the development.
- The MPAH shows an interchange between Crown Valley Parkway and some of the SOCTIIP alternatives. This interchange is evaluated as part of the impact analysis, but it is not an interchange that TCA proposes to implement as part of a build Alternative, if a build Alternative is selected. Crown Valley Parkway does not presently extend eastward to a future SOCTIIP alternative.

ES.7 INTENDED USES OF THE EIS/SEIR/ANTICIPATED AGENCY ACTIONS

This EIS/SEIR is intended to fulfill FHWA's responsibilities under NEPA and the TCA's responsibilities under CEQA, specifically related to the identification and disclosure of potential environmental impacts of the SOCTIIP alternatives. The EIS/SEIR is an information document which will be used by decision makers in the consideration of the selection and implementation of a project alternative. In addition, this EIS/SEIR will be used in support of a number of actions by public agencies anticipated for the corridor, arterial and I-5 Alternatives, as described in the following Sections.

ES.7.1 ANTICIPATED AGENCY ACTIONS FOR THE CORRIDOR ALTERNATIVES

Selection of a corridor alternative is anticipated to require the agency actions described below.

ES.7.1.1 Actions by the TCA Board of Directors

Approval of the selected locally preferred corridor alternative, including filing a Notice of Determination for the certified EIR after project action is taken. All actions to design, finance and construct the selected corridor alternative.

ES.7.1.2 Actions by Federal Agencies

Federal Highway Administration (FHWA): Selection of the Preferred Alternative including review and approval of new or revised access to I-5, and the ROD and all necessary approvals regarding design, financing and construction.

United States Department of Navy (DON): Easement agreement for the permanent use of land on Camp Pendleton, if the selected corridor alternative requires the use of land on Camp Pendleton. Per the 1992 MOA between the FHWA and the United States Marine Corps (USMC), participation of the USMC in the preparation of the corridor EIS shall not be construed as a commitment to adopt a particular route location or otherwise approve a proposed project alternative.

U.S. Fish and Wildlife Service (USFWS): Consultation under Section 7 of the ESA if any listed species are potentially affected by the selected corridor alternative. Issuance of an incidental take statement.

Army Corps of Engineers (ACOE) and Environmental Protection Agency (EPA): All agency actions under the CWA, Section 404, including a 404 Permit for discharge in WoUS, if the selected alternative requires work in those jurisdictional areas.

National Oceanic and Atmospheric Administration: Consultation under Section 7 of the ESA if any listed species are potentially affected by the selected corridor alternative.

U.S. Department of Commerce: Coastal Zone Management Act consistency certification appeal from determinations by California Coastal Commission.

ES.7.1.3 Actions by State Agencies

California Department of Fish and Game (CDFG): 1602~~1~~ Streambed Alteration Agreement for work in CDFG jurisdictional waters, if the selected alternative requires work in those jurisdictional areas. A 2081 permit for the take of state listed species or a consistency determination for the take of species that are ~~both~~ state ~~and federal~~ listed. ~~Any approvals relative to migratory birds.~~

California Transportation Commission (CTC): Route adoption.

California Department of Transportation (Caltrans): Approval of design, construction and roadway operations of the adopted alignment.

California Coastal Commission (CCC): Approval of a Coastal Development Permit (CDP) for construction activities in the ~~c~~Coastal ~~z~~Zone and consistency ~~determination~~ certification with the federal Coastal Zone Management Act (CZMA).

State Historic Preservation Officer (SHPO): Concurrence of compliance with Section 106 of the National Historic Preservation Act (NHPA).

ES.7.1.4 Actions by Regional and Other Agencies

Regional Water Quality Control Board (RWQCB): CWA 401 Certification to comply with Section 404 of the CWA. Issuance of a National Pollutant Discharge Elimination System (NPDES) permit, if an individual permit is required. Potential issuance of waste discharge requirements for isolated wetlands not subject to ACOE jurisdiction.

County of Orange and City of San Clemente: General Plan Circulation Element Amendments to reflect the alignment of the selected alternative, following TCA adoption of a locally preferred alternative and CTC route adoption.

Southern California Association of Governments (SCAG): Amendment to the RTP and RTIP if the selected alternative is not already on the RTP.

San Diego Association of Governments (SANDAG): Amendment to the RTP or RTIP if the selected alternative is not already in the RTP.

Orange County Transportation Authority (OCTA): Approval of an amendment to the MPAH, to incorporate the alignment of the selected corridor alternative in the MPAH, if the FEC or a similar alignment is not selected.

California Public Utilities Commission (CPUC): Approval of utility relocation activities and consideration of the EIR.

ES.7.2 ANTICIPATED AGENCY ACTIONS FOR THE ARTERIAL IMPROVEMENTS IN THE AIO ALTERNATIVE

The AIO Alternative, which would result in improvements to Antonio Parkway/La Pata Avenue, is anticipated to require the agency actions described below, related to those arterial improvements.

ES.7.2.1 Actions by the TCA Board of Directors

No action because the TCA would not be the implementing agency.

ES.7.2.2 Actions by Federal Agencies

FHWA: No actions are anticipated, unless the implementing agency or agencies pursues federal funding assistance for some or all of the AIO Alternative arterial improvements.

USFWS: Consultation under Section 7 of the ESA and incidental take statement if any listed species are potentially affected by the AIO Alternative.

ACOE and EPA: 404 Permit for discharge in WoUS, if the AIO Alternative requires work in those jurisdictional areas.

ES.7.2.3 Actions by State Agencies

CDFG: ~~1601~~ 1602 Streambed Alteration Agreement for work in CDFG jurisdictional waters, if the AIO Alternative requires work in those jurisdictional areas. A 2081 permit for the take of state listed species or a consistency determination for the take of species which are both state and federal listed.

State Historic Preservation Office (SHPO): Concurrence of compliance with Section 106 of the NHPA.

ES.7.2.4 Actions by Regional and Other Agencies

County or Other Implementing Agency/Agencies: Approval and implementation of arterial improvements in the AIO Alternative and General Plan Circulation Element Amendments. Acquisition of property, including residential uses, may require use of eminent domain.

Regional Water Quality Control Board (RWQCB): CWA 401 Certification if a 404 Permit is necessary.

SCAG: Amendment to the RTP to reflect the arterial modifications in the RTP, if necessary.

OCTA: Approval of an amendment to the MPAH, to incorporate the wider cross section for Antonio Parkway/La Pata Avenue under the AIO Alternative in the MPAH.

ES.7.3 ANTICIPATED AGENCY ACTIONS FOR I-5 IMPROVEMENTS IN THE I-5 ALTERNATIVE

Selection of the I-5 Alternative, which would result in improvements to I-5, is anticipated to require the agency actions described below, related to those I-5 improvements.

ES.7.3.1 Actions by the TCA Board of Directors

No action because the TCA would not be the implementing agency.

ES.7.3.2 Actions by Federal Agencies

FHWA: Selection of a Preferred Alternative including review and approval of new or revised access to I-5, and the ROD.

United States DON: Easement agreement for the permanent use of land on Camp Pendleton, if the selected alternative requires the use of land from Camp Pendleton.

USFWS: Consultation under Section 7 of the ESA if any listed species are potentially affected by the I-5 improvements under the I-5 Alternative and issuance of incidental take statement.

ACOE and EPA: 404 Permit for discharge in WoUS, if the I-5 improvements under the I-5 Alternative require work in those jurisdictional areas.

National Oceanic and Atmospheric Administration: Consultation under Section 7 of the ESA if any listed species are potentially affected by the selected corridor alternative.

U.S. Department of Commerce: Coastal Zone Management Act consistency certification appeal from determinations by California Coastal Commission.

ES.7.3.3 Actions by State Agencies

CDFG: 1602 Streambed Alteration Agreement for work in CDFG jurisdictional waters, if the I-5 improvements under the I-5 Alternative require work in those jurisdictional areas. A 2081 permit for the take of state listed species or a consistency determination for the take of species which are both state and federal listed.

CTC: Route Adoption.

CCC: Approval of a CDP for construction activities in the coastal zone and consistency determination with the federal CZMA.

SHPO: Concurrence of compliance with Section 106 of the NHPA.

ES.7.3.4 Actions by Regional and Other Agencies

County of Orange, Caltrans and/or Other Implementing Agency/Agencies: Approval and implementation of the I-5 improvements under the I-5 Alternative, including any required General Plan Circulation Element Amendments. Action necessary to acquire property for right-of-way including possible use of eminent domain.

SCAG. Amendment to the RTP ~~to reflect the modifications to I-5 in the RTP~~.

RWQCB. CWA 401 Certification.

ES.8 SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

The potential adverse impacts and beneficial effects of the SOCTIIP Alternatives are discussed in this Section and are summarized in Table ES.6-1. Table ES.6-1 provides a concise overview of the impacts of the eight SOCTIIP build and the two No Action Alternatives which allows for comparison of the impacts of each Alternative to the other Alternatives for each environmental parameter. Following Table ES.6-1, additional tables and figures provide more detailed information for some environmental parameters. The text discussions below provide additional detail of the effects of each Alternative, by environmental parameter, including the following:

- Adverse impacts and beneficial effects of the SOCTIIP Alternatives by environmental parameter. These impacts and effects are described based on the analysis provided in the EIS/SEIR for each environmental parameter.
- Analysis of the potential cumulative impacts of the SOCTIIP Alternatives by environmental parameter. These impacts are based on the cumulative projects in the study area based on either build out of the adopted regional projections (OCP-2000) or a detailed list of recently past, present and reasonably foreseeable projects in the SOCTIIP study area. The projections and cumulative project lists are provided in Section 5.0 (Cumulative Impacts) in the EIS/SEIR.
- Summary of the mitigation measures and other commitments identified to avoid, minimize of compensate for the potential adverse impacts of the alternatives. These mitigation measures describe particular project features or actions that address specific adverse impacts of the alternatives.
- Summary of unavoidable adverse impacts after mitigation. These are impacts which cannot fully be mitigated or impacts for which mitigation is not feasible or available and which remain adverse after implementation of the defined mitigation measures. In addition, the level of significance under CEQA of adverse impacts after mitigation is also described. "Significant" is a determination under CEQA only of the significance of the impacts of the alternatives based on defined thresholds of significance. The determination of significance of impacts by parameter and individual impacts occurs under CEQA only. Section 7.0 (California Environmental Quality Act Evaluation) in the EIS/SEIR describes the CEQA thresholds and the level of significance of the impacts of the SOCTIIP Alternatives under CEQA in detail. Under NEPA, the assessment of the severity of the impacts of

alternatives considers all the impacts of an alternative and does not identify significance by individual impact or parameter.

- Cross references to Sections in the EIS/SEIR where more detailed information is provided regarding the analysis of each environmental parameter.

ES.8.1 SUMMARY OF IMPACTS RELATED TO TRAFFIC AND CIRCULATION

The SOCTIIP Alternatives were evaluated to assess their potential to reduce congestion and improve traffic operating conditions in south Orange County. In addition, the SOCTIIP Alternatives were also evaluated to determine whether any adverse impacts to existing and/or projected traffic operating conditions would occur. See Section 3.0 (Traffic and Circulation) in the EIS/SEIR ~~describes the existing conditions, study area and methodology, impacts analysis and mitigation measures related to traffic and circulation in detail~~ for a detailed discussion. The potential beneficial effects and adverse impacts of the SOCTIIP Alternatives are summarized in Table ES.6-1 and are discussed in detail below.

ES.8.1.1 Potential Beneficial Traffic Effects of the SOCTIIP Alternatives

To assess the beneficial effects of the SOCTIIP build Alternatives related to traffic operations, a comparison of the traffic conditions under the No Action Alternative and build Alternatives was performed. The comparative analysis was performed using 2025 traffic forecasts, with and without the SOCTIIP build Alternatives. The forecasted 2025 weekday peak hour traffic conditions, for the SOCTIIP No Action and build Alternatives are based on build out of the MPAH and the assumption of 14,000 dus under the proposed development plan for RMV. These are the assumptions in Scenario 3 as shown in the tables referenced in this Section. Several scenarios were assessed in the traffic analysis; Scenario 3 is the most likely scenario and, therefore, was used for the traffic analysis findings described in this Section.

A beneficial effect was considered to occur at a road segment, arterial intersection, freeway/tollway segment or freeway/tollway ramp if the following two conditions are satisfied:

- The circulation facility is forecast to operate at a deficient level of service (LOS) in 2025 under the No Action Alternative.
- The facility is forecast to operate at an acceptable (non-deficient) LOS in 2025 under the given build Alternative.

As shown in Figures ES.6-1 to ES.6-8, the SOCTIIP build Alternatives result in varying degrees of improvement compared to the No Action Alternative traffic conditions. In these Figures, future traffic conditions on the freeway/tollway system are expressed in terms of hours of congestion, and future traffic conditions at freeway/tollway interchanges and arterial intersections are expressed as the percentage of available capacity that is used.

The SOCTIIP build Alternatives that include the extension of SR-241 from Oso Parkway to I-5 (FEC-M, FEC-W, CC and A7C-FEC-M/Preferred Alternatives) and the I-5 Alternative generally result in the most substantial improvements to the congestion levels on I-5 and to the LOSs at I-5 interchanges and arterial intersections. The improvements in the traffic operating conditions are less substantial for the SOCTIIP build Alternatives that include an extension to SR-241 that does not extend to I-5 (CC-ALPV and A7C-ALPV Alternatives) and the AIO Alternative.

The specific locations on the circulation system where beneficial effects occur under the SOCTIIP build Alternatives compared to the No Action Alternative are summarized in Table ES.6-2. ~~Table ES.6-2 lists the locations identified as having deficiencies in the No Action Alternative and indicates under each build~~

~~Alternative whether or not the deficiency is alleviated and, if so, under which circulation and land use scenario(s) that deficiency is eliminated. The circulation and land use assumptions in each scenario are described in detail in Section 3.0 of the EIS/SEIR.~~

The Preferred Alternative shows beneficial effects on 32 locations. The I-5 Alternative shows beneficial effects at 38 locations, or 76 percent of the 50 locations listed in Table ES.6-2. The SOCTIIP build Alternatives that include the FTC-S from Oso Parkway to I-5 (FEC-M, FEC-W and A7C-FEC-M/Preferred Alternatives) show beneficial effects at 32 to 33 locations (64 to 66 percent of the 50 locations listed in Table ES.6-2), and the build Alternatives that include the FTC-S from Oso Parkway to Avenida La Pata (the CC-ALPV and A7C-ALPV Alternatives) show beneficial effects at 18 locations (36 percent of the 50 locations listed in Table ES.6-2). Beneficial effects occur at six locations (12 percent of the 50 locations) under the AIO Alternative. The number of beneficial effects listed for each of the SOCTIIP build Alternatives is a summation of the beneficial effects that occur in each circulation and land use scenario that was analyzed. The beneficial effect at a given location that was included in the summation occurs under one or more scenarios, and a location where a beneficial effect occurs in more than one scenario was only counted once in the summation of beneficial effects. The scenarios under which beneficial effects occur at each location are listed in Table ES.6-2.

Systemwide Travel Time Savings

A system wide travel time savings statistic is a general measure of the improvement in the mobility of traffic in south Orange County. Improving traffic flow and relieving congestion are objectives of any transportation improvement. As a means to evaluate the systemwide travel time savings, the changes in the 2025 regionwide vehicle miles traveled (VMT) and vehicle hours traveled (VHT) under the SOCTIIP build Alternatives, compared to the No Action Alternative, were estimated. The changes in systemwide VMT for each SOCTIIP build Alternative were found to be relatively low, meaning that the average length of vehicle trips in south Orange County does not change substantially, in terms of distance, between the No Action Alternative and the build Alternatives.

VHT indicates the travel time savings produced by the traffic congestion relief provided by each of the SOCTIIP build Alternatives. VHT, which is expressed as total hours of reduced vehicle travel time per day, is summarized in Table ES.6-3 and is shown graphically in Figure ES.6-9. The build Alternatives, in general order starting with those Alternatives with the highest amount of systemwide travel time savings to those Alternatives with the lowest, are listed below. The amount of systemwide travel time savings is relatively the same for Alternatives that are listed together and that amount is substantially different from other higher or lower ranking Alternatives. The time savings are based on 2025 traffic conditions that assume the build out circulation system and the proposed 14,000 dus RMV development plan (Scenario 3).

- The FEC-M, FEC-W, CC, A7C-FEC-M/Preferred and I-5 Alternatives, with 18,000 to 21,000 hours of travel time savings per day.
- The CC-ALPV and A7C-ALPV Alternatives, with 8,000 hours of travel time savings per day.
- The AIO Alternative, with 5,000 hours of travel time savings per day.
- The No Action Alternative, with no hours of travel times savings per day.

I-5 Congestion Relief

~~As described earlier in Section ES.2, c~~Congestion relief on I-5 is a key parameter identified in the Purpose and Need Statement for the SOCTIIP. To evaluate congestion relief, the peak hour LOSs

forecast on I-5 in each of the SOCTIIP Alternatives were used to estimate the proportion of daily traffic on I-5 that is anticipated to experience congested conditions. This statistic, which is expressed as the percentage of daily VMT on I-5 in the study area under congested conditions, is summarized in Table ES.6-4 and is shown graphically in Figure ES.6-10. The following lists the SOCTIIP Alternatives in general order from those Alternatives with the lowest percentage of congestion on I-5 (that is, the greatest amount of congestion relief), to those Alternatives with the highest percentage of congestion on I-5 (that is, the least amount of congestion relief) based on 2025 traffic conditions that assume the build out circulation system and the proposed 14,000 dus RMV development plan (Scenario 3). The amount of congestion relief on I-5 is relatively the same for Alternatives that are listed together and that amount is substantially different from other higher or lower ranking Alternatives.

- The I-5 Alternative, with 1.0 percent of daily I-5 traffic experiencing congestion.
- The FEC-M, FEC-W, CC and A7C-FEC-M/Preferred Alternatives, with 2.4 to 3.4 percent of daily I-5 traffic experiencing congestion.
- The CC-ALPV and A7C-ALPV Alternatives, with 7.8 percent of daily I-5 traffic experiencing congestion.
- The AIO Alternative, with 11.3 percent of daily I-5 traffic experiencing congestion.
- The No Action Alternative, with 15.9 percent of daily I-5 traffic experiencing congestion.

Arterial Congestion Relief

The level of traffic congestion on arterial roads was compared for the SOCTIIP Alternatives based on the total hours of vehicle delay forecasted at arterial intersections in the study area during the peak hours. The amount of vehicle delay generally increases as the LOS at intersections on the arterial system worsens. Therefore, the greater the amount of intersection delay under an Alternative, the more congested the arterial road system will be under that Alternative. The total hours of vehicle delay forecast to occur during the peak hours under 2025 conditions based on the No Action and the build Alternatives are summarized in Table ES.6-5 and are shown graphically in Figure ES.6-11. The following lists the SOCTIIP Alternatives, in general order from those Alternatives with the lowest amount of congestion (that is, the greatest amount of congestion relief) on the arterial system to those Alternatives with the highest amount of congestion (that is, the least amount of congestion relief), based on 2025 traffic conditions that assume the build out circulation system and the proposed 14,000 dus RMV development plan. The amount of congestion relief on the arterial system is relatively the same for Alternatives that are listed together. The amount of congestion is substantially less under the SOCTIIP build Alternatives compared to the No Action Alternative.

- The FEC-M, FEC-W, CC, A7C-FEC-M/Preferred and AIO Alternatives, with 7,700 to 7,900 hours of vehicle delay on the arterial system.
- The CC-ALPV and A7C-ALPV Alternatives and the I-5 Alternative, with 8,200 to 8,300 hours of vehicle delay on the arterial system.
- The No Action Alternative, with 9,900 hours of vehicle delay on the arterial system.

Point to Point Travel Time Savings

Comparisons among the SOCTIIP build Alternatives were made based on point to point travel times between I-5 at the Orange/San Diego County border and areas to the north under 2025 conditions that assume the build out circulation system and the proposed 14,000 dus RMV development plan. Travel time reductions are shown in Table ES.6-6 for travel between I-5 at the Orange/San Diego County border

and three geographic areas to the north: south Orange County, north Orange County and the region beyond Orange County (defined as Los Angeles, Riverside, San Bernardino and Ventura Counties). The resulting estimates of travel time savings in the peak directions in southern Orange County (that is, northbound on I-5 in the AM and southbound on I-5 in the PM) are summarized in Table ES.6-6 in terms of minutes and percentages. The travel time reductions are listed in ranges because the travel times vary between the AM and PM periods and also between smaller geographic areas within the three major geographic areas summarized here. The following lists the SOCTIIP build Alternatives, in general order from those Alternatives with the highest amount of point to point travel time savings to those Alternatives with the lowest. The amount of point to point travel time savings is relatively the same for Alternatives that are listed together and that amount is substantially different from other higher or lower ranking Alternatives.

- The I-5 Alternative with travel times to and from south Orange County reduced by 7 to 11 minutes or 25 to 32 percent, travel times to and from north Orange County reduced by 13 to 16 minutes or 17 to 25 percent, and travel times to and from areas beyond Orange County reduced by 13 to 18 minutes or 7 to 14 percent.
- The FEC-M, FEC-W and A7C-FEC-M/Preferred Alternatives with travel times to and from south Orange County reduced by 5 to 10 minutes or 18 to 27 percent, travel times to and from north Orange County reduced by 8 to 12 minutes or 10 to 16 percent, and travel times to and from areas beyond Orange County reduced by 11 to 17 minutes or 5 to 13 percent.
- The CC Alternative with travel times to and from south Orange County reduced by 3 to 7 minutes or 11 to 19 percent, travel times to and from north Orange County reduced by 5 to 10 minutes or 6 to 13 percent, and travel times to and from areas beyond Orange County reduced by 7 to 11 minutes or 3 to 9 percent.
- The CC-ALPV and A7C-ALPV Alternatives with travel times to and from south Orange County reduced by 2 to 4 minutes or 5 to 11 percent, travel times to and from north Orange County reduced by 2 to 6 minutes or 2 to 9 percent, and travel times to and from areas beyond Orange County reduced by 3 to 7 minutes or 2 to 5 percent.
- The AIO Alternative with travel times to and from south Orange County reduced by 1 to 3 minutes or 4 to 8 percent, travel times to and from north Orange County reduced by 1 to 4 minutes or 1 to 5 percent, and travel times to and from areas beyond Orange County reduced by 2 to 5 minutes or 1 to 4 percent.

ES.8.1.2 Analysis of Alternatives with Existing Conditions as the Baseline for Impact Assessment

Detailed descriptions of weekday peak hour traffic conditions under the SOCTIIP build Alternatives, assuming committed circulation system improvements and anticipated future land use, including the 14,000 du proposed RMV plan, are provided in Section 3.0 in the EIS/SEIR. Table 3.4-2 in Section 3.4 (Operations Analysis Results) in the EIS/SEIR summarizes the locations on the study area circulation system where weekday peak hour deficiencies occur under existing conditions and with each SOCTIIP build Alternative based on the performance criteria described in Section 3.2.3 (Performance Criteria for Operations) in the EIS/SEIR. The following summarizes the number of weekday peak hour deficiencies under existing conditions and under the SOCTIIP build Alternatives in 2025:

- Under existing conditions, deficiencies occur at three segments of I-5, 12 freeway/tollway ramps (nine I-5 ramps and three SR-241 ramps) and 10 intersections (six arterial-to-arterial and four arterial-to-freeway/tollway ramps).

- Under the build Alternatives that include the FTC-S toll road extension from Oso Parkway to I-5 with a Far East Corridor connection at I-5 (FEC-M, FEC-W and A7C-FEC-M/Preferred Alternatives), deficiencies occur at eight segments of I-5, 15 freeway/tollway ramps (12 I-5 ramps and three SR-241 ramps) and 29 intersections (20 arterial-to-arterial and nine arterial-to-freeway/tollway ramps).
- Under the build Alternatives that include the FTC-S toll road extension from Oso Parkway to I-5 with a Central Corridor connection at I-5 (CC Alternative), deficiencies occur at seven segments of I-5, 16 freeway/tollway ramps (13 I-5 ramps and three SR-241 ramps) and 27 intersections (18 arterial-to-arterial and nine arterial-to-freeway/tollway ramps).
- Under the build Alternatives that include the FTC-S toll road extension from Oso Parkway to Avenida La Pata (CC-ALPV and A7C-ALPV Alternatives), deficiencies occur at 10 segments of I-5, 16 freeway/tollway ramps (13 I-5 ramps and three SR-241 ramps) and 34 intersections (25 arterial-to-arterial and nine arterial-to-freeway/tollway ramps).
- Under the AIO Alternative, deficiencies occur at 12 segments of I-5, 16 freeway/tollway ramps (11 I-5 ramps and five SR-241 ramps) and 36 intersections (25 arterial-to-arterial and 11 arterial-to-freeway/tollway ramps).
- Under the I-5 Alternative, a deficiency occurs at one segment of I-5, 11 freeway/tollway ramps (eight I-5 ramps and three SR-241 ramps) and 31 intersections (24 arterial-to-arterial and seven arterial-to-freeway/tollway ramps).

ES.8.1.3 Potential Adverse Traffic Impacts of the SOCTIIP Alternatives

Long-Term Adverse Traffic Impacts of the build Alternatives

The adverse traffic impacts of the SOCTIIP build Alternatives were identified by comparing 2025 peak hour traffic conditions based on the No Action Alternative with 2025 peak hour traffic conditions under each of the build Alternatives. A facility on the circulation system is adversely impacted if the following two conditions are satisfied:

- The facility is forecast to operate at a deficient LOS in 2025 under the build Alternative.
- Compared to the No Action Alternative, the contribution to the deficient LOS by the build Alternative exceeds the impact thresholds.

Table ES.6-7 summarizes the locations where direct and indirect adverse impacts occur under the build Alternatives compared to the No Action Alternative, and the circulation and land use scenario(s) under which the adverse impacts occur. The circulation and land use assumptions in each scenario are described in detail in Section 3.0 of the EIS/SEIR. As described in Table ES.6-7:

- The FEC-M, FEC-W and A7C-FEC-M/Preferred Alternatives have no direct adverse impacts to mainline segments of the I-5, arterial intersections or freeway/tollway ramps.
- The CC Alternative has no direct adverse impacts to mainline segments of the I-5, has one direct impact to an arterial intersection and two direct impacts to freeway/tollway ramps.
- The CC-ALPV and A7C-ALPV Alternatives have no direct adverse impacts to mainline segments of the I-5, have seven direct impacts to arterial intersections and three direct impacts to freeway/tollway ramps
- The I-5 Alternative has no direct adverse impacts to mainline segments of the I-5, has twelve direct impacts to arterial intersections and seven direct impacts to freeway/tollway ramps.

- The AIO Alternative has no direct adverse impacts to mainline segments of the I-5, has fifteen direct impacts to arterial intersections and nine direct impacts to freeway/tollway ramps.

The number of direct adverse impacts listed for each of the SOCTIIP build Alternatives is a summation of the direct adverse impacts that occur in each circulation and land use scenario that was analyzed. The direct adverse impact at a given location that was included in the summation occurs under one or more scenarios, and a location where a direct adverse impact occurs in more than one scenario was only counted once in the summation of direct adverse impacts. The scenarios under which direct adverse impacts occur at each location are listed in Table ES.6-7.

The indirect adverse impacts listed in Table ES.6-7 are a result of a change in travel patterns due to new or expanded transportation facilities constructed under a given build Alternative. While these indirect impacts are generally small in magnitude, they are nevertheless adverse impacts under the defined performance criteria. The most common example occurs under a SOCTIIP build Alternative in which the FTC-S diverts traffic from I-5, thereby reducing the level of congestion on I-5. As a result, vehicle traffic that may otherwise avoid I-5 would choose to use I-5, resulting in additional traffic at some ramps and ramp intersections serving I-5. While some I-5 ramps and ramp intersections are deficient under the No Action Alternative, a build Alternative may, in certain cases, worsen those deficiencies because of this additional traffic. Because this traffic does not have origins or destinations in the vicinity of the SOCTIIP transportation improvements under a build Alternative (that is, the traffic occurs in the circulation system but not on or as a result of the SOCTIIP improvements), the impacts of this added traffic are indirect. Specifically, there is no direct connection between this increased traffic and the SOCTIIP improvements built, but rather there is a change in travel routes and patterns due to I-5 having additional capacity compared to the No Action Alternative.

The indirect impacts of the build Alternatives occur at freeway ramps and ramp intersections on I-5. Under the corridor Alternatives, indirect impacts occur at the following I-5 freeway ramps and ramp intersections: northbound ramp intersection at Ortega Highway, northbound on-ramp at Avenida Pico; southbound off-ramp at Camino Capistrano; northbound on-ramp at Ortega Highway; southbound off-ramp at Ortega Highway; and northbound on-ramp at Stonehill Drive. Indirect adverse impacts occur at these locations under all the corridor Alternatives under various traffic assumption scenarios, with the exception of the CC-ALPV and A7C-ALPV Alternatives which do not have an indirect adverse impact at the I-5 southbound Ortega Highway off-ramp, and the CC, CC-ALPV and A7C-ALPV Alternatives which have a direct rather than indirect adverse impact at the I-5 northbound Avenida Pico on-ramp. The I-5 Alternative has no indirect adverse impacts. The AIO Alternative has indirect adverse impacts at the I-5 northbound on-ramp at Stonehill Drive under two build out traffic scenarios.

Long-Term Traffic Impacts Under the No Action Alternative

The No Action Alternative assumes that the circulation system in southern Orange County is developed consistent with current adopted regional, sub-regional, and local transportation plans, with the exception that the FTC is not extended south of its existing terminus at Oso Parkway. The No Action Alternative was used in several analysis scenarios with different land use assumptions in the RMV area and different circulation system assumptions (committed transportation improvements or build out of the MPAH). The circulation system deficiencies under the No Action Alternative in 2025 based on the committed and build out circulation system and the proposed 14,000 dus RMV development plan are:

- 12 segments of I-5 under the committed circulation system and 11 segments of I-5 under the build out circulation system (El Camino Real to Junipero Serra Road and Oso Parkway to El Toro Road).

- 17 freeway/tollway ramps (13 I-5 ramps and four SR-241 ramps) under the committed circulation system and 14 freeway/tollway ramps (nine I-5 ramps and four SR-241 ramps) under the build out circulation system.
- 41 intersections (27 arterial-to-arterial and 14 arterial-to-freeway/tollway ramps) under the committed circulation system and 27 intersections (20 arterial-to-arterial and seven arterial-to-freeway/ tollway ramps) under the build out circulation system.

Under 2025 conditions based on the No Action Alternative with the build out circulation system and the proposed 14,000 dus RMV development plan, extended periods of traffic congestion are forecast on I-5, particularly north of Oso Parkway and from Ortega Highway to south of Avenida Pico. Although congestion is not forecast on the segment of I-5 between Junipero Serra Road and Oso Parkway, the back-up of traffic caused by the congestion problems to the north and south would likely spill over onto that segment of I-5. Under this 2025 scenario based on the No Action Alternative, one or more ramps and/or ramp intersections at the I-5 interchanges at Oso Parkway, Crown Valley Parkway, Ortega Highway and Avenida Pico are forecast to operate over capacity in one or both of the peak hours, as are the main arterial intersections along Antonio Parkway/Avenida La Pata from Oso Parkway to Avenida Pico.

Adverse Construction Impacts on Traffic and Circulation

As shown in Table ES.6-1, there would be potential short-term adverse impacts associated with the movement of construction equipment and workers to and from work site(s), materials movement and diversion of traffic from roads and freeways on which construction will be occurring under the build Alternatives. Roads in the vicinity of construction activities and roads used by construction workers and for materials movement could experience short-term adverse impacts associated with increased construction related traffic.

Cumulative Traffic Impacts

The traffic impact analysis is inherently cumulative because it is based on assumptions of build out in accordance with adopted forecasts and projections or other defined circulation system and land use assumptions. The potential beneficial effects and adverse impacts of the SOCTIIP Alternatives related to traffic were evaluated with several land use and circulation improvement scenarios that ar~~e a~~nalyzed to provide a range of potential cumulative traffic impacts. ~~specific assumptions regarding growth and future improvements to the circulation system in the study area~~. The study area for potential cumulative adverse impacts to traffic and circulation is the area generally served by the existing freeway and arterial circulation system. The impact analysis for the build and No Action Alternatives was based on the impacts of the SOCTIIP Alternatives assuming growth and other land use assumptions at build out~~, and, therefore, includes cumulative impacts in the future condition scenarios~~.

ES.8.1.4 Mitigation Measures Related to Traffic and Circulation

Construction related traffic impacts of the SOCTIIP build Alternatives will be substantially mitigated based on implementation of measure CT-1 which requires the preparation and implementation of a Construction Traffic Management Plan (CTMP). The CTMP will identify haul route alignments and schedules, public information programs, alternative travel routes for schools and emergency service providers and other elements to avoid or substantially reduce potentially adverse construction related traffic impacts of the build Alternatives. Even with the CTMP, it is expected that some short-term construction related traffic impacts would remain adverse after mitigation.

Table ES.6-8 identifies mitigation to avoid or substantially reduce the potential adverse traffic impacts of the SOCTIIP build Alternatives related to long-term direct adverse impacts. As shown, these mitigation measures include additional turn and through lanes at intersections, interchanges and on ramps. Even with mitigation, the CC, CC-ALPV, A7C-ALPV, AIO and I-5 Alternatives would result in substantial long-term direct adverse impacts after mitigation at various intersections and interchanges as discussed below in Section ES.6.1.4.

As described earlier in Section ES.6.1.2 (Analysis of Alternatives with Existing Conditions as the Baseline for Impact Assessment), there would be a substantial number of deficiencies in the circulation system when the existing circulation system is compared to future with and without project traffic demand. No mitigation is proposed for those deficiencies because:

- The appropriate mitigation is the implementation of projects in the MPAH and RTP that are funded or have committed funding as described in Section 3.2.5 (Future Transportation System) in the EIS/SEIR. This mitigation will occur based on existing plans and commitments separate from any SOCTIIP build Alternative.
- Mitigation of these impacts is the responsibility of the other federal, state and/or local agencies or the development projects that will occur in accordance with adopted plans, policies and project approvals.
- Comparison of existing conditions in 2001 to with-SOCTIIP build out in 2025 is somewhat misleading because it overlooks substantial changes that are anticipated to occur within the 2025 planning horizon. The comparison of 2025 with-project conditions to existing conditions does not reflect circulation system changes during the planning horizon that will occur due to future development and implementation of committed road projects.

ES.8.1.5 Unavoidable Adverse Impacts and CEQA Level of Significance after Mitigation Related to Traffic and Circulation

The following SOCTIIP build Alternatives would result in unavoidable long-term direct adverse impacts related to traffic and circulation which cannot be fully mitigated:

CC Alternative: deficiencies at one intersection and two I-5 ramps. The adverse impacts at the I-5 ramps are inconsistent with FHWA policy which prohibits the consideration of an alternative which would reduce the level of service on an existing Interstate facility. These adverse impacts at the I-5 ramps can be substantially mitigated based on design variation to the CC/I-5 interchange design. However, because of other right-of-way, cost and noise impacts which are greater under the design variation than the I-5 connection in the CC Alternative, the design variation is not included in the CC Alternative connection to I-5 and is not included in the mitigation measures for the CC Alternative. Therefore, the CC Alternative would result in unavoidable adverse impacts at two I-5 ramps that are not fully mitigated.

- CC-ALPV Alternative: deficiencies at one intersection and one I-5 ramp.
- A7C-ALPV Alternative: deficiencies at one intersection and one I-5 ramp.
- AIO Alternative: deficiencies at four intersections, one I-5 ramp, and one SR-241 ramp.
- I-5 Alternative: deficiencies at two intersections and three I-5 ramps.

As shown in Table ES.6-8, even with mitigation, the CC, CC-ALPV, A7C-ALPV, AIO and I-5 Alternatives would result in significant adverse long-term direct impacts to intersections and interchanges after mitigation that cannot be mitigated to below a level of significance under CEQA.

The FEC-M, FEC-W and A7C-FEC-M/Preferred Alternatives would not result in unavoidable adverse impacts related to traffic and circulation that cannot be mitigated or that are significant under CEQA after mitigation.

The construction related traffic impacts of the SOCTIIP build Alternatives would be substantially mitigated, but not to below a level of significance under CEQA.

ES.8.2 SUMMARY OF IMPACTS RELATED TO WETLANDS AND WATERS OF THE UNITED STATES

This Section summarizes the potential impacts of the SOCTIIP Alternatives related to wetlands and Waters of the United States (WoUS). See Section 4.10 (Existing Environment, Impacts and Mitigation Related to Wetlands and Waters of the United States) in the EIS/SEIR ~~describes the existing conditions, study area and methodology, impacts analysis and mitigation measures related to wetlands and WoUS~~ for a detailed discussion~~in detail~~. The potential impacts of the SOCTIIP Alternatives related to wetlands and WoUS are summarized in Table ES.6-1.

The TCA criteria for ~~making refinements to the horizontal and vertical components of the SOCTIIP~~ build Alternatives emphasized minimization and avoidance of wetlands and other waters-. ~~included wetlands as a major environmental parameter to incorporate the avoidance and the minimization of impacts strategy. Specifically, t~~The TCA completed a three-step approach to avoid and/or minimize impacts to wetland areas. First, the alternatives refinement process avoided wetland areas to the maximum extent possible. The refined alignments closely follow the natural contours of the existing terrain to substantially reduce the volume of cut and fill while minimizing the area of disturbance and reducing potential impacts to WoUS and sensitive habitat. Second, known wetland areas that required a crossing of a major watercourse, such as at the crossings of San Juan Creek, San Mateo Creek and Canada Gobernadora, were identified. Impacts to wetlands at those crossings were avoided by careful alignment of the bridge structure across each watercourse. Last, other smaller wetland areas, such as the wetland adjacent to Tesoro High School and the Blind/Gabino complex, were avoided by shifting the road alignment away from these wetland features.

R. Daniel Smith of the ACOE Research and Development Center, Waterways Experiment Station conducted an assessment titled "Potential Impacts of Alternative Transportation Corridors on Waters of the U.S. and Riparian Ecosystems for the Southern Orange County Transportation Infrastructure Improvement Project" (ERDC Report, 2003 or "Smith Study"). This assessment was used as the basis for wetland impacts and for the evaluation of the alternatives for potential elimination from detailed evaluation in the EIS/SEIR. ~~It is anticipated that t~~The assessment is a conservative overestimate of the anticipated wetland impact.~~represents an overestimate of the reported wetland acreage and the wetland delineation will reflect this belief by showing a lower acreage impacted.~~ Because the Smith study is a planning level assessment, it is anticipated that some areas, during the field reconnaissance, will not be identified as wetlands during the more formal wetland delineation process which usually result in smaller areas that meet the official protocol methods. By implementing these alignment adjustments, impacts to wetlands were reduced from approximately 22 ha (53 ac) for the FEC-M Ultimate and approximately 16 ha (40 ac) for the FEC-W Ultimate. Adjustments to the original A7C-FECV alignment resulted in a reduction of wetland impacts from approximately 26 ha (65 ac) in the Ultimate to approximately 18 ha (45 ac) for the A7C-FEC-M Alternative. A delineation for the Preferred Alternative, and other alternatives have been prepared.

As an example of the reduction in impacts when comparing the Smith Study results to the more recent jurisdictional delineation, the Preferred Alternative impacts 0.82 acres of wetlands, compared to the Smith Study impact for the A7C-FEC-M of 45 acres.

ES.8.2.1 Potential Impacts of the SOCTIIP Alternatives

Potential Adverse Impacts Related to Wetlands and Waters of the United States

Direct Adverse Impacts of the SOCTIIP Alternatives on Wetlands and WoUS

Based on a baseline assessment of the ecosystem integrity (ERDC Report, 2003) along the alignment of each build Alternative and analysis of the potential impact of each Alternative on the ecosystem, ~~it was determined that~~ the I-5 and AIO Alternatives ~~would~~ resulted in the least disturbance to wetland resources because these alignments largely pass through areas of existing built environment. ~~As discussed in the ERDC report, of the corridor Alternatives, the~~ The A7C-ALPV Alternative would have the least impact on WoUS and wetlands. The FEC-M, FEC-W and A7C-FEC-M/Preferred Alternatives would have a lesser adverse impact than the CC and CC-ALPV Alternatives, ~~which would have the greatest adverse impact of all the SOCTTIIP build Alternatives on WoUS and wetlands~~.

A Jurisdictional Determination and Wetlands Delineation Technical Assessment was prepared for six of the project Alternatives in August 2004 and revised in April 2005 by Glenn Lukos Associates, Inc. (GLA). The report is Attachment 12 of the Response to Comments document. The Wetlands Delineation Technical Report describes the location and extent of aquatic features located within the disturbance limits of six of the corridor alternatives considered in the EIS/SEIR. The impacts of the six corridor alternatives are compared in Table ES.2-2.

In the planning level impact analysis conducted by the ERDC (Potential Impacts of Alternative Transportation Corridors on Waters of the U.S. and Riparian Ecosystems for the Southern Orange County Transportation Infrastructure Improvement Project, 2003), provided in the Draft EIS/SEIR, the analyses assume that all drainages within the disturbance limits are permanently filled. This initial functional assessment conducted by ERDC did not account for bridges or culverts, but assumed a complete fill; this resulted in higher than actual estimates for post-project reductions in aquatic function. More recently, at the ACOE request, an updated functional assessment has been prepared by R.D Smith of ERDC which clarifies the impact analyses addressing the avoidance of impacts by the construction of bridges and culverts.

Review of the results indicate that of the eight categories evaluated (Criteria 1, 2, 3a, 3b, 3c, 4a, 4b and 4c), the Preferred Alternative is ranked best in four categories (3a, 3b, 3c and 4a), second in two categories (2 and 4b), fourth in one category (1) and fifth in one category (4c). Being ranked at the top in four categories is the best for any of the alternatives evaluated. The normalized rank score for each of the integrity indices evaluated in the functional assessment for each the six corridor alternatives is provided in Table ES.2-3.

The Jurisdictional Determination and Wetlands Delineation Technical Assessment quantify impacts to wetlands and the Updated Functional Assessment quantifies loss of function. Together, these two technical analysis documents will provide the ACOE with the information required to ensure a complete understanding of the nature and degree of impact of the proposed discharge resulting from the SOCTIIP Alternatives. See Section 4.10 of this Final SEIR, and both Attachment 12 and Attachment 16 of the RTC document, for more information on these technical evaluations.

In addition to the three-step approach to minimizing and reducing potential impacts to WoUS and wetlands, mitigation measures were developed to avoid or substantially reduce the potential adverse short- and long-term impacts of the SOCTIIP build Alternatives. With implementation of the proposed mitigation measures, the potential for adverse impacts to WoUS and wetlands as a result of construction

of one of the SOCTIIP build Alternatives ~~would be~~are substantially reduced. No significant unavoidable adverse impacts related to WoUS and wetlands ~~would~~ remain after mitigation.

Project Design Features (PDFs) incorporate a runoff management strategy ~~primarily for on-site runoff that originates on the project site. The PDFs~~ to address the potential for direct and indirect impacts from project runoff. PDFs include extended detention basins (EDBs) and supplemental energy dissipating strategies for hydrology and erosion and sedimentation and pollutant treatment. PDFs ~~were developed to~~ provide multiple benefits; primarily increasing storage and reducing project discharges to pre-project levels to the maximum extent practicable. Providing these PDFs reduces potential adverse impacts of the SOCTIIP build Alternatives to water quality, habitat and hydrologic integrity per the SAMP and NPDES criteria. Runoff that originates outside the project (i.e. outside the pavement and immediately adjacent area) is maintained and conveyed through the project without mixing with runoff that originates on the project. This is done with bridges, culverts or pipeline conveyance facilities. As a consequence of this runoff management strategy, this water is essentially passed through the project site and the water quality and erosive qualities would remain essentially unchanged. The TCA developed a runoff management strategy to ensure the prevention of impacts to aquatic resources through appropriate Best Management Practices (BMPS) and PDFs for erosion control, water quality and water quality treatment.

A project benefit will be the treatment of a portion of existing roadway along I-5. Runoff from the part of I-5 from the Cristianitos interchange southerly to the entrance to the San Onofre State Beach day use area currently discharges untreated to San Mateo and San Onofre Creeks. This is especially significant due to the location of the roadway with respect to the habitat in the local portions of these creeks as well as the proximity to the popular surfing beaches at Trestles and southerly to "Old Man's."

SOCTIIP would construct extended detention facilities to treat the runoff from this existing portion of I-5 as well as the new connector roadways from the project. Nearly one million gallons of runoff per design water quality storm event from existing I-5 would receive treatment with the project. Over the past two years of record, approximately five design water quality events have occurred annually. Using this estimate, the project would treat five million gallons of water each year that currently flow untreated from existing I-5 into San Onofre and San Mateo Creeks.

Indirect Impacts of the SOCTIIP Alternatives Related to Wetlands and WoUS

~~As described above, t~~The ~~SOCTIIP build~~ Preferred Alternative~~s~~ includes PDFs including EDBs and velocity control measures to avoid or reduce potential indirect operational impacts related to water quality, erosion, changes in runoff volume and/or velocity and changes in area hydrology and water quality. The potential water quality impacts are minimized to the maximum extent practicable and downstream water quality impacts are anticipated to be ~~negligible~~improved when compared to existing conditions because the Preferred Alternative includes the capture and treatment of untreated runoff from the portions of I-5 adjacent to the I-5 connection.

Impacts of the No Action Alternatives Related to Wetlands and Waters of the United States

The No Action Alternatives do not propose construction or implementation of any SOCTIIP related transportation infrastructure improvements. Therefore, these Alternatives would not result in any SOCTIIP related adverse impacts to wetlands or WoUS. The No Action Alternatives would also not result in the water quality improvements provided by the Preferred Alternative because existing discharges from I-5 would remain untreated.

Cumulative Impacts Related to Wetlands and Waters of the United States

If unmitigated, the cumulative effect of the SOCTIIP Alternatives and other projects in the study area may have a substantial adverse impact on the hydrologic, water quality, erosion/sedimentation potential and groundwater resources of the watersheds in the SOCTIIP study area. At a regional and local level, these impacts may include increases in discharges, runoff volumes, and runoff velocities; erosion and sedimentation increases; water quality degradation; and impacts on groundwater levels and quality. Based on the RWQCB requirements, it is anticipated that all future projects in these watersheds will be required to comply with guidelines and regulations similar to the SOCTIIP Alternatives or appropriate to the specific land use. As emphasized below, developments that discharge surface water runoff must meet certain drainage requirements based on new regulatory requirements and controls. This includes consideration for erosion, requiring certain energy dissipation strategies to control erosive velocities draining a given project. Due to these controls, as well as the runoff management strategy for the SOCTIIP build Alternatives, substantial cumulative impacts are not anticipated to occur.

Both private and public projects are regulated under the CWA and State Fish and Game Code. The agencies responsible for implementing these regulations, the ACOE and CDFG, have written policies relevant to wetlands and WoUS. The policies include no net loss of wetland values. Projects that impact wetlands and WoUS are required to conform with these no net loss policies and any impacts to such resources require either a permit or an agreement with the ACOE and CDFG. To obtain a permit/agreement to impact these resources, the applicant must demonstrate compliance with this policy by avoiding, minimizing, repairing, replacing or compensating for the impact. The objective is to ensure the policy is adhered to and wetland values are retained and become a condition of the project. Performance standards are assigned to ensure that the implementation, monitoring and maintenance are in place to fully compensate for any values that are lost as a result of a proposed project. These regulations represent a safeguard, specifically designed to avoid cumulative losses of wetlands. For cumulative projects, as well as for the proposed development on RMV, a no net loss of wetland values would result in the maintenance of wetlands as projects are implemented.

In addition, the County of Orange and San Diego County, and the areas adjacent to and within the major watersheds in which the SOCTIIP build Alternatives are located, include other important regional conservation programs. These include the NCCP program and the SAMP ~~as~~ described earlier in Section ES.3.2. The Nature Reserve of Orange County is the designated authority that oversees the NCCP program; it includes the participation of the USFWS and CDFG; and responds to endangered species through a habitat-based approach to conservation. The SAMP is administered by the ACOE with an emphasis on wetland and WoUS conservation based on watershed function and values. Both these conservation programs include maintaining and preserving high value wetland resources within the associated watersheds in an effort to maintain a level of ecological integrity with sufficient value and function to retain and perpetuate both biological resource functions and wetland values such as groundwater recharge and habitat for dependent wildlife.

The California Coastal Act has ~~even more stringent~~ additional regulations affecting issuance of permits that would adversely affect wetlands. As such, ~~considering the existing regulatory requirements,~~ implementation of the cumulative projects would not result in cumulative losses of wetlands. Indirect impacts can affect wetlands through increases in velocity, inundation or water quality degradation. Both private and public projects are regulated for water quality and floodplain encroachment. Developments that discharge surface water runoff must meet certain drainage and water quality requirements. The RWQCB regulates ~~water quality~~activities that may impact water quality. This includes consideration for erosion, requiring certain energy dissipation strategies to control erosive velocities draining a given project. The erosive velocities are, therefore, managed on the project site or at the point of discharge and do not materially contribute to erosion potential. Due to these controls, as well as the runoff management

strategy for the SOCTIIP build Alternatives, substantial cumulative impacts are not anticipated to occur. ~~Thus, no adverse cumulative impacts would be anticipated~~. ~~According to the findings presented in the water quality section, water quality impacts are minimized based on the maximum extent practicable criteria and downstream impacts are anticipated to be negligible.~~ Therefore, ~~it can be interpolated that there would not be adverse cumulative is~~ ~~not~~ significant adverse cumulative impacts to wetlands are anticipated.

ES.8.2.2 Mitigation Measures Related to Wetlands and Waters of the United States

~~In coordination with the SOCTIIP Collaborative and in the context of the environmental permitting,~~ TCA has ~~will~~ agreed ~~on~~ to establish an appropriate mitigation site(s). ~~, if a toll road alternative is selected as the Preferred Alternative~~. ~~The important consideration in the development, implementation and long-range success of mitigation for wetland communities and upland communities is not necessarily tied just to the ratio and ultimate acreage, but the timing of mitigation implementation, quality, location and ultimate performance of the site selected. For a wetland component, t~~The goal of the mitigation program is to ensure ~~would include that there is~~ no net loss of wetland habitat values within the vicinity or region of the impact area. The ~~ultimate~~ site for creation~~, or an acknowledged mitigation bank,~~ would be selected with performance standards that replace those wetland values temporarily or permanently impacted by the SOCTIIP. Values can be improved in a given area, regardless of a specific ratio and acreage totals, if the site has connectivity, sufficient hydrology and replaces or even improves on ~~the~~ those biological values impacted (i.e. groundwater recharge improvement, benefits derived from an edge effect or ecotone, percent cover, canopy, endangered species component, etc.). In addition, there is potentially ~~a combination of strategies that might result in no net loss or even improvement in wetland habitat values with~~ the added strategy of enhancing existing degraded habitat and the removal of exotics such as giant reed or tamarisk. The merit of the mitigation is best addressed within the regional context of the site and the total mitigation strategy as the conceptual action plan is developed. It is, therefore, timely to commit to a basic ratio as a starting point, rather than an arbitrary standard without knowing the full strategy. This approach provides flexibility, knowing there will be the requisite performance standards that commit to a quality program.

Mitigation measures incorporated in the SOCTIIP build Alternatives to avoid or substantially reduce the potentially adverse short- and long-term impacts of those Alternatives to WoUS and wetlands require:

WW-1 Acquire the services of a Project Biologist to oversee biological monitoring, regulatory compliance and restoration associated with construction of the selected alternative.

WW-2 During final design, the Project Biologist shall review of the design plans and development of recommendations for further avoidance and minimization of sensitive biological resources.

WW-3 Develop and implement a Biological Resources Management Plan (BRMP) which provides specific design and implementation features of the biological resources mitigation measures in the resource agency approval documents to comply with the mitigation performance standards.

WW-4 During final design, the Project Biologist shall review and approve the contractor's map of all sensitive habitats (Environmentally Sensitive Areas, ESAs) within 152.4 meters (500 feet) of the grading limits on the grading plans.

WW-5 During grading and construction, the Project Biologist shall conduct monitoring of construction in and adjacent to sensitive habitats to document adherence to habitat and

avoidance measures in the project mitigation measures and the USFWS, CDFG and ACOE permits and agreements.

WW-6 Restore perennial river and stream channels and ephemeral drainages and washes to their original contours on completion of construction where feasible, with the exclusion of areas of permanent impact.

WW-7 During all construction, no construction equipment or vehicles will be stored in ESAs, including areas within the jurisdiction of the ACOE and/or CDFG.

WW-8 During all construction, no waste material shall be discharged to any CDFG or ACOE jurisdictional areas.

WW-9 Prior to final design, the Contractor shall prepare the final construction RMP.

WW-10 Staging areas for construction equipment will be outside areas of ACOE or CDFG jurisdiction.

WW-11 Prior to final design, the TCA or implementing agency shall prepare a jurisdictional delineation documenting the WoUS jurisdictional impacts for the selected alternative and prepare a functional assessment.

Prior to final design, the TCA or other implementing agency shall prepare a functional assessment of the wetland mitigation plan according to the tenets of the ACOE Regulatory Guidance Letter 02-2 to assure that the functions and values have been replaced and that no net loss of waters and wetlands requirements have been met. Habitat replacement guidelines shall be followed to identify and quantify habitats that will be removed along with the locations where habitats will be restored or relocated to ensure no net loss.

ES.8.2.3 Unavoidable Adverse Impacts and CEQA Level of Significance after Mitigation for Waters of the United States and Wetlands

Based on implementation of mitigation measures WW-1 to WW-11 described above, the adverse impacts of the SOCTIIP build Alternatives related to WoUS and wetlands would be substantially mitigated. No unavoidable adverse impacts related to WoUS and wetlands would remain after mitigation.

The significant adverse impacts to WoUS and wetlands would be mitigated to below a level of significance under CEQA.

ES.8.3 SUMMARY OF IMPACTS RELATED TO WILDLIFE, FISHERIES AND VEGETATION

This Section summarizes the potential impacts of the SOCTIIP Alternatives related to wildlife, fisheries and vegetation. See Section 4.11 (Existing Environment, Impacts and Mitigation Related to Wildlife, Fisheries and Vegetation) for a detailed discussion.~~in the EIS/SEIR describes the existing conditions, study area and methodology, impacts analysis and mitigation measures related to these resources in detail.~~ These potential impacts are summarized in Table ES.6-1.

ES.8.3.1 Potential Impacts of the SOCTIIP Alternatives

Potential Adverse Direct Impacts Related Wildlife, Fisheries and Vegetation

Direct Impacts to Plant Communities

The direct impacts to plant communities from the SOCTIIP build Alternatives involve the temporary or permanent loss of these communities resulting from direct removal due to clearing, grubbing and grading. The areas of disturbance by plant community and alternative are summarized in Tables ES.6-9 and ES.6-10. Plant communities adversely impacted by the build Alternatives include Venturan-Diegan coastal sage scrub and other scrub communities; several types of grasslands; vernal pools, seeps and wet meadows; march communities; riparian communities; water resources; cliff and rock communities; agriculture; and developed, disturbed and graded areas, as shown in Tables ES.6-9 and ES.6-10.

Direct Impacts to Plant Species

The SOCTIIP build Alternatives would result in direct adverse impacts to sensitive plant species, which vary depending on the Alternative, as shown in Table ES.6-11. Because there can be substantial annual variation in the numbers of individuals and in the geographic extent of rare plant populations, particularly of annual plant species, due to differences in the distribution and abundance of rainfall, the numbers of plants are expected to change on a year-to-year basis. The values in Table ES.6-11 provide an appropriate basis for comparing the impacts of the SOCTIIP build Alternatives on plant species, based on the numbers of populations and the estimated numbers of plants in those populations. As shown in Table ES.6-11, the FEC-W and A7C-FEC-M/Preferred Alternatives would impact the least number of plants. The FEC-M Alternative would impact more plants than the FEC-W and A7C-FEC-M/Preferred Alternatives. The CC, CC-ALPV and A7C-ALPV Alternatives would impact the greatest numbers of plants. The I-5 and AIO Alternatives would not result in impacts to sensitive plant species.

Direct Impacts Related to General Wildlife

Potential direct adverse impacts to general wildlife include the loss of native and nonnative habitats that provide valuable nesting, foraging and denning opportunities for a variety of wildlife species. Removing or altering habitats along the alignments of the Alternatives would result in the loss of small mammals, reptiles, amphibians and other animals of slow mobility that live in the habitats in the direct impact areas of the Alternatives. More mobile wildlife species now using the study area may be able to vacate the disturbance areas but would be forced to move into adjacent areas of open space, consequently increasing competition for available resources in those areas. This could result in losing individuals of the wildlife population that cannot successfully compete.

Because the SOCTIIP corridor Alternatives are primarily ~~long~~ linear corridors, they ~~would~~ result in habitat fragmentation. A linear transportation corridor ~~would~~ fragments both common and sensitive amphibian, reptile and small mammal species populations on either side of the alignments, reducing opportunities for connectivity ~~genetic exchange and population replenishment~~. The extent to which any alternative restricts wildlife movement depends on the location of each alternative and the extent to which habitat for the species exists on either side of the Alternative. The Preferred Alternative is located to minimize fragmentation of habitat. Birds and larger mammal species, which are more capable of crossing the road alignments, would be affected to a lesser extent. The proposed wildlife undercrossings and bridges have been located in areas known to support wildlife movement. Access across the Alternatives would be restricted to the wildlife undercrossings and bridges provided along the alignment of each Alternative. Figure 4.11-6 in Section 4.11 of the EIS/SEIR provides a graphical representation of the locations of the wildlife corridor and proposed wildlife undercossings and bridges. The long-term adverse

impacts of habitat fragmentation and reduced dispersal opportunities may cause more substantial impacts to on site wildlife populations than the actual loss of habitat.

Impacts to general wildlife under the FEC-W, FEC-M and A7C-FEC-M/Preferred Alternatives would be greater than impacts under the CC, CC-ALPV, and A7C-APLV Alternatives. The impacts of the Preferred Alternative are less than the impacts of FEC-W and FEC-M because the Preferred Alternative is located to minimize fragmentation of habitat. The Preferred Alternative reduces the impacts regarding habitat fragmentation by (1) locating the Alternative to the maximum extent feasible, in areas planned for development under the RMV Settlement Agreement, (2) locating the alignment on the west side of the Donna O'Neill Conservancy, thereby avoiding the potential isolation of the Conservancy from the open space lands to the east, (3) including 15 wildlife crossings at key locations along the Preferred Alternative recommended by the U.S. Fish and Wildlife Service and the California Department of Fish and Game, and (4) reducing the width of the project to a maximum of six lanes and thus facilitating use of the wildlife crossings. The longer the alignment of an Alternative and the greater the extent to which it traverses and fragments open space, the greater the wildlife impacts. The impacts of the I-5 and AIO Alternatives on wildlife resources would be adverse but not as great as under the ~~corridor alternatives~~above build Alternatives.

Direct Impacts Related to Wildlife Corridors

The SOCTIIP build Alternatives cross drainages, ridgelines and canyons known to support, or likely to support, local and/or regional wildlife movement. The more prominent of these are San Juan, San Onofre and San Mateo Creeks, and Cañada Chiquita, Cañada Gobernadora, Cristianitos Canyon and Blind/Gabino Canyon. It is expected that many smaller, unmapped canyons and ephemeral drainages are also likely to contribute to regional wildlife connectivity and would be impacted as they are crossed by the alignments. Direct impacts to wildlife corridors would consist of any physical blockage or constriction of an existing wildlife corridor, or removal of native vegetation in that corridor, to the extent that this activity or alteration would prevent or substantially restrict the movement of animals between habitat areas fragmented by the road alignment. As discussed above, wildlife undercrossings and bridges have been located in areas of existing wildlife corridors and are known to support wildlife movement. Table ES.6-12 identifies the proposed location(s) and number of wildlife undercrossings and bridges for each of the SOCTIIP build alternatives.

All the corridor Alternatives would have ~~similar magnitude of~~ impacts to wildlife corridors. I-5 has, as an existing condition, impacted wildlife corridors. It is not anticipated that the SOCTIIP improvements to I-5 would substantially exacerbate those existing impacts. The impacts of the AIO Alternative would be slightly greater than the existing conditions; however, not to the magnitude of the impacts under the ~~corridor~~ other build Alternatives.

Direct Impacts to Sensitive Wildlife

The potential adverse impacts of the SOCTIIP build Alternatives on sensitive wildlife species are shown in Table ES.6-13. Table ES.6-13 shows the number of sightings/detections of each species made within the limits of disturbance for each build alternative. However, because wildlife are mobile, these impact numbers represent a snapshot in time and should, therefore, be considered an approximate and relative estimate of the abundance of a particular species within the disturbance footprints of the alternatives. Those species mapped and anticipated to occur, but not feasible to quantify (fish, bats and several reptile species), are also noted in Table ES.6-13. For species that are less mobile and/or occupy relatively small home ranges (many reptiles, fairy shrimp, amphibians, small mammals), the estimates provide a reasonable predictor of the mortality numbers during construction. Fairy shrimp are not identified on Table ES.6-13 because no individual populations were found within the disturbance limits of the

SOCTIIP build Alternatives. ~~However, for most birds, most of these direct impacts would be limited to the individual's home range (part of that range), as these species are likely to flee the area at the initiation of construction.~~

Potential Adverse Indirect Impacts

Indirect Impacts on Plant Communities

Indirect adverse impacts on plant communities are anticipated to include increased susceptibility of adjacent native habitats to invasion by non-native species; and increased dust accumulation on plant leaves. Invasive plant species are of particular concern because they usually germinate before native plants in the fall and, with rapid growth rates, can quickly out compete native species. If not controlled, invasive species may encroach into adjacent, open space areas and diminish the quality of native plant communities. Although all native plant communities along the alignments of the build Alternatives would be affected by the introduction and spread of non-native plant species, these impacts would be of particular concern in native habitats designated as open space such as in General Thomas F. Riley Wilderness Park, Cañada Gobernadora, San Juan Creek, Donna O'Neill Land Conservancy, Gabino Canyon, Cristianitos Creek, San Onofre State Beach, San Mateo Creek, Ladera Land Conservancy and Trestles Natural Wetland Preserve. Grading would disturb soils and result in the accumulation of dust on the surface of the leaves of trees, shrubs and herbs. It is expected that the dust impacts would be most severe during flowering.

The implementation of the Storm Water Management Plan (SWMP), the Storm Water Pollution Prevention Plan (SWPPP), the PDFs and overall pollution prevention strategies discussed in detail Sections 4.8 and 4.9 in the EIS/SEIR ~~that address water resources~~ have been designed to manage onsite and offsite runoff to substantively avoid or minimize indirect impacts to downstream resources. Pollutant loading, erosive discharges and sediment transport are all minimized with the runoff management strategies and effectively avoid the potential for adverse indirect impacts to plant communities. These runoff strategies are incorporated directly into the project design.

Indirect Impacts on Wildlife Corridors

Indirect adverse impacts to wildlife corridors occurring as a result of the build Alternatives would result from construction and operations noise, street lighting, increased mortality associated with vehicular interactions, urban pests and invasive plant material. Any indirect disturbance of the habitats associated with a wildlife corridor may ultimately preclude the use of that wildlife corridor by a variety of wildlife species. The SOCTIIP build Alternatives would result in indirect wildlife impacts, with the corridor Alternatives having greater magnitude impacts than the I-5 or AIO Alternatives.

Indirect Impacts Related to Road Mortality

Mitigation was developed to address the potential for indirect impacts related to road mortality. As stated in mitigation measure WV-17, fencing at least 2.1 m (seven ft) high would be erected on both sides of the alignment constructed from the underpass entrance to a distance of at least 1.0 km (0.62 mi) along the corridor to "funnel" wildlife to the underpass area and to minimize wildlife attempts to cross the road surface. Even with implementation of mitigation to reduce road mortality, the SOCTIIP build Alternatives would have an adverse impact as a result of road mortality. The impacts under the corridor Alternatives are greater than under the I-5 and AIO Alternatives because the alignments of those two Alternatives are partially located in developed areas. The Preferred Alternative is designed to be located as much as feasible within the areas shown for development in the Rancho Mission Viejo Ranch Plan and as contemplated in the Settlement Agreement with the environmental organizations and includes 15

wildlife crossings at key locations. The Preferred Alternative thus minimizes the impacts due to road mortality to the extent feasible.

Indirect Impacts Related to Noise

Wildlife in areas of habitat in proximity to the SOCTIIP build Alternatives would be subjected to increased noise levels. However, based on discussion with FHWA and Caltrans biologists (2003), there are no published regulations regarding noise-level effects on wildlife. Noise levels greater than 60dB have been used as a criterion to determine potential impacts on avian species. It should be noted that it has not been proven that noise above 60dB would negatively impact avian species. Species vary in their auditory perceptions and vocal abilities, so one documented criterion is difficult to apply as general criteria to all species. Existing studies trying to establish that there is a relationship between impact to nesting birds and a maximum noise level of 60 dB have produced conflicting results. None of the studies conducted have concluded that there is an adverse impact to breeding habitat resulting in population declines as a result of noise exposure exceeding 60 dB. In summary, substantive adverse impacts to local avifauna as a result of noise exposure is not anticipated as a result of the SOCTIIP build Alternatives.

Indirect Impacts Related to Plant Species

Construction of the SOCTIIP build Alternatives may result in the introduction and/or spread of invasive plant species. Concerns regarding these potential impacts include the potential for the introduction of invasive species into native habitats adjacent to the construction areas and the transport of seed from weedy habitats adjacent to the alignments to adjacent native habitats. This may diminish the quality of native habitats adjacent to the alignments, including San Mateo and Cristianitos Creeks, the Donna O'Neill Land Conservancy, San Onofre State Beach and marsh habitat in Cañada Gobernadora, which are currently relatively free of non-native, invasive species. Of particular concern would be the potential to encourage the introduction and spread of artichoke thistle, giant reed (from San Juan Creek), pampas grass, wild fennel, fountain grass, German ivy (from Trestles Natural Wetland Preserve), tamarisk, red brome and Brazilian pepper into native habitats.

Impacts of the No Action Alternative Related to Wildlife, Fisheries and Vegetation

The No Action Alternatives do not propose construction or implementation of any SOCTIIP related transportation infrastructure improvements. Therefore, these Alternatives would not result in any SOCTIIP related adverse impacts to wildlife, fisheries and vegetation.

Cumulative Impacts Related to Wildlife, Fisheries and Vegetation

Cumulatively substantial adverse impacts would occur to sensitive plant communities, sensitive plant and wildlife species, and wildlife corridors/fragmentation as a result of past project approvals, planned and future land use changes, and construction of any of the SOCTIIP build Alternatives.

ES.8.3.2 Mitigation Measures Related to Wildlife, Fisheries and Vegetation

Mitigation performance standards for biological resources include mitigating impacts by (1) replacing, creating, restoring or preserving one acre of the identified resource for every acre of the applicable resource impacted by the project or (2) such other mitigation requirement that is necessary to meet the regulatory standards of an applicable state or federal regulatory program.

The SOCTIIP Collaborative and the TCA will continue to discuss and refine the biological resources mitigation measures for the toll road alternatives, in the context of the project impacts and other major

governmental actions anticipated in the study area, i.e., the SAMP, NCCP and the proposed RMV development plan. An important consideration in the development, implementation and long-range success of mitigation is the timing of implementation, quality, location and ultimate performance of a selected mitigation site. In coordination with the SOCTIIP Collaborative, the TCA will agree on an appropriate mitigation site(s), if a toll road alternative is selected as the Preferred Alternative, recognizing that the habitat values can be improved in a given area regardless of specific mitigation ratios if the potential site replaces or improves on those biological values impacted. The merit of the mitigation is best addressed within the regional context of the site and the total mitigation strategy as the conceptual action plan is developed. It is, therefore, timely to commit to a basic ratio as a starting point, rather than an arbitrary standard without knowing the full strategy. This approach provides flexibility, knowing there will be the requisite performance standards that commit to a quality program. There is a combination of strategies that would result in no net loss or even improvement in value including but not limited to a mitigation site(s) that provides or enhances wildlife connectivity and sustainability of the regional eco-system, potentially incorporating areas not contiguous to the SOCTIIP study area.

The avoidance, protective and compensatory mitigation measures to avoid or mitigate potential adverse impacts of the SOCTIIP build Alternatives on wildlife, fisheries and vegetation require:

WV-1 Prior to construction, acquire the services of a Project Biologist responsible for overseeing biological monitoring, regulatory compliance and restoration activities associated with construction of the selected Alternative.

WV-2 During final design, the Project Biologist shall review the design plans and make further recommendations for avoidance and minimization of sensitive biological resources.

WV-3 Develop and implement a BRMP providing specific design and implementation features of the biological resources mitigation measures outlined in the resource agency approval documents to comply with the mitigation performance standards.

WV-4 During grading and/or construction, the Project Biologist shall conduct monitoring within and adjacent to sensitive habitats.

WV-5 During grading and construction, the Project Biologist shall prepare a monthly biological monitoring letter report summarizing site visits, documenting adherence or violations of required habitat avoidance measures, and listing necessary remedial measures.

WV-6 Prior to grading or vegetation/habitat removal, the Project Biologist shall attend preconstruction meetings to confirm that all environmental conditions are discussed.

WV-7 During final design, the Project Biologist shall work closely with project ~~landscape~~ contractor ~~architects~~ to develop native plant palettes for revegetation areas adjacent to the road that abut natural open space.

WV-8 In conjunction with final plans or other activities involving vegetation/habitat removal, the Project Biologist shall review and approve the contractor's map of all sensitive habitats (ESAs) within 152.4 meters (500 feet) of the grading limits.

WV-9 Follow Caltrans' procedures for the protection of ESAs.

WV-10 Prior to grading or vegetation/habitat removal, the Project Biologist shall field verify that protective fencing has been installed along the disturbance limits.

WV-11 Mitigate impacts to scrub communities (and all sub-types thereof except floodplain sage scrub) through the use of scrub mitigation credits in the Upper Chiquita Canyon Conservation Easement area and additional preservation or restoration (if necessary).

WV-12 Mitigate impacts to native grasslands at a 1:1 ratio through preservation or restoration in designated open space (e.g., Upper Chiquita Canyon Conservation Easement).

WV-13 Mitigate impacts to coast live oak and elderberry woodland communities by preservation and/or restoration of such communities at a ratio of 1:1.

WV-14 Control dust accumulation on natural vegetation during construction, at the source of disturbance by standard dust control measures (Refer also to mitigation measures for air quality during construction in Section ES.7.7).

WV-15 Prior to final design, the Project Biologist shall ensure that the location of the proposed wildlife bridges and culverts will provide adequate travel capabilities, contain adequate vegetation cover, have adequate daylight and have appropriate fencing to encourage animals to use these underpasses.

WV-16 Prior to or in conjunction with the permit of application and/or process, Caltrans and resource agencies are to be given an opportunity for review and approval of the design of wildlife movement bridges, undercrossings and culverts.

WV-17 Fencing at least 2.1 m (seven ft) high will be erected on both sides of the alignment from the underpass entrance to a distance of at least 1.0 km (0.62 mi) along the corridor to "funnel" wildlife to the underpass area and to minimize wildlife attempts to cross the road surface.

WV-18 Prior to operation, road signs indicating the potential for wildlife movement shall be installed where indicated by the Project Biologist.

WV-19 All bridges and culverts serving as wildlife crossings will be monitored for three years to document the effectiveness of use ~~by target wildlife species~~.

WV-20 Incorporate low-light design features, where feasible, adjacent to the bridges or culverts within wildlife corridors, and scrub, riparian and woodland communities.

WV-21 During final design, in coordination with the RMP, design, construct and/or maintain any structure/culvert placed in a stream where sensitive fish species do/may occur such that it does not constitute a barrier to upstream or downstream movement of aquatic life, or cause an avoidance reaction by fish that impedes their upstream or downstream movement.

WV-22 Prior to construction, conduct focused sensitive plant species surveys to determine the distribution of sensitive plants in the impact area so appropriate avoidance (for all sensitive plant species), seed collection and salvage measures (for Coulter's saltbush, intermediate mariposa lily, southern tarplant, and many-stemmed dudleya) can be conducted.

WV-23 During the spring prior to grubbing or grading, flag the limits of individual populations of Coulter's saltbush to be impacted and mark individual plants to facilitate locating individual plants after flowering. Prior to construction, collect seeds from Coulter's saltbush plants, for later propagation.

WV-24 Collect intermediate mariposa lily seed and re-establish intermediate mariposa lily into appropriate habitat in open space dedication areas~~from impacted populations~~.

WV-25 Reseed areas determined to have appropriate hydrology and soil chemistry with southern tarplant seed.

WV-26 Collect many-stemmed dudleya caudexes and seed from impacted populations.

WV-27 Before entering or leaving the construction site, inspect all construction equipment for evidence of invasive species and/or their seeds and wash, if necessary.

WV-28 Prior to construction, map substantial populations of invasive plant species adjacent to the grading limits.

WV-29 The Project Biologist shall prepare an invasive species management program to be incorporated into the BRMP.

WV-30 The Project Biologist shall conduct focused surveys in suitable habitat between February and May (a minimum of one week prior to the onset of construction) to determine the presence or absence of the western spadefoot toad in the impact area.

WV-31 The Project Biologist shall conduct focused surveys in suitable habitat between February and May to determine the presence or absence of the southwestern pond turtle in the impact area.

WV-32 During grading, relocate two-striped garter snakes observed in and adjacent to the impact area outside the construction area.

WV-33 Grub suitable habitat in the disturbance limits for the San Diego cactus wren from September to February if feasible.

WV-34 If grubbing between February and August is unavoidable, surveys by the Project Biologist will be conducted after the initiation of the nesting season to determine the presence of San Diego cactus wrens, nest building activities, egg incubation activities or brood rearing activities.

WV-35 Prior to construction, the Project Biologist shall survey the construction limits for the presence of occupied raptor nests and burrowing owl nest burrows.

WV-36 Prior to construction, the Project Biologist shall survey the construction limits for the presence of occupied breeding coyote, bobcat or mountain lion dens.

WV-37 During the spring and summer prior to the habitat removal, a qualified bat biologist shall survey all potential roosting habitat proposed for removal.

WV-38 Mitigate impacts to floodplain sage scrub, riparian herb and other sub-types within the Vernal Pools, Seeps and Wet Meadows and Marsh plant communities at a 1:1 ratio or other ratio that compensates for functions and values.

WV-39 Mitigate impacts to riparian scrub, woodland and forest communities by at a 1:1 ratio or other ration that compensates for functions and values.

WV-40 Mitigate impacts to open water by the creation of wetlands and~~/or~~ impounded features to be incorporated into the herbaceous riparian habitat~~ restoration to compensate for functions and values~~.

ES.8.3.3 Unavoidable Adverse Impacts and CEQA Level of Significance Related to Wildlife, Fisheries and Vegetation

Under NEPA, the unavoidable adverse impacts of the SOCTIIP build Alternatives related to wildlife and vegetation would be substantial and adverse even after mitigation, as summarized in Tables ES.6-1, ES.6-9, ES.6-10, ES.6-11, ES.6-13 and ES.6-14. For the FEC-M, FEC-W, A7C-FEC-M/Preferred, CC, CC-ALPV and A7C-ALPV Alternatives, the effects of general habitat loss, wildlife loss (including sensitive species) and habitat fragmentation are anticipated to result in substantial adverse impacts even after mitigation.

Under CEQA, except for impacts to sensitive plant communities, the impacts of the SOCTIIP Alternatives to plant communities are not significant. These adverse impacts are not significant because they would be limited in extent and the plant community is sufficiently widespread in southern California; the impacts would not substantially diminish the resource on a regionwide basis; the plant community is dominated by non-native species, indicators of significant previous site disturbance; or the areas have low biological value, such as nurseries, disturbed and developed areas.

Direct impacts to sensitive plant communities would be considered significant under CEQA. These adverse impacts are significant because the plant community or association is rare in California and is considered threatened or very threatened by the California Natural Diversity Database (CNDDB) or is otherwise considered sensitive by local or regional agencies or by the CDFG or USFWS; the plant community is a unique association comprised of elements of one or more sensitive plant communities; the plant community/association is not widespread; or the plant community/association provides habitat for sensitive plants or wildlife. These sensitive plant communities would include upland communities such as Venturan-Diegan transitional coastal sage scrub, sage scrub-grassland ecotones, sage scrub-chaparral ecotones and native grassland. Impacts to these communities would be partially mitigated primarily through the acquisition and preservation of such communities.

To partially mitigate these impacts, the TCA has identified additional habitat preservation and restoration activities in the Upper Chiquita Canyon Conservation Area. The Upper Chiquita Canyon Conservation Area consists of approximately 478.7 hectares (1,182 acres) created by the TCA to mitigate biological impacts resulting from construction of the FTC-N. Of these 478.7 hectares (1,182 acres), 327 credits have been set-aside as a mitigation bank for future project impacts. The Conservation Area was originally under substantial threat for development and the resources within the Area have been conserved, but otherwise would have been lost or substantially degraded. In addition, the Upper Chiquita Canyon Conservation Area provides opportunities for preservation activities consisting of additional habitat for oak woodland and sensitive plant species. There are also opportunities for restoration activities on site that would include additional acres of oak woodland, non-wetland drainages, coastal sage scrub, coastal sage scrub/native perennial grassland ecotone and native perennial grassland habitats. A resource agency-approved Conservation Bank Agreement for Upper Chiquita identified the potential for revegetation or restoration of various native habitat types, including coastal sage scrub, oak woodland, wetlands, and native grasslands. To date, biologists and restoration specialists have identified approximately 31 acres of oak woodland preservation, 13 acres of riparian oak creation, 33 acres of native grassland creation, and 3 acres of riparian scrub creation. TCA has 5 acres of riparian scrub creation credits and 7 acres of oak woodland preservation credit on the Live Oak property owned by the TCA.

These opportunities for preservation and restoration activities would also serve to partially mitigate impacts on sensitive plants for the SOCTIIP build Alternatives.

The TCA also has the rights to a total of 250 acre credits within lands owned by Rancho Mission Viejo (RMV) for compensation for FTC-South impacts. The exact location of the 250 acres will be identified by the TCA and RMV in coordination with the resource agencies, as appropriate per regulatory requirements.

A net loss of these rare communities that provide habitats for a unique assemblage of plants and wildlife would occur as a result of implementation of all the SOCTIIP build Alternatives. Based on the biological diversity, scarcity, location and importance of the sensitive plant communities and the amount of community impacted, these impacts are substantial even after mitigation because the impacts for the SOCTIIP build Alternatives would result in a net loss. Therefore, impacts to these upland communities under these Alternatives would be considered significant and adverse after mitigation under CEQA.

Because it would not be possible to create rock outcrop and xeric cliff face habitat, impacts to this community resulting from the SOCTIIP build Alternatives would be significant, ~~adverse and unmitigable~~after mitigation under CEQA.

The loss of wildlife species including sensitive species and their habitats, in conjunction with the local fragmentation of opens space lands resulting from implementation of the FEC-M, FEC-W or A7C-FEC-M Alternatives, would have an effect on the ecology and sustainability of wildlife populations. Although most of the wildlife affected would be non-sensitive members of the overall wildlife population, the long-term effects of fragmentation and habitat displacement may alter predatory-prey interactions and the food base for wildlife in the vicinity. The effects of general habitat loss, wildlife loss (including sensitive species) and habitat fragmentation are anticipated to result in significant impacts even after mitigation under CEQA.

With implementation of the mitigation measures described above, impacts from the FEC-M, FEC-W, A7C-FEC-M/Preferred, CC, CC-ALPV and A7C-ALPV Alternatives would be mitigated to below a level of significance under CEQA due to the relatively lower amount of fragmentation that would occur, and the comparative lower quality of the habitats these Alternatives would traverse. The Preferred Alternative minimizes habitat fragmentation by moving the alignment to the west, adjacent to existing development (e.g., the Talega development) and by locating the alignment within the areas approved for development in the RMV Ranch Plan and in the Settlement Agreement between RMV, the County and the environmental organizations. The impacts of the AIO and I-5 Alternatives would not be significant after mitigation under CEQA.

With implementation of the mitigation measures described above, the potential and severity of indirect impacts on sensitive plant communities and sensitive plant species during project construction and operations would be mitigated. As a result, these indirect impacts of the SOCTIIP build Alternatives are expected to be mitigated to below a level of significance under CEQA.

Based on implementation of the mitigation measures described above and coordination with the appropriate agencies during project design, construction and operation, indirect impacts to wildlife communities and sensitive wildlife species under the build Alternatives would be mitigated to below a level of significance under CEQA.

ES.8.4 SUMMARY OF IMPACTS RELATED TO THREATENED AND ENDANGERED SPECIES

This Section summarizes the potential impacts of the SOCTIIP build Alternatives related to threatened and endangered (T&E) species. Section 4.12 (Existing Environment, Impacts and Mitigation Related to Threatened and Endangered Species) in the EIS/SEIR describes the existing conditions, study area and methodology, impacts analysis and mitigation measures related to these resources in detail. These potential impacts are summarized in Tables ES.6-1 and ES.6-14.

ES.8.4.1 Potential Adverse Impacts of the SOCTIIP Alternatives to Threatened and Endangered Species

The affected environment related to threatened and endangered (T&E) species includes all federally and state listed threatened and endangered species that were observed or have the potential to occur in the SOCTIIP study area. The Federal Endangered Species Act of 1973 (16 USC 1531 et seq.) regulates and protects federally endangered species. The California Endangered Species Act (Fish and Game Code 2050 et seq.) regulates and protects state listed species. A federally threatened species is defined as a species that is likely to become endangered in the foreseeable future throughout all or a significant part of its range. A federally endangered species is defined as a species that faces extinction throughout all or a significant part of its geographic range.

T&E species wildlife surveys were conducted in 2001 and 2003. The following sensitive species were surveyed: thread-leaved brodiaea, fairy shrimp, arroyo toad, California red-legged frog, southwestern willow flycatcher, coastal California gnatcatcher, least bell's vireo, Pacific pocket mouse and southern steelhead trout. Other potential threatened and endangered species in the SOCTIIP study area include peregrine falcon and tidewater goby.

Potential direct long-term adverse impacts from operation of SOCTIIP build Alternatives would occur as a result of removal of individuals or populations of T&E species; the removal of plant communities and habitat used by T&E species; and removal of individuals or populations of T&E species. This includes both permanent and temporary impacts. Indirect impacts include but are not limited to dust accumulation, increased mortality, physical and visual barriers to suitable habitat or connected habitat from sound walls, noise, lighting, road mortality, habitat fragmentation and invasive species.

The following nine T&E species are located in the SOCTIIP study area: thread-leaved brodiaea, southern steelhead trout, tidewater goby, San Diego and Riverside fairy shrimp, arroyo toad, peregrine falcon, California gnatcatcher, least Bell's vireo and Pacific pocket mouse. Table ES.6-14 identifies the T&E species that would be directly impacted due to the construction and operation of the SOCTIIP build Alternatives.

The FEC-M, FEC-W and A7C-FEC-M/Preferred Alternatives would result in adverse direct impacts to thread-leaved brodiaea, arroyo toad and California gnatcatcher. There is also a potential (but not quantified) impact to tidewater goby and the southern steelhead trout under these Alternatives.

The modifications associated with the Preferred Alternative result in a decrease in direct impacts to some of the Threatened and Endangered Species affected by the project. Direct impacts to the Thread-leaved brodiaea are reduced from 23 individuals to 16 individuals. Direct impacts to the Coastal California gnatcatcher are reduced from 15 use areas to 9 use areas. Direct impacts to Arroyo toad have increased from one to two individuals. Tidewater goby and Southern steelhead trout impacts remain the same, likely but not quantified. Direct impacts to Perigrine falcon, Least Bell's vireo, Pacific pocket mouse, San Diego and Riverside fairy shrimp remain at zero.

The CC and CC-ALPV Alternatives would result in direct adverse impacts to peregrine falcon, California gnatcatcher and least Bell's vireo.

The A7C-ALPV Alternative would result in direct adverse impacts to thread-leaved brodiaea, California gnatcatcher and least Bell's vireo.

The AIO Alternative would result in direct adverse impacts to California gnatcatcher and least Bell's vireo.

The I-5 Alternative would result in direct adverse impacts to arroyo toad and California gnatcatcher.

The Pacific pocket mouse and the San Diego and Riverside shrimps are not directly impacted by any of the SOCTIIP build Alternatives.

In summary, long-term adverse impacts as a result of the SOCTIIP build Alternatives could occur to thread-leaved brodiaea, San Diego fairy shrimp, Riverside fairy shrimp, least Bell's vireo, California gnatcatcher, arroyo toad, southern steelhead trout, tidewater goby and/or Pacific pocket mouse, depending on the individual Alternative. Potential indirect impacts may occur to Riverside fairy shrimp populations and Pacific pocket mouse for the FEC-M, FEC-W and A7C-FEC-M/Preferred Alternatives.

Current and previously designated critical habitat for federally T&E species that would be impacted by the SOCTIIP build Alternatives are San Diego fairy shrimp, Riverside fairy shrimp, tidewater goby, arroyo toad and California gnatcatcher.

Impacts of the No Action Alternatives Related to Threatened and Endangered Species

The No Action Alternatives do not propose construction or implementation of any SOCTIIP related transportation infrastructure improvements. Therefore, these Alternatives would not result in any SOCTIIP related adverse impacts to T&E species.

Cumulative Impacts Related to Threatened and Endangered Species

Cumulatively substantial adverse impacts would occur to the sensitive plant communities, sensitive plant and wildlife species, and wildlife corridors/fragmentation that support T&E species as a result of past project approvals, planned and future land use changes, and construction of any of the SOCTIIP build Alternatives.

ES.8.4.2 Mitigation Measures Related to Threatened and Endangered Species

Mitigation performance standards for biological resources include mitigating impacts by (1) replacing, creating, restoring or preserving one acre of the identified resource for every acre of the applicable resource impacted by the project ~~or~~ and (2) such other mitigation requirement that is necessary to meet the regulatory standards of an applicable state or federal regulatory program.

~~The SOCTIIP Collaborative and the TCA will continue to discuss and refine the biological resources mitigation measures for the toll road alternatives, in the context of the project impacts and other major governmental actions anticipated in the study area, i.e., the SAMP, NCCP and the proposed RMV development plan. An important consideration in the development, implementation and long range success of mitigation is the timing of implementation, quality, location and ultimate performance of a selected mitigation site. In coordination with the SOCTIIP Collaborative, the TCA will agree on an~~

~~appropriate mitigation site(s), if a toll road alternative is selected as the Preferred Alternative, recognizing that the habitat values can be improved in a given area regardless of specific mitigation ratios if the potential site replaces or improves on those biological values impacted. The merit of the mitigation is best addressed within the regional context of the site and the total mitigation strategy as the conceptual action plan is developed. It is, therefore, timely to commit to a basic ratio as a starting point, rather than an arbitrary standard without knowing the full strategy. This approach provides flexibility, knowing there will be the requisite performance standards that commit to a quality program. There is a combination of strategies that would result in no net loss or even improvement in value including but not limited to a mitigation site(s) that provides or enhances wildlife connectivity and sustainability of the regional eco-system, potentially incorporating areas not contiguous to the SOCTIIP study area.~~

The avoidance, protective and compensatory mitigation measures to offset potential adverse impacts on T&E species by SOCTIIP build Alternatives require:

TE-1 Prior to construction, acquire the services of a Project Biologist responsible for overseeing biological monitoring, regulatory compliance and restoration activities.

TE-2 During final design, the Project Biologist shall review the design plans and make recommendations for avoidance and minimization of sensitive biological resources.

TE-3 Prepare a BRMP prior to construction which provides specific design and implementation features of the biological resources mitigation measures outlined in the resource agency approval documents. The BRMP shall contain construction monitoring programs for thread-leaved brodiaea, arroyo toad, coastal California gnatcatcher, least Bell's vireo and Pacific pocket mouse.

TE-4 During grading and construction, the Project Biologist shall prepare a monthly biological monitoring letter report summarizing site visits, documenting adherence or violations of required habitat avoidance measures and listing any necessary remedial measures.

TE-5 Fencing at least 2.1 m (seven ft) high will be erected on both sides of the selected Alternative from the underpass entrance to a distance of at least 1.0 km (0.62 mi) along the corridor to "funnel" wildlife to the underpass area and to minimize wildlife attempts to cross the roadway surface.

TE-6 Prior to construction, conduct focused sensitive plant species surveys to determine the distribution of sensitive plants in the impact area so appropriate avoidance, and seed collection and salvage measures for thread-leaved brodiaea can be implemented.

TE-7 Prior to construction, conduct focused surveys for thread-leaved brodiaea during the flowering period for this species.

TE-8 Flag and map vernal marsh FEVM-16 to avoid impacts to Riverside fairy shrimp. Flag the watershed which supplies this marsh for avoidance and enclose with silt fencing per the direction of the Project Biologist.

TE-9 During final design and ~~in coordination with~~ as described in the RMP, design, construct and/or maintain any structure/culvert placed in a stream where endangered or threatened fish do/may occur such that it does not constitute a barrier to upstream or downstream movement of aquatic life, or cause an avoidance reaction by fish that impedes their upstream or downstream movement.

TE-10 An Arroyo Toad Resource Management Plan (ATRMP) to implement applicable mitigation measures will be prepared, incorporated into the BRMP and action items identified in the plan will be implemented by TCA and monitored by the Project Biologist.

TE-11 Prior to any ground-disturbance in occupied/suitable habitats or habitats proximal to suitable or occupied arroyo toad habitat. install exclusionary fencing around the perimeter of the construction area.

TE-12 Conduct three focused arroyo toad surveys in the fenced construction site for arroyo toads prior to initiating construction; remove any arroyo toads and relocate outside the construction impact area per the ATRMP.

TE-13 Locate staging areas for construction equipment outside areas within the jurisdiction of the ACOE or CDFG known to support the arroyo toad.

TE-14 When conducting construction and/or other ground-disturbing activities in arroyo toad-occupied habitats or in adjacent upland areas proximal to known arroyo toad habitats, cover all grubbing spoils or other grading debris with plastic sheeting to prevent arroyo toads from opportunistically burrowing in these exposed and friable soil piles.

TE-15 No driving on construction roads or other roads/surfaces adjacent to arroyo toad occupied habitat after sunset. If the site must be accessed, a biologist permitted to handle the arroyo toad must be present in the vehicle and the vehicle shall not exceed a speed of 16 km per hour (10 mi per hour) in these areas.

TE-16 At the conclusion of construction, construct artificial pools and gravel bars in the temporary disturbance areas of creeks known to be occupied by the arroyo toad.

TE-17 Prior to the arroyo toads' re-establishment to their original locations, implement specific activities to enhance their habitat and improve their potential for re-occupation including the removal, to the extent practicable, of predatory species.

TE-18 Grub suitable habitat for the coastal California gnatcatcher suitable habitat in the disturbance limits from September to February if feasible.

TE-19 If grubbing is unavoidable during the coastal California gnatcatcher breeding season, implement contingency measures.

TE-20 Grub suitable habitat for least Bell's vireo in the disturbance limits September 16 to March 14 (generally outside the breeding season for this species).

TE-21 If grubbing activities between March 15 and September 15 (generally within the breeding season for the least Bell's vireo) are unavoidable, contingency measures will be implemented.

TE-22 To minimize indirect disturbance of nesting least Bell's vireos, the Contractor will not engage in any construction activities within 61 m (200 ft) of and adjacent to occupied least Bell's vireo habitat during the peak nesting period of 1 April to 15 July if said construction activities result in noise readings greater than 60 dBA measured at the edge of the territory of the vireo in the area.

TE-23 During final design, provide an undercrossing in the vicinity of the San Mateo North population of the Pacific pocket mouse if the Alternative occurs in this area.

TE-24 Prior to construction in areas in or proximal to known sites occupied by the Pacific pocket mouse, prepare a Pacific Pocket Mouse Resource Management Plan to implement applicable conservation measures, submit to the USFWS for review ~~and approval~~, and incorporate into the BRMP.

TE-25 Mitigate impacts to scrub communities (and all sub-types except floodplain sage scrub) through the use of scrub mitigation credits in the Upper Chiquita Canyon Conservation Easement Area and additional preservation (if necessary). Mitigate impacted scrub areas at a credit to hectare ratio of 1:0.40 (one Upper Chiquita Canyon Conservation Easement mitigation credit for every 0.40 ha impact or one Upper Chiquita Canyon Conservation Easement mitigation credit for every 1.0 ac lost).

TE-26 Mitigate impacts to native grasslands at a 1:1 ratio through either preservation or restoration in designated open space (e.g., Upper Chiquita Canyon Conservation Easement).

TE-27 Mitigate impacts to floodplain sage scrub at a 1:1 ratio.

TE-28 Mitigate impacts to riparian scrub, woodland and forest communities at a 1:1 ratio or other ratio that compensates for functions and values.

TE-29 Mitigate impacts to open water by the creation of wetlands and/or impounded feature to be incorporated into the herbaceous riparian habitat restoration to compensate for functions and values.

ES.8.4.3 Unavoidable Adverse Impacts and CEQA Level of Significance Related to Threatened and Endangered Species

Under NEPA, the FEC-M, FEC-W, A7C-ALPV, A7C-FEC-M/Preferred, CC and CC-ALPV Alternatives would result in substantial unavoidable adverse impacts on thread-leaved brodiaea, arroyo toad, California gnatcatcher and least Bell's vireo. These impacts cannot be mitigated to below a level of significance under CEQA.

The AIO Alternative would not result in substantial unavoidable adverse impacts on T&E species. No significant, unmitigable adverse impacts under CEQA to T&E species occur under the AIO Alternative.

The I-5 Alternative would adversely affect the coastal California gnatcatcher. This would be a significant unmitigable impact of the I-5 Alternative to the coastal California gnatcatcher under CEQA.

ES.8.5 SUMMARY OF IMPACTS RELATED TO WATER QUALITY

This Section summarizes the potential impacts of the SOCTIIP alternatives related to water quality. Section 4.9 (Affected Environment, Impacts and Mitigation Measures Related to Water Quality) in the EIS/SEIR describes the existing conditions, study area and methodology, impacts analysis and mitigation measures related to water quality in detail. These potential impacts are summarized in Table ES.6-1.

PDFs incorporate a runoff management strategy primarily for runoff that originates on the project site. These PDFs address the potential for indirect impacts from project runoff. PDFs include EDBs and supplemental energy dissipating strategies for hydrology and erosion and sedimentation and pollutant

treatment. PDFs were developed to provide multiple benefits; primarily increasing storage and reducing project discharges to pre-project levels to the maximum extent practicable (MEP) and compliance with Caltrans standards. The SOCTIIP build Alternatives incorporate PDFs with respect to stormwater and water quality management to MEP standards, as required by the Caltrans NPDES Statewide Stormwater Permit. Providing these PDFs reduces potential adverse impacts of the SOCTIIP build Alternatives to water quality, habitat and hydrologic integrity per the SAMP and NPDES criteria.

ES.8.5.1 Adverse Impacts Related to Water Quality

All the SOCTIIP build Alternatives incorporate best management practices (BMPs), as appropriate, during construction to conform with requirements set forth under the California State Water Resources Control Board (SWRCB) NPDES, which governs storm water and non-storm water discharges during construction activities, as well as with those requirements set forth in the Caltrans NPDES Statewide Storm Water Permit. These BMPs include, but are not limited to measures such as temporary sediment control, temporary soil stabilization, scheduling, preservation of existing vegetation, conveyance controls, wind control, temporary stream crossings and waste management.

To address potential construction impacts, prior to start of construction of any SOCTIIP build Alternative, a Storm Water Pollution Prevention Plan (SWPPP) will be required. The SWPPP would meet the applicable requirements by applying controls of pollutant discharges that use best available technology economically achievable (BAT) and best conventional pollutant control technology (BCT) to reduce pollutants. The SWPPP would be prepared and implemented to address storm water management, spill prevention and response, and non-storm water discharges. All of the construction related BMPs would be deployed to the MEP. Use of the described BMPs during construction is expected to minimize any construction impacts to water quality.

Operational impacts related to water quality are addressed through PDFs incorporated into the build Alternatives. EDBs incorporated as PDFs contain and settle out contaminants so that quantities of potential contaminants in runoff are less than or the same as pre-project conditions.

For the FEC-W, FEC-M, A7C-FEC-M/Preferred, AIO and I-5 Alternatives, there are no adverse impacts for erosion and sedimentation or surface water quality projected with the incorporation of the PDFs. No adverse groundwater impacts are identified.

For the CC and CC-ALPV Alternatives, there is an adverse impact for erosion and sedimentation at the Cañada Chiquita and Segunda Deshecha Cañada crossings. PDFs address water quality impacts and no substantial groundwater impacts are forecast.

For the A7C-ALPV Alternative, there is an adverse impact for erosion and sedimentation at Cañada Chiquita, as a result of the east-west connector. However, PDFs have been incorporated in this Alternative to minimize this adverse impact. There are no adverse impacts for surface water quality projected for this Alternative with the incorporation of the PDFs. No adverse groundwater impacts are identified for this Alternative.

Impacts of the No Action Alternatives

No substantial short-term changes in drainage patterns, water quality, erosion, sedimentation or groundwater are expected under the No Action Alternatives because these Alternatives do not proposed the construction or implementation of any SOCTIIP transportation facilities. However, as traffic volumes increase on existing roads in the study area, pollutant loads to storm water would increase without mitigation (unless equivalent mitigation is provided by the MPAH improvements assumed in the No

Action Alternatives), causing a gradual degradation of surface water quality due to non-point pollutant sources. In addition, given the likelihood of development on RMV and in the six watersheds, the potential for water quality impacts in these watersheds could be substantial. With the implementation of federal, state and local regulations, it is anticipated that impacts to these watersheds would be mitigated on a project by project basis as development is implemented. Therefore, under the No Action Alternatives, no adverse impacts to water quality are anticipated.

Cumulative Impacts Related to Water Quality

If unmitigated, cumulative projects may have a substantial adverse impact on the hydrologic, water quality, erosion/sedimentation potential and groundwater resources of the watersheds in the SOCTIIP study area. At the regional and local levels, these impacts may include increases in discharges, runoff volumes, runoff velocities; erosion and sedimentation increases; water quality degradation; and impacts on groundwater levels and quality. However, it is anticipated that all future projects in these watersheds will need to comply with a similar (or in some instances more stringent) set of guidelines and regulations as the SOCTIIP build Alternatives and, therefore, would need to provide adequate mitigation measures to mitigate these impacts.

Cumulative impacts of the SOCTIIP Alternatives were determined by analyzing the hydrologic impacts under future land use conditions corresponding to the 14,000 dus RMV scenario for both "with project" and "without project" and for the future land use conditions corresponding to the 21,000 dus on RMV scenario for both "with project" and "without project" in terms of percent changes in peak flow rate and runoff volume. Results from the water quality analysis indicate that the increase in percent imperviousness in the regional watersheds associated with the ultimate SOCTIIP alternatives, given both existing and future watershed conditions, is essentially negligible. The addition of impervious surfaces, due to the SOCTIIP Alternatives, increases both peak runoff rates and flow volumes for the range of design storms examined (2- to 100-year events). However, the percent changes were determined to be generally less than 2 to 3 percent. This additional impervious surface represents an incremental increase and cumulative impact to the watershed. Also, the impact differences between the two RMV scenarios were generally found to be very small. Therefore, the SOCTIIP build Alternatives would not contribute to cumulative adverse impacts related to water resources.

Groundwater recharge would not be substantially impacted by the SOCTIIP build Alternatives due to the very small percentage of impervious surface in a given watershed as well as the way runoff is treated. All off site runoff is returned to the environment and all on site runoff after being detained in an EDB is returned to the environment, generally within the same location.

ES.8.5.2 Mitigation Measures Related to Water Quality

The PDFs incorporated in the SOCTIIP build Alternatives are summarized later in Section ES.6.13.2. In addition to the PDFs, mitigation measures provided to minimize impacts to water quality require:

WQ-1 Preserve vegetation on site as feasible.

WQ-2 Implement construction BMPs as appropriate for temporary sediment control, temporary soil stabilization, preservation of existing vegetation, conveyance controls, wind control, temporary stream crossings and waste management.

WQ-3 Prepare and implement the SWPPP.

WQ-4 Conduct emergency planning for highway spills.

WQ-5 Develop and implement an Operations, Maintenance and Monitoring Plan for BMPs.

WQ-6 Monitoring of Operations, Maintenance and Monitoring Plan for BMPs

ES.8.5.3 Unavoidable Adverse Impacts and CEQA Level of Significance after Mitigation Related to Water Quality

With incorporation of the SWMP, SWPPP and BMPs associated with the PDFs, including the EDBs, and the water quality mitigation measures, the adverse water quality impacts are mitigated.

Under CEQA, there would be no unavoidable significant adverse impacts to water quality after implementation of the PDFs.

ES.8.6 SUMMARY OF IMPACTS RELATED TO SOCIOECONOMICS, ENVIRONMENTAL JUSTICE AND GROWTH INDUCEMENT

This Section summarizes the potential impacts of the SOCTIIP alternatives related to socioeconomics and environmental justice. Sections 4.4 (Affected Environment, Impacts and Mitigation Measures Related to Socioeconomics and Environmental Justice) and 6.0 (Growth Inducing Impacts) in the EIS/SEIR describe the existing conditions, study area and methodology, impacts analysis and mitigation measures related to these parameters in detail. These potential impacts are summarized in Table ES.6-1.

ES.8.6.1 Potential Beneficial Socioeconomic Effects of the SOCTIIP Alternatives

Jobs Creation

Construction of the SOCTIIP build Alternatives would have a short-term effect on employment and business in the area. Total construction related jobs generated range from 11,000 for the AIO Alternative to 43,000 for the I-5 Alternative. The timing and geographic distribution of these jobs would depend on the construction phasing of the Alternative, as well as the location of the individual firms retained to complete the work. However, it is expected that the local economy would capture a substantial share of this employment. In addition to these construction jobs, construction workers would likely patronize local businesses, thereby generating short-term revenue increases in the local area. The short-term revenue increases would, in turn, result in a short-term increases in sales tax revenues to the local jurisdictions. This would be a beneficial effect of the SOCTIIP build Alternatives. Because no SOCTIIP related transportation improvements would be constructed under the No Action Alternatives, they would not accrue these benefits.

Economic Benefits Associated with Travel Time Savings

Travel time savings translate into economic benefits in terms of the value of time saved and increased economic activity from improved mobility for people, goods and services. The valuation of time savings and level of economic benefits from improved mobility depend on a number of assumptions that are beyond the scope of the EIS/SEIR. However, based on United States Department of Transportation data, the value of time savings could range between $20 and $30 per vehicle hour (USDOT, Departmental Guidance for the Valuation of Travel Time in Economic Analysis, April 9, 1997, revised February 11, 2003). The type and level of economic benefits from improved mobility would also be influenced by other factors, such as local, regional and national market and economic conditions, local land use policies and regulations, availability of necessary infrastructure and services, community amenities and quality of life, and decisions by local developers and landowners. Therefore, while there is support for concluding

there are positive economic impacts from time savings, the value of these benefits has not been quantified for the SOCTIIP build Alternatives because of the variety of factors and the assumptions required for such quantification. The travel time savings and associated economic benefits cited above are in comparison to the No Action Alternatives. The No Action Alternatives would not accrue these benefits.

The following lists the SOCTIIP build Alternatives in general order from those Alternatives with the highest amount of systemwide travel time savings to those Alternatives with the lowest based on 2025 traffic conditions that assume the build out circulation system and the proposed RMV development plan. The amount of systemwide travel time savings is relatively the same for Alternatives that are listed together and that amount is substantially different from other higher or lower ranking Alternatives.

- The FEC-M, FEC-W, CC, A7C-FEC-M/Preferred and I-5 Alternatives, with 18,000 to 21,000 hours of travel time savings per day.
- The CC-ALPV and A7C-ALPV Alternatives, with 8,000 hours of travel time savings per day.
- The AIO Alternative, with 5,000 hours of travel time savings per day.

ES.8.6.2 Adverse Impacts Related to Socioeconomics, Environmental Justice and Growth Inducement

As described in Table ES.6-1, the CC Alternative results in adverse impacts related to community cohesion as a result of the division of existing neighborhoods in the Talega Planned Community (PC) and displacement of community facilities in the City of San Clemente; and economic impacts to the City of San Clemente due to reductions in property, sales and transit occupancy tax revenues due to property acquisition and displacement of commercial uses. The A7C-ALPV Alternative results in adverse impacts after mitigation related to community cohesion due to division of an existing neighborhood in the Talega PC. The I-5 Alternative also results in adverse impacts related to community cohesion due to the displacement of community facilities and economic impacts to the Cities of Laguna Hills, Lake Forest, Laguna Niguel, Mission Viejo, San Juan Capistrano and San Clemente due to reductions in property, sales and transit occupancy tax revenues as a result of property acquisition and displacement of commercial uses.

The potential residential displacements, in numbers of existing residential units displaced, as a result of the SOCTIIP build Alternatives are:

- FEC-M Alternative: Initial 0; Ultimate 0
- FEC-W Alternative: Initial 0; Ultimate 0
- A7C-FEC-M/Preferred Alternative: Initial 0; Ultimate 0
- A7C-ALPV Alternative: Initial 83; Ultimate 92
- CC Alternative: Initial 593; Ultimate 602
- CC-ALPV Alternative: Initial 2; Ultimate 14
- AIO Alternative: 263
- I-5 Alternative: 838

The potential displacements of existing non-residential and/or agricultural uses, as a result of the SOCTIIP build Alternatives are:

- FEC-M Alternative: Two agricultural operations and no businesses.

- FEC-W Alternative: One agricultural operations and no businesses.
- CC Alternative: Three agricultural operations and 106 businesses.
- CC-ALPV Alternative: Three agricultural operations and no businesses.
- A7C-FEC-M/Preferred Alternative: No agricultural operations and no businesses.
- A7C-ALPV Alternative: No agricultural operations and no businesses.
- AIO Alternative: Two agricultural operations and 17 businesses.
- I-5 Alternative: No agricultural operations and 382 businesses.

As shown, the I-5 and CC Alternatives result in the greatest amount of displacement, followed by the AIO, A7C-ALPV and CC-ALPV Alternatives. The FEC-M and FEC-W Alternatives, including the Preferred Alternative, result in minor levels of agricultural displacement only.

No SOCTIIP build Alternative would generate "...disproportionately high and adverse effects..." on environmental justice populations (defined as low-income or minority populations).

The CC, CC-ALPV, A7C-ALPV and AIO Alternatives would result in refuse disposal capacity reductions at Prima Deshecha Landfill as a result of the construction of these Alternatives. This capacity reduction would result in additional costs to ratepayers for alternative means of refuse disposal. There would be an additional economic impact to the County as a result of construction of these Alternatives due to the loss of tipping fee revenues, which are used for environmental monitoring, operations and maintenance of the landfill system.

As shown in Table ES.6-1, potential growth facilitating effects would be relatively greater for the build Alternatives that pass through primarily developing and currently undeveloped areas than for Alternatives that pass through existing developed areas and areas that are planned and currently under development. Because this is the case for the corridor and AIO Alternatives, there is potential for growth facilitating impacts under all the corridor Alternatives and the AIO Alternative. In addition, the potential growth facilitating effects of the I-5 and No Action Alternatives were still considered substantial due to the fact that programmed and planned facilities would still be implemented and would facilitate growth in the study area under these Alternatives. The Preferred Alternative minimizes growth-facilitating impacts compared to FEC-M and FEC-W by locating the alignment closer to existing development (e.g., the Talega Development) and within the areas approved for development in the Rancho Mission Viejo Ranch Plan and in the Settlement Agreement with the environmental organizations.

Impacts of the No Action Alternatives Related to Socioeconomics, Environmental Justice and Growth Inducement

The No Action Alternatives would not result in the construction of any SOCTIIP related transportation improvements. Therefore, the No Action Alternatives would not result in any impacts related to community cohesion, loss of employment, displacement, tax revenues, Prima Deshecha Landfill capacity or environmental justice.

The No Action Alternatives would result in potential growth facilitating effects. This potential impact would be relatively lower than for all the corridor Alternatives and the AIO Alternative all of which pass primarily through developing and undeveloped areas.

Cumulative Impacts Related to Socioeconomics, Environmental Justice and Growth Inducement

None of the SOCTIIP build Alternatives, when considered with other cumulative projects, would contribute to substantial cumulative adverse impacts related to residential and non-residential displacement, community cohesion, economic impacts and environmental justice in the study area. There are no cumulative impacts because other projects in the study area do not have impacts in these areas. Therefore, even in combination with the other projects in the area, the impacts of the SOCTIIP build Alternatives are the only impacts in the cumulative study area for socioeconomics and environmental justice, and, therefore, the SOCTIIP build Alternatives would not contribute to cumulative adverse impacts related to socioeconomics and environmental justice.

The SOCTIIP build and No Action Alternatives potentially could contribute to cumulative impacts relating to facilitating or supporting growth in the study area. The cumulative effects of this growth could result in other environmental impacts which, with the impacts of the SOCTIIP Alternatives, could result in cumulative adverse impacts. ~~Potential cumulative impacts in these areas, as well as related mitigation measures, if appropriate, are discussed in the respective sections addressing these issues in this Executive Summary.~~

ES.8.6.3 Mitigation Measures Related to Socioeconomics, Environmental Justice and Growth Inducement

Mitigation measures to avoid or substantially reduce adverse impacts of the build Alternatives related to socioeconomics and environmental justice require:

SE-1 Avoidance or minimization of the temporary occupancy or permanent acquisition of property through refinement of the design of the selected alternative in final design.

SE-2 Compensation for all temporary occupancy and permanent acquisition of property through compliance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970.

SE-3 Provision of replacement affordable housing units in compliance with the City of San Clemente Housing Element.

ES.8.6.4 Unavoidable Adverse Impacts and CEQA Level of Significance after Mitigation Related to Socioeconomics, Environmental Justice and Growth Inducement

The following SOCTIIP build Alternatives would result in adverse impacts related to socioeconomics and environmental justice which cannot be fully mitigated:

- CC Alternative: Divides neighborhoods, displaces community facilities, results in greater than 1 percent reduction in property tax and displace commercial uses and lodging rooms impacting sales tax and transit occupancy tax revenues.
- I-5 Alternative: Displaces community facilities, results in greater than 1% reduction in property tax and displaces commercial uses and lodging rooms impacting sales tax and transit occupancy tax revenues.

These impacts would be significant adverse impacts of these Alternatives which cannot be mitigated to below a level of significance under CEQA. The adverse impacts of the remaining build Alternatives

related to socioeconomics can be mitigated to below a level of significance under CEQA based on implementation of mitigation measures SE-1 to SE-3.

The SOCTIIP build and No Action Alternatives could potentially contribute to impacts relating to facilitating or supporting growth in the study area. The facilitated growth, in and of itself, is not an adverse impact. However, the effects of this facilitated growth could result in impacts on a variety of areas, including agricultural resources, hydrology/drainage, water quality, air quality, noise, biological resources, aesthetics, cultural resources, recreation, mineral resources, public services, and utilities and services. ~~Potential impacts in these areas, as well as related mitigation measures, if appropriate, are discussed in the respective cumulative impacts sections of this Executive Summary and the EIS/SEIR which address these issues.~~

ES.8.7 SUMMARY OF IMPACTS RELATED TO AIR QUALITY

This Section summarizes the potential impacts of the SOCTIIP alternatives related to air quality. The air quality analysis considered the following key pollutants of greatest concern in the South Coast Air Basin (SCAB) and the San Diego Air Basin (SCAB): ozone (O3), nitrogen oxides (NOx), carbon monoxide (CO), particulate matter (PM10), reactive organic gases (ROG) and hydrocarbons (HC). The Federal and California governments have set specific ambient air quality standards (AAQSs) for the pollutants. The South Coast Air Quality Management District (SCAQMD) has set specific thresholds for construction related air emissions.

The federal Clean Air Act (CAA), as amended, specifies procedures and timetables for attaining national AAQS for six criteria pollutants: O3, CO, PM10, nitrogen dioxide (NO2), sulfur dioxide (SO2) and lead (Pb). California has also established regional and subregional analyses to focus on the primary pollutants of HC, NOx and sulfur oxides (SOx). Theses are known chemicals that affect public health directly or in combination with other chemicals released into the atmosphere.

Air quality is evaluated at three levels: regional, subregional and local. The air quality analysis for the SOCTIIP Alternatives identified the pollutant emissions levels under the with and without project conditions and compared the with project conditions to the without project conditions, to assess whether the SOCTIIP build Alternatives would result in improvement or degradation of air quality compared to the No Action Alternatives.

The potential beneficial effects and adverse impacts of the SOCTIIP Alternatives related to air quality are summarized below. Section 4.7 (Affected Environment, Impacts and Mitigation Measures Related to Air Quality) in the EIS/SEIR describes the existing conditions, study area and methodology, impacts analysis and mitigation measures related to air quality in detail. These potential impacts are summarized in Table ES.6-1.

ES.8.7.1 Beneficial Air Quality Impacts of the SOCTIIP build Alternatives

The SOCTIIP corridor Alternatives result in a decrease of regional emissions for HC and CO. The primary reason for the reduction in HC and CO emissions is that, with the SOCTIIP corridor Alternatives, a large number of vehicles would be attracted from arterial roads where the travel speeds are in the low 33 kilometers per hour (kph, 20 miles per hour (mph) range, and instead would drive on a corridor where the travel speed would be substantially higher. Emission rates for HC and CO are near their lowest at around 60 mph (100 kph). Therefore, redistributing vehicles from arterial roads to the corridor results in reductions in HC and CO emissions.

The AIO Alternative would also result in some reductions in HC and CO. The I-5 Alternative would produce less CO and similar HC emissions.

ES.8.7.2 Adverse Air Quality Impacts

Short-Term Adverse Air Quality Impacts During Construction

The SOCTIIP build Alternatives will result in short-term emissions during construction. Air pollutants will be emitted by construction equipment and fugitive dust will be generated from grading activities. Typically, the pollutant emissions due to grading activities would be primarily PM10 while emissions from construction equipment would be CO and Nox. The peak periods of construction will result in the greatest levels of short-term air pollution emissions. The construction information for the SOCTIIP was based on the worst case peak construction day during which a maximum number of pieces of equipment and area (ha/ac) disturbed per day were assumed. Construction equipment would consist of haul trucks, graders, dozers, loaders and other heavy construction equipment, crew size and commuting trips, ancillary equipment, miscellaneous vehicles and equipment associated with demolition.

For all the SOCTIIP build Alternatives, construction equipment would produce the greatest amount of emissions for all the key pollutants. Grading would also generate a substantial amount of PM10 while emissions from employee travel, import/export activities and demolition would be secondary.

In general, the I-5 Alternative would generate the greatest amount of construction related emissions while the AIO Alternative would generate the least amount of these emissions. These emissions would mostly generated by the large number of pieces of construction equipment operating on a worst case peak day. For all the SOCTIIP build Alternatives, the construction related CO, ROG, NOx and PM10 emissions would exceed the SCAQMD criteria thresholds which would be an adverse impact. The greatest levels of air pollution emissions would occur during peak periods of construction which is most likely when demolition, grading and site preparation would be occurring simultaneously. Specifically, construction equipment produces most of the CO, ROG, NOx, SOx and PM10 emissions. Grading also generates a substantial amount of PM10. For the SOCTIIP build Alternatives, the peak PM10 emissions (estimated at 727 to 2,615 pounds per day depending on the Alternative) are minor compared to the total average annual of 416 tons per day (832,000 pounds per day) of particulate matter currently released in the whole SCAB.

The construction related emissions generated by the SOCTIIP build Alternatives are projected to exceed the SCAQMD criteria for all pollutants. These temporary increases would be local to the construction activities and would be considered an adverse short-term impact of the SOCTIIP build Alternatives.

Long-Term Operations Air Quality Impacts

Regional traffic air quality emissions will decrease substantially in future years, due to the use of cleaner vehicles in future years which is mandated by state and federal laws. The reduction in emissions will occur with or without the SOCTIIP build Alternatives. In comparison to the No Action Alternatives, the FEC-W, FEC-M, CC, CC-ALPV, A7C-FEC-M/Preferred, A7C-ALPV, AIO and I-5 Alternatives will result in substantial increases in NOx emissions and will result in a long-term regional adverse air quality impact related to NOx emissions. These SOCTIIP build Alternatives result in higher regional emissions of NOx because many vehicles which would otherwise travel on arterial roads at slower speeds and lower emission rates will be attracted to the corridor under thee Alternatives. As a result, these vehicles will be traveling faster and will be emitting pollutants at a higher rate. The I-5 Alternative would also result in adverse impacts related to ROG emissions compared to the No Action Alternative.

Impacts of the No Action Alternatives Related to Air Quality

The No Project Alternatives would result in adverse long-term air quality impacts due to increased emissions of HC and CO in comparison to most of the SOCTIIP build Alternatives. The No Action Alternatives retain a large number of vehicles on the arterial roads and on congested I-5 where the travel speeds would be much lower than on the corridors. Emission rates for HC and CO are higher at these travel speeds of 33 kph (20 mph) compared to the 100 kph (60 mph) range and result in an increase in emissions compared to the SOCTIIP build alternatives. This impact occurs because traffic is not moved at higher speeds under the No Action Alternatives. The No Action Alternative also produces the greatest PM10 compared to the SOCTIIP build Alternatives.

Cumulative Air Quality Impacts

Air quality impacts, which are derived from the traffic impacts assessment, were evaluated under a range of assumptions related to traffic and circulation. The study area included most of the SCAB and small segments in the northern San Diego County which are in the extreme northern reaches of the SDAB. Due to the duration of construction for the SOCTIIP build Alternatives (multiple years), coupled with potential for development of other projects in the area, the likelihood of a SOCTIIP build Alternative and at least some other projects being under construction concurrently is high. The SOCTIIP build Alternatives would result in an increase in pollutant emissions during construction and would, therefore, contribute to cumulative short-term adverse air quality impacts.

All the SOCTIIP build Alternatives would contribute to cumulative long-term impacts for NOx.

ES.8.7.3 Conformity with Regional Plans

The SOCTIIP alternatives were evaluated to determine whether they would meet conformity requirements in the State Implementation Plan. FHWA projects must be found to conform before they are adopted, accepted, approved or funded. Transportation projects must conform to the following criteria established in the CAA Section 176(c)(2)(C):

- They must come from a conforming transportation plan and TIP.
- The design concept and scope of the project that was in place at the time of the conformity finding must be maintained through implementation.
- The project design concept and scope must be sufficiently defined to determine emissions at the time of the conformity determination.

The Far East Corridor alternatives are consistent with the design concept and scope assumed in the RTPs and TIPs. ~~As a Preferred Alternative is identified, t~~The TCA ~~or other implementing agency~~ will work with the MPOs, to update regional emissions analyses and RTP~~/TIP~~ conformity determinations as necessary. The Preferred Alternative is consistent with the RTIP. The RTP contemplates eight lanes while the Preferred Alternative has a maximum of six general purpose lanes. ~~Design elements specific to each alternative such as the number and location of interchanges and intersections, auxiliary and truck climbing lanes, and widening of arterial facilities connecting to SR 241 could affect the regional emissions analysis and require an updated conformity determination.~~ The TCA and FHWA will assure that all conformity requirements are met prior to FHWA issuing the ROD for the SOCTIIP.

ES.8.7.4 Mitigation Measures Related to Air Quality

Mitigation measures AQ-1 to AQ-5 to reduce the short-term adverse construction related air quality impacts of the SOCTIIP build Alternatives require:

AQ-1 Particulate emission and dust control and preventive measures as defined in the SCAQMD Rule 403.

AQ-2 Control of particulate emissions and fugitive dust through specific requirements in SCAQMD Rule 403.

AQ-3 Street sweeping adjacent to the construction areas.

AQ-4 Washing of vehicle wheels prior to exiting construction areas.

AQ-5 Control of construction equipment emissions.

Mitigation measures AQ-6 and AQ-7 to reduce the long-term adverse operations related air quality impacts of the SOCTIIP build Alternatives require:

AQ-6 Stabilization of unpaved road connections and cleaning of the paved road when dirt tracked onto the paved road from the unpaved road is visible.

AQ-7 Removal of material washed onto paved roads after storm events.

ES.8.7.5 Unavoidable Adverse Impacts and CEQA Level of Significance after Mitigation for Air Quality

All the SOCTIIP build Alternatives (FEC-M, FEC-W, CC, CC-ALPV, A7C-FEC-M/Preferred, A7C-ALPV, AIO and I-5 Alternatives) would result in short-term adverse air quality impacts during construction which cannot be fully mitigated. Even with the mitigation described above, these short-term adverse impacts of the FEC-M, FEC-W, CC, CC-ALPV, A7C-FEC-M/Preferred, A7C-ALPV, AIO and I-5 Alternatives cannot be mitigated to below a level of significance under CEQA.

The FEC-M, FEC-W, CC, CC-ALPV, A7C-ALPV, A7C-FEC-M/Preferred, AIO and I-5 Alternatives would result in long-term unavoidable adverse operations impacts related to NOx which cannot be fully mitigated. The I-5 Alternative would also result in long-term adverse impacts due to ROG emissions. Even with the mitigation described above, these long-term impacts of the FEC-M, FEC-W, CC, CC-ALPV, A7C-ALPV, A7C-FEC-M/Preferred, AIO and I-5 Alternatives cannot be mitigated to below a level of significance under CEQA with regard to ROG. These would be unavoidable adverse air quality impacts of the SOCTIIP build Alternatives.

The No Action Alternatives would result in substantially higher emissions of ROG and CO than the SOCTIIP build Alternatives. Because no mitigation is proposed under the No Action Alternatives, those Alternatives would result in long-term unavoidable adverse impacts due to ROG and CO emissions that exceed the SCAQMD threshold and that are significant and adverse under CEQA.

ES.8.8 SUMMARY OF IMPACTS RELATED TO NOISE

This Section summarizes the potential impacts of the SOCTIIP alternatives related to noise. Section 4.6 (Affected Environment, Impacts and Mitigation Measures Related to Noise) in the EIS/SEIR describe the

existing conditions, study area and methodology, impacts analysis and mitigation measures related to noise in detail. Table ES.6-1 summarizes these potential impacts.

ES.8.8.1 Adverse Impacts Related to Noise

Long-Term Adverse Noise Impacts

For each SOCTIIP build Alternative, the number of residences, businesses, schools and parks that would be impacted by traffic noise due to the implementation of the alternative is shown in Table ES.6-1. Impacted means that they would experience noise levels approaching (i.e. within 1 decibel (dB) of) or exceeding the FHWA Noise Abatement Criteria (NAC) or they experience a substantial increase as defined by Caltrans (12 dBA or greater). Table ES.6-1 also presents the number of residences, businesses, schools and parks that still would be adversely impacted with the implementation of the recommended mitigation.

Table ES.6-1 shows that one residence would be adversely impacted under the FEC-M, FEC-W and A7C-FEC-M/Preferred Alternatives with respect to the FHWA criteria, even with noise abatement. This is a single residence (Receptor 021; at the end of Via Promontorio in the City of San Clemente) that is projected to experience a substantial noise increase with these build Alternatives. The analysis shows that, per the FHWA NAC, it would not be reasonable to provide a sound wall for this residence. There are several other receptors in the area of this receptor that are not subject to a substantial noise increase. However, the existing noise level measured at this receptor was much lower than the other receptors, resulting in a substantial noise increase. Because this impact only occurs at one residence and the ultimate noise level is still well below the NAC, these Alternatives would not result in an adverse noise impact at this receptor.

Under the I-5 Alternative, several receptors would be impacted by traffic noise under the FHWA NAC. Although there are existing sound walls at all these receptors, the existing walls do not reduce noise levels to below the NAC. Higher walls were considered but could not provide at least 5 dB of additional noise reduction and, therefore, are not considered feasible under the Caltrans/FHWA criteria. In all cases, the with-project noise levels are not projected to increase by more than 3 dB over existing conditions. Increases less than 3 dB are imperceptible in community noise situations and, therefore, the I-5 Alternative would not result in adverse noise impacts.

The analysis shows that with the sound abatement specified in Section 4.6.4 (Mitigation Measures Related to Noise) in the EIS/SEIR, none of the SOCTIIP build Alternatives would result in adverse noise impacts under the FHWA NAC assessed for compliance with NEPA.

Construction Noise Impacts

Noise levels from construction activities are measured against the applicable local municipalities' Noise Ordinances to assess whether there are any short-term noise impacts. Construction activities complying with the applicable local Noise Ordinance are considered to result in no adverse short-term noise impacts. Construction activities which result in short-term noise levels which exceed the applicable local Noise Ordinance are considered to result in short-term adverse impacts.

Although construction noise represents a short-term impact on ambient noise levels, construction equipment and construction activities can generate high noise levels. Noise generated by construction equipment such as trucks, graders, bulldozers, concrete mixers and portable generators can reach high levels. Construction noise activities can be divided into five broad categories based on their potential to

generate noise: pile driving, heavy grading, general construction activities, nighttime demolition and haul routes.

Generally, the majority of construction activity would occur only during daytime hours. However, major bridge construction may occur on a 24 hour basis. In addition, because the I-5 Alternative is a major transportation facility in the study area and closure of lanes and/or the freeway segments during the day may result in an adverse traffic impact, much of the construction on I-5 may occur during the nighttime hours including demolition of many of the existing overpasses.

In summary, as shown in Table ES.6-1, construction noise impacts would be substantial and adverse under all the SOCTIIP build Alternatives.

Impacts of the No Action Alternatives Related to Noise

The No Action Alternatives do not include the construction or implementation of any SOCTIIP related transportation improvements in the study area. Therefore, these Alternatives would not result in any SOCTIIP related adverse construction or operations noise impacts. However, not constructing a facility may result in an increase of traffic and noise along certain arterial roads and cause traffic related noise increases along I-5.

Cumulative Noise Impacts

Cumulative noise impacts under CEQA for the proposed SOCTIIP were analyzed for the traffic scenarios that assume build out of the MPAH and other reasonably foreseeable projects. This includes three traffic scenarios, with RMV developed with 14,000 dus, RMV developed with 21,000 dus and RMV developed with 21,000 dus and all of the toll roads in Orange County operating toll-free (the first two scenarios assume the toll roads operating under existing with tolls conditions). The cumulative impacts for noise parallels the methods and assumptions for the traffic analysis and was based on full build out in accordance with adopted forecasts and projections. The traffic analysis already accommodates reasonable foreseeable projects consistent with a cumulative traffic condition. The noise analysis incorporates those traffic numbers. Consequently, the cumulative analysis for the SOCTIIP Alternatives is already accommodated in the long-term impact analysis described above.

ES.8.8.2 Mitigation Measures and Commitments Related to Noise

Mitigation measures N-1 to N-6 to avoid or substantially reduce adverse noise impacts during construction of the SOCTIIP build Alternatives require:

N-1 Compliance with local control of construction hours and days of construction activities and coordination with MCB Camp Pendleton.

N-2 Maintenance and muffling of construction equipment.

N-3 Coordination with affected schools and control of noise levels at schools.

N-4 Designation of approved haul routes.

N-5 Notification and, as requested, relocation of residents near areas of nighttime demolition.

N-6 Provision of a Noise Complaint Office.

Mitigation measures N-7 and N-8 to avoid or substantially reduce long-term adverse noise impacts during operation of the SOCTIIP build Alternatives require:

N-7 Final detailed noise analysis and sound barrier analysis during final design.

N-8 Implementation of recommended final sound barriers.

Commitments NC-1 and NC-2 are additional activities related to the provision of effective noise attenuation for long-term noise impacts:

NC-1 Assessment of the reasonableness of each final sound barrier.

NC-2 Proper design and evaluation of any sound barrier located in a floodplain.

ES.8.8.3 Unavoidable Adverse Impacts and CEQA Level of Significance after Mitigation Related to Noise

As shown in Table ES.6-1, the I-5 Alternative is the only SOCTIIP build Alternative that results in unavoidable short-term adverse noise impacts (nighttime demolition). During nighttime demolition, even with the mitigation provided, residents may be exposed to adverse demolition noise impacts. Implementation of the mitigation measures described above would substantially reduce the construction related noise impacts for all the SOCTIIP build Alternatives, except the I-5 Alternative. Measure N-5 reduces the impact of this activity, but not to below a level of significance under CEQA.

Under the Community Noise Equivalent Level (CNEL) criteria, the analysis found that, with the sound walls required under the FHWA NAC, all receptors subject to the CNEL criteria (i.e. residences and parks) along the SOCTIIP build Alternatives are projected to experience a noise level increase of less than 3 dB or experience CNEL noise levels lower than the 65 CNEL criteria. The impacts of all the SOCTIIP build Alternatives would be mitigated to below a level of significance under CEQA with the implementation of the sound walls required to meet the FHWA NAC.

The effects of the SOCTIIP Alternatives on traffic noise, measured as CNEL levels along roads away from the project sites, were also analyzed. That analysis examined the changes in traffic noise CNEL levels along all roads analyzed in the project traffic study. Based on the findings of that analysis, if a SOCTIIP Alternative resulted in a noise increase of three dB or more, analysis of that noise impact on sensitive receptors was conducted. This analysis found that where a SOCTIIP Alternative results in a substantial noise increase, the future noise level, with the alternative, would not exceed 65 CNEL at any sensitive receptors. None of the SOCTIIP Alternatives would result in any substantial off site traffic noise impacts under CEQA.

ES.8.9 SUMMARY OF IMPACTS RELATED TO MILITARY USES

This Section summarizes the potential impacts of the SOCTIIP Alternatives related to military uses. Section 4.21 (Affected Environment, Impacts and Mitigation Measures Related to Military Uses) in the EIS/SEIR describe the existing conditions, study area and methodology, impacts analysis and mitigation measures related to impacts on military uses on Camp Pendleton in detail. These potential impacts are summarized in Table ES.6-1.

As discussed earlier, in 1988, the Marine Corps agreed, in consultation with the TCA, to the evaluation of one potential alignment of the southern extension of the FTC on the Base, subject to several conditions, including the stipulation that any toll road alignment on Camp Pendleton must not impact or interfere

with the operational flexibility of the Marine Corps Mission at that Base. The alignment of the FEC-M, FEC-W and A7C-FEC-M/Preferred Alternatives is consistent with the alignment the TCA and Camp Pendleton mutually agreed on in 1992 as an alignment for the FTC toll road on the Base ("Statement of Intent Regarding Foothill Transportation Corridor Oso Parkway to I-5, Modified C Alignment," 03/04/92). That alignment represents the one and only alignment which meets the 1988 Commandant Letter stipulations for constructing a corridor project on Camp Pendleton and the 1992 Statement of Intent.

ES.8.9.1 Adverse Impacts Related to Military Uses

The FEC-W, FEC-M, A7C-FEC-M/Preferred, CC, I-5 and No Action Alternatives were analyzed for potential adverse impacts on the Military Mission at Camp Pendleton. The CC-ALPV, A7C-ALPV and AIO Alternatives were not analyzed for military impacts because they are not on or in the immediate vicinity of Camp Pendleton and, therefore, would not impact Camp Pendleton. As described in Section 4.21, the FEC-W, FEC-M and A7C-FEC-M/Preferred Alternatives would result in adverse impacts related to ground and amphibious training because these Alternatives traverse the northernmost area of the Base (near the Orange/San Diego County line) and result in the permanent and temporary loss of land available for training.

Impacts of the No Action Alternatives Related to Military Use

The No Action Alternatives would not result in adverse impacts to military uses at Camp Pendleton because these Alternatives do not propose any construction or implementation of SOCTIIP infrastructure improvements on or near the Base. The No Action Alternatives result in increased congestion on I-5, which would adversely impact the mobility of Marine Corps personnel.

Cumulative Impacts Related to Military Uses

The FEC-W, FEC-M, A7C-FEC-M/Preferred and I-5 Alternatives and other cumulative projects in the immediate vicinity of the Base would contribute to cumulative adverse impacts related to the loss of land from the Base and continued encroachment of other land uses along the Base boundary. These encroachments and reductions in buffers are considered by the Department of Defense and the Marine Corps to directly and adversely affect the ability of the Corps to most effectively perform its Military Mission at Camp Pendleton. The other SOCTIIP build Alternatives would not contribute to a cumulative adverse impact on the Base related to encroachments and reductions in buffers because these Alternatives are not in the immediate vicinity of the Base.

ES.8.9.2 Mitigation Measures Related to Military Uses

Mitigation measures M-1 to M-6 to avoid or substantially reduce adverse impacts of the SOCTIIP build Alternatives related to military uses require:

M-1 Construction lighting during evening and night activities will be adjusted with proper shielding to focus illumination down in designated work areas and cranes use must include Federal Aviation Administration (FAA) approved aircraft obstruction lights mounted at the highest point of the equipment's extension.

M-2 The TCA, the contractor and Camp Pendleton will coordinate to identify access routes and staging areas during construction to ensure impacts on Base training are minimized.

M-3 Security measures shall be incorporated into the construction specifications to ensure that construction workers and others cannot access the Base from the construction areas.

M-4 Permanent night lighting will be adjusted with proper shielding to focus illumination down to avoid spillage of the light in an upward direction and on adjacent properties including the Base.

M-5 Two underpasses, to provide clearance for military personnel and equipment movement, will be sized and designed to accommodate the equipment and personnel needs as may be defined by the Marine Corps and the DON.

M-6 Security measures shall be incorporated into the project design to ensure that users of the corridor cannot access the Base.

ES.8.9.3 Unavoidable Adverse Impacts and CEQA Level of Significance after Mitigation Related to Military Uses

The FEC-W, FEC-M and A7C-FEC-M/Preferred Alternatives would result in adverse impacts related to military uses and the Military Mission at Camp Pendleton which cannot be fully mitigated. These impacts, related to the permanent loss of available land for ground and amphibious training or other military uses, cannot be mitigated to below a level of significance under CEQA.

ES.8.10 SUMMARY OF IMPACTS RELATED TO VISUAL RESOURCES

This Section summarizes the beneficial effects and potential adverse impacts of the SOCTIIP Alternatives related to visual resources. These potential impacts are summarized in Table ES.6-1. The methodology for assessing visual impacts for the SOCTIIP Alternatives is based on FHWA guidelines contained in the Visual Impact Assessment for Highway Projects (1981) and FHWA Esthetics and Visual Quality Guidance Information (August 18, 1986). To determine visual impacts, major viewer groups and sensitive viewers of the proposed SOCTIIP build Alternatives were identified. The FHWA Esthetics and Visual Quality Guidance Information acknowledges that certain areas are generally recognized as sensitive to visual changes related to road projects. These sensitive areas are residential areas, areas of recognized scenic beauty (local, state and national), and parks and recreation areas. These locations are deemed sensitive in part because of the expectations of viewers from these locations.

Existing conditions photographs from selected viewpoints along each of the SOCTIIP build Alternatives, including sensitive view points, were taken and computerized visual simulations or wireframes (a simpler representation of changes in views) were developed to show views as they would appear with the build Alternatives. The view simulations and wireframes were compared to existing conditions photographs to determine the change in visual quality that would result from implementation of the SOCTIIP build Alternatives.

Regionally outstanding views in the SOCTIIP study area were identified. These are views that provide wide panoramic views of extensive areas of valleys and ridges that are largely undeveloped and free from detracting visual elements. These views are considered to have an especially high visual quality because of the contrasting landforms, landcover and view elements within them which combine to form a vivid and harmonious view scene.

In addition to an evaluation of the changes in visual quality, including changes in regionally outstanding views, the assessment of visual impacts included evaluation of conflicts with established visual/aesthetic policies of affected jurisdictions. These policies include oak tree preservation for visual values, protection of views from designated scenic roads, preservation of scenic resources and blockage of ocean

views. Community elements or landmarks which would be affected or eliminated with implementation of the SOCTIIP build Alternatives were also identified.

Section 4.18 (Affected Environment, Impacts and Mitigation Measures Related to Visual Resources) in the EIS/SEIR describes the existing conditions, study area and methodology, impacts analysis and mitigation measures related visual resources in detail.

ES.8.10.1 Beneficial Effects Related to Visual Resources

The A7C-ALPV Alternative would have a positive visual effect because motorists on the toll road would have access to a regionally outstanding view which is currently available only from private property.

ES.8.10.2 Adverse Impacts Related to Visual Resources

Implementation of a SOCTIIP build Alternative would introduce urbanizing elements into rural areas including the toll or arterial road surfaces, connector ramps and toll plazas. Construction impacts of the SOCTIIP build Alternatives are related to short-term views of construction and disturbed areas and can be substantially mitigated. Long-term impacts, depending on the alternative, can include changes in visual quality for viewers from sensitive land uses and motorists; changes in regionally outstanding views and/or changes in community character. Section 4.18 in the EIS/SEIR provides graphic representations of visual impacts from selected locations in the study area. The SOCTIIP build Alternatives will result in substantial adverse long-term visual impacts before and after mitigation.

Impacts of the No Action Alternatives Related to Visual Resources

The No Action Alternatives would not result in adverse visual impacts because they do not propose construction or implementation of any SOCTIIP infrastructure improvements in the study area.

Cumulative Impacts Related to Visual Resources

The urbanizing elements of the SOCTIIP build Alternatives in rural areas include the toll or arterial road surfaces, connector ramps and toll plazas. All the corridor and the AIO Alternatives would, when considered with other cumulative projects in the area, contribute to changing the existing visual character of the rural areas crossed by these alternatives to a more urban visual character. Therefore, the SOCTIIP build Alternatives, with the exception of the I-5 Alternative, when considered with other cumulative projects in the area, would contribute to a cumulative long-term adverse impact related to visual resources in the study area. The Preferred Alternative is designed to minimize cumulative impacts to visual resources by locating the alignment closer to existing developed areas (e.g., the Talega development) and within the areas approved for development in the Rancho Mission Viejo Ranch Plan and the Settlement Agreement between RMV, the County and the environmental organizations.

ES.8.10.3 Mitigation Measures Related to Visual Resources

Mitigation measures AS-1 to AS-4 to reduce adverse impacts of the SOCTIIP build Alternatives related to visual resources require:

AS-1 Preparation of Aesthetic Design Guidelines and minimization of grading impacts in hillside areas.

AS-2 Preparation of Landscape Design Guidelines.

AS-3 Lighting will be per Caltrans, County of Orange or local jurisdiction policies, as applicable.

AS-4 For the SOCTIIP corridor alternatives, illumination outside of the right-of-way will not exceed 1/10 of the road's average horizontal illuminance. There shall be no illumination outside the right-of-way through The Donna O'Neill Conservancy. For the AIO and I-5 Alternatives, the implementing agency will minimize spillover of light outside the road right-of-way.

ES.8.10.4 Unavoidable Adverse Impacts and CEQA Level of Significance after Mitigation Related to Visual Resources

The following SOCTIIP build Alternatives would result in unavoidable long-term direct adverse impacts related to visual resources which cannot be fully mitigated:

- FEC-M Alternative: Reduction in visual quality at three locations; and conflicts with the visual/aesthetic policies of three jurisdictions.
- FEC-W Alternative: Reduction in visual quality at four locations; and conflicts with the visual/aesthetic policies of four jurisdictions.
- CC Alternative: Reduction in visual quality at two locations; conflicts with the visual/aesthetic policies of two jurisdictions; and division of two communities.
- CC-ALPV Alternative: Conflict with the visual/aesthetic policies of one jurisdiction; and division of one community.
- A7C-FEC-M/Preferred Alternative: Reduction in visual quality at six locations; reduction in quality of one regionally outstanding view; and conflicts with the visual/aesthetic policies of four jurisdictions.
- A7C-ALPV Alternative: Reduction in visual quality at five locations; reduction in quality of one regionally outstanding view; conflicts with the visual/aesthetic policies of one jurisdiction; partially eliminates one community element; and physically divides one community.
- AIO Alternative: Reduction in visual quality at two locations; and conflicts with the visual/aesthetic policies of one jurisdiction.
- I-5 Alternative: Blockage of some ocean views by soundwalls.

Even with mitigation, the FEC-M, FEC-W, CC, CC-ALPV, A7C-FEC-M/Preferred, A7C-ALPV and AIO Alternatives would result in significant unavoidable adverse long-term impacts under CEQA to visual quality and conflict with jurisdictional visual/aesthetic policies. The CC, CC-ALPV and A7C-ALPV Alternatives would result in the physical division of communities and the A7C-FEC-M/Preferred and A7C-ALPV Alternatives would result in the reduction in visual quality of a regionally outstanding view, which are significant adverse impacts under CEQA. The I-5 Alternative would result in the blockage of some ocean views by soundwalls, which is a significant adverse impact under CEQA.

ES.8.11 SUMMARY OF IMPACTS RELATED TO LAND USE

This Section summarizes the potential adverse impacts of the SOCTIIP Alternatives related to land use. Section 4.2 (Affected Environment, Impacts and Mitigation Measures Related to Land Use) in the EIS/SEIR describes the existing conditions, study area and methodology, impacts analysis and mitigation measures related land use in detail. These potential impacts are summarized in Table ES.6-1.

ES.8.11.1 Potential Adverse Land Use Impacts of the SOCTIIP Alternatives

Potential Long-Term Adverse Land Use Impacts

Each SOCTIIP Alternative was evaluated for consistency with adopted land use plans. General Plans of the cities and the unincorporated Orange County areas in which the alternatives are located were reviewed to determine whether or not a given SOCTIIP Alternative was accommodated in the General Plan Land Use Elements (LUEs) of the affected jurisdictions. LUEs are required to be consistent with the Circulation Element of General Plans which identify all facilities shown on the MPAH including the conceptual alignment of the FTC-S. In Orange County, the FEC-M Alternative is consistent with the General Plans because they include an alignment in Orange County similar to the alignments shown on the MPAH for the FTC-S. To a lesser degree, the FEC-W and A7C-FEC-M/Preferred Alternatives are consistent with the LUEs, but they would each have some minor previously unplanned land use impacts. The inconsistency of an Alternative with the adopted land use plans is defined in terms of area of impact of each Alternative by jurisdiction and general plan land use category.

No cities in San Diego County have land uses affected by the SOCTIIP Alternatives. The County of San Diego defers to MCB Camp Pendleton related to land uses and planning on the Base. Therefore, no General Plans for San Diego County or any city in that County were used for the consistency evaluation in San Diego County. The Integrated Natural Resources Management Plan (INRMP) for MCB Camp Pendleton and the San Onofre State Beach (SOSB) General Plan acknowledge the FTC-S planning efforts. However, the Marine Corps has the following stipulations regarding alignments over the Base: (1) that other off-Base alignment alternatives must also be considered and evaluated in an equal manner; (2) that any planned Camp Pendleton alignment must closely adhere to the Base's northern boundary; (3) that any adverse environmental impacts created as a result of siting this route on the Base must be fully and properly mitigated; and (4) that any on-Base alignment must not impact the Marine Corps' mission or interfere with the Base's operational flexibility. Although the FEC-W, FEC-M/Preferred and the A7C-FEC-M Alternatives would impact the Military Mission at Camp Pendleton, they are consistent with the previous adopted alignment (CP) on the Base. The other build Alternatives that are either within the I-5 right-of-way or not in the vicinity of the Base are also consistent. These are the CC, CC-ALPV, A7C-ALPV, AIO, I-5 and No Action Alternatives.

Because SOSB is an outlease area of MCB Camp Pendleton and the DON is the owner/lessor, land use control lies with the DON. Notwithstanding its lessee status, the California Department of Parks and Recreation adopted a General Plan for SOSB in 1984. The General Plan acknowledges the FTC-S alignment through SOSB and east of San Mateo Creek, which had already been on the County of Orange's General Plan for several years. Because the SOSB General Plan anticipated plans for the FTC through the Cristianitos Subunit (Subunit 1) there is no inconsistency with the SOSB General Plan for the FEC-W, FEC-M and the A7C-FEC-M/Preferred Alternatives. The other SOCTIIP build Alternatives that are either in the I-5 right-of-way or that do not affect SOSB at all would also be considered consistent. These are the CC, CC-ALPV, A7C-ALPV, AIO, I-5 and No Action Alternatives.

As described in Table ES.6-1, the FEC-W, FEC-M and A7C-FEC-M/Preferred Alternatives result in adverse impacts to uses in SOSB Cristianitos Subunit. The CC, CC-ALPV, A7C-ALPV, AIO and I-5 Alternatives result in adverse impacts to existing and planned land uses and divisions of established communities in the SOCTIIP study area.

Potential Adverse Land Use Impacts During Construction

A potential short-term impact of the SOCTIIP build Alternatives related to land use would be associated with the reuse of previously developed lands that were acquired and cleared of the existing development

to accommodate the construction of the build Alternative. Remainder parcels which are large enough for reuse would be sold after the completion of the construction of the SOCTIIP build Alternative and would be subject to independent environmental evaluation for any planned land use. These would not be adverse short-term impacts of the SOCTIIP build Alternatives.

Construction of the SOCTIIP build Alternatives may require the acquisition or long-term lease of land for temporary use during construction only to accommodate construction staging, materials storage, equipment storage and other activities. Remainder parcels used for temporary construction purposes would be anticipated to be sold or returned to their original owners, as appropriate. The short-term use of this land for the construction of the SOCTIIP build Alternatives would not be an adverse impact. Table ES.6-1 shows the total areas of both temporary disturbance and permanent right-of-way by jurisdiction under the build Alternatives.

Impacts of the No Action Alternatives Related to Land Use

The No Action Alternatives would not result in direct or indirect land use impacts because they would not result in the construction of any SOCTIIP related transportation improvements in the study area. The No Action Alternatives are not anticipated to affect planned land uses because the applicable local jurisdictions have required or are anticipated to require those uses to include sufficient transportation facilities to meet their needs, independent of the SOCTIIP Alternatives. Because they do not include the FTC-S as shown in the MPAH and area General Plans, the No Action Alternatives would not be consistent with the adopted land use plans in Orange County. The No Action Alternatives would not result in short-or long-term adverse impacts related to land use because the No Action Alternatives would not result in the acquisition of any property, the removal of any existing land uses, impacts on Camp Pendleton or the construction of any SOCTIIP related transportation improvements.

Cumulative Impacts Related to Land Use

Cumulative impacts related to land use are related to conversion of open space to developed area and displacement of residential uses, as discussed below.

Conversion of Open Space

Development of the RMV property is expected within the next 25 years. ~~As of December 2003, proposed development plans for the property included only general information on the location and type of proposed development on the RMV. There is only preliminary information on both the RMV development plans for the 9,254 ha (22,850 acre) ranch and the County's NCCP. Even without specific information about these two major planning projects, conversion of some of the land on RMV from undeveloped to urban uses will occur. Therefore, implementation of the SOCTIIP corridor Alternatives, because they traverse the RMV, would contribute to a cumulative land use impact as a result of converting currently undeveloped land to an urban road use. The AIO Alternative would only incrementally contribute to cumulative impacts on the conversion of undeveloped land, for those arterial highway segments widened beyond their MPAH designations, which is really not cumulatively considerable regarding open space conversion. There would not be cumulative impacts to land use related to the conversion of undeveloped land to urban and suburban land under the I-5 and No Action Alternatives.~~

The County of Orange approved the RMV Planned Community (The Ranch Plan) in November 2004, after the publication of the SOCTIIP Draft EIS/SEIR. The Ranch Plan depicted an alignment of the FTC South as shown on the Master Plan of Arterial Highways; however, the EIR for the Ranch Plan acknowledged that if another alignment is selected, the development plan will accommodate the selected

alignment (Ranch Plan DEIR, page 3-5). The Ranch Plan was approved at a General Plan or conceptual level plan, with development areas shown as "bubbles" and no grading plan or placement of residential units or buildings on the plan as approved. The approved RMV Ranch Plan provides for the following level of development intensity: 14,000 dwelling units, 3,480,000 square feet of urban activity center uses, 500,000 square feet of neighborhood center uses and 1,220,000 square feet of business park uses. Subsequent to County approval of the Ranch Plan, the County of Orange and RMV entered into a Settlement Agreement with the Endangered Habitats League, Natural Resources Defense Council, Sea and Sage Audubon Society, Laguna Greenbelt, Inc., and Sierra Club. The Settlement Agreement did not change the total number of approved dwelling units or non-residential development for the Ranch Plan, but did alter the location of development and increased the area devoted to open space uses (including infrastructure).

Housing

Orange County in general suffers from a shortage of housing and, specifically, a shortage in affordable housing. SCAG has identified a jobs-housing imbalance in this region. The SOCTIIP build Alternatives that would result in the acquisition of existing housing or the acquisition of areas planned for housing would exacerbate this condition. Therefore, there would be an adverse impact on residential uses as a result of the CC, CC-ALPV, A7C-ALPV, AIO and I-5 Alternatives. The FEC-W, FEC-M and A7C-FEC-M/Preferred Alternatives would not result in an adverse impact on residential uses because they are in areas that do not include existing or planned residential uses.

The No Action Alternatives would not have cumulative impacts on the housing shortage.

ES.8.11.2 Mitigation Measures Related to Land Use

All temporary use and permanent acquisition of right-of-way for the SOCTIIP build Alternatives will be conducted consistent with the requirements of the Uniform Relocation and Assistance Real Property Acquisition Polices Act of 1970, as amended, and California Government Code, Chapter 16, Section 7260, et. seq. Compliance with these Acts for all temporary occupancy and permanent acquisition of property for the build Alternatives is included in measures SE-1 to SE-3, described earlier in Section ES.6.6.3. Those measures would also apply to some of the land use impacts of the SOCTIIP build Alternatives. Mitigation measures LU-1 and LU-2 will, to an extent, reduce adverse impacts of the build Alternatives related to land use. Briefly, these measures require:

LU-1 Design refinements to avoid or minimize impacts to existing land uses, related to the temporary occupancy and/or permanent acquisition of property.

LU-2 Relocating the facility access road and front gate at the TRW Capistrano Test Site (now known as the Northrop Grumman Capistrano Test Site) to minimize disruption and impacts to TRW security and to maintain access to this facility.

ES.8.11.3 Unavoidable Adverse Impacts and CEQA Level of Significance after Mitigation Related to Land Use

All the SOCTIIP build Alternatives and the two No Action Alternatives would result in unavoidable adverse land use impacts related to consistency with adopted land use or land use related plans; impacts to existing land uses and cumulative impacts related to conversion of open space and impacts to residential uses. These would be significant unavoidable adverse impacts under CEQA.

ES.8.12 SUMMARY OF IMPACTS RELATED TO RECREATION RESOURCES

This Section summarizes the potential adverse impacts of the SOCTIIP Alternatives related to recreation resources. Section 4.25 (Affected Environment, Impacts and Mitigation Measures Related to Recreation Resources) in the EIS/SEIR describes the existing conditions, study area and methodology, impacts analysis and mitigation measures related to recreation resources in detail. These potential impacts are summarized in Table ES.6-1.

ES.8.12.1 Adverse Impacts Related to Recreation Resources

All the SOCTIIP build.Alternatives would result in adverse impacts to recreation resources. As shown on Table ES.6-1, depending on the Alternative, these impacts include temporary occupancy and/or permanent acquisition of land from parks and recreation resources; short- and/or long-term adverse noise impacts on recreation uses; short-term adverse air quality impacts on recreation uses and/or long-term adverse impacts on visual resources associated with recreation resources.

The Preferred Alternative will impact San Onofre Sate Beach. (SOSB). The Preferred Alternative extends south through Subunit 1 of SOSB, leased from MCB Camp Pendleton, impacting biological and habitat resources value, and the overall size of the SOSB Subunit 1. No camping sites in the San Mateo Campground would be removed as a result of implementation of the Preferred Alternative, but the Preferred Alternative has visual and aesthetic impacts on the camping experience at the San Mateo Campground. No impacts to the SOSB Trestles Subunit (Subunit 2) are expected as a result of the elevated ramp connecting the Preferred Alternative to I-5. Continued access to Trestles Beach will be provided during and after construction of the Preferred Alternative and, as described in Section 4.25, there will be no changes to sediment and no effect on the quality of the surf. The supply of sediment from San Mateo Creek will be virtually unchanged in the after-project condition with anticipated storm water. Foothill-South will bridge over the creek, allowing water to flow naturally as it does today with the existing I-5 freeway and railroad facilities. No channel improvements or lining will be made to the creek that will alter the quality, function, or sediment flow of the creek. The sediment budget analysis concludes that the supply of bed material load from San Mateo Creek will be virtually unchanged in the after-project condition with the anticipated storm water controls.

The sediment transport analysis was also reviewed by the project coastal engineering consultant, Dave Skelly. Mr. Skelly's review is provided as Attachment 11 of the Response to Comments document. The report reviewed the historical shoreline changes at the mouth of San Mateo Creek and demonstrated that the large cobble and small boulder delta that generate the surf spot are robust features that are not particularly sensitive to changes in beach sands or shoreline position. Based on analysis of the hydraulics and runoff analysis of the management plan, the study concluded that the project will not have a measurable impact on the natural delivery of sediment, therefore not impacting the surfing resources.

Construction activities associated with implementation of the Preferred Alternative could impact Camp Pendleton San Onofre Recreation Beach. Impacts to recreation uses at San Onofre Recreation Beach would relate mostly to noise, access, and dust during construction. These short-term impacts would not change land uses at San Onofre Recreation Beach or military uses at Green Beach.

The Preferred Alternative takes land in The Conservancy. The SOCTIIP Collaborative agreed that the beneficial affects of the Preferred Alternative crossing into the western portion of The Conservancy outweighed the potential impacts. The benefits include: greater habitat connectivity into eastern Orange County; avoidance of high value aquatic resources including wetlands in the Blind Canyon/Gabino Canyon confluence: keeping in close proximity to neighboring development thereby minimizing habitat

fragmentation; and minimization of viewshed impacts to residents in developed areas of San Clemente, including Talega.

Impacts of the No Action Alternatives

The No Action Alternatives would not result in adverse impacts related to recreation resources because these Alternatives would not result in construction or implementation of SOCTIIP infrastructure improvements in the study area. The No Action Alternatives result in significant traffic congestion on I-5 and major arterials and thus will have an adverse impact on access to recreational resources.

Cumulative Adverse Impacts Related to Recreation Resources

When considered with other cumulative projects, the SOCTIIP build Alternatives would contribute to cumulative adverse impacts related to direct and indirect adverse impacts on recreation resources in the study area.

ES.8.12.2 Mitigation Measures Related to Recreation Resources

Mitigation measures R-1 to R-5 to avoid or substantially reduce adverse impacts of the build Alternatives related to recreation resources require:

R-1 Refine the design to avoid or minimize temporary occupancy during construction and permanent acquisition of land currently occupied by or proposed for use by recreation resources.

R-2 Consultation with the affected property owner/operator of recreation resources temporarily occupied or permanently acquired by a build Alternative.

R-3 Negotiations with the owner/operator whose recreation facilities will be permanently acquired to determine appropriate action and/or compensation to mitigate for the permanent acquisition.

R-4 Negotiations with the owner/operator whose recreation facilities will be temporarily occupied during construction to determine appropriate action and or compensation to mitigate for the temporary occupancy.

R-5 During final design, provide for crossings of planned lateral Class I and existing and planned Class II bicycle trails, and hiking and equestrian trails at master planned locations across the road alignments.

ES.8.12.3 Unavoidable Adverse Impacts and CEQA Level of Significance after Mitigation Related to Recreation Resources

The FEC-W, FEC-M, CC, CC-ALPV, A7C-ALPV, A7C-FEC-M/Preferred, AIO and I-5 Alternatives would result in adverse impacts related to recreation resources which cannot be fully mitigated. For these Alternatives, the unavoidable adverse impacts following mitigation would be related to temporary occupancy and permanent acquisition of property, short-term noise, short-term air quality and long-term visual impacts. These impacts would be significant and adverse under CEQA.

The No Action Alternatives would not result in unavoidable adverse impacts related to recreation resources, but the increased traffic congestion associated with the No Action Alternatives will adversely impact the ability of the public to access recreational resources.

ES.8.13 SUMMARY OF IMPACTS RELATED TO FLOODPLAINS, WATERWAYS AND HYDROLOGIC SYSTEMS

This Section summarizes the potential adverse impacts of the SOCTIIP alternatives related to floodplains, hydrology and hydrologic systems. Section 4.8 (Affected Environment, Impacts and Mitigation Measures Related to Floodplains, Hydrology and Hydrologic Systems) in the EIS/SEIR describes the existing conditions, study area and methodology, impacts analysis and mitigation measures related to these resources in detail. These potential impacts are summarized in Table ES.6-1.

ES.8.13.1 Adverse Impacts Related to Floodplains, Waterways and Hydrologic Systems

Potential impacts related to floodplains, waterways and hydrologic systems are addressed through PDFs incorporated in the design of each of the SOCTIIP build Alternatives. These PDFs include EDBs, which are sized to include a contingency volume to attenuate excess flows, from the on-site (roadway) and, therefore, protect downstream natural channels from scour. Structures would be placed within 100-year flood hazard areas; however, flows would be diverted to containment BMPs or rip rapped areas to reduce flow velocity and flooding of waterways. EDBs, BMPs and other water quality measures are described in detail in Section 4.9 in the EIS/SEIR.

All the SOCTIIP build Alternatives incorporate PDFs to prevent and mitigate construction impacts to floodplains, waterways and hydrologic systems. Many of the PDFs also specifically address water quality issues. Construction engineering and design would address construction impacts to floodplains and hydrology which would be incorporated into design and construction plans.

For floodplain encroachment during construction, all the SOCTIIP build Alternatives would result in temporary adverse impacts which would be minimized and addressed with the implementation of a Stormwater Management Plan and Stormwater Pollution Prevention Plan.

The FEC-M and FEC-W Alternatives do not result in floodplain encroachment at the crossings. There are no adverse impacts to residential, non-residential and cropland, risk associated with implementation, natural and beneficial floodplains, support of probable incompatible floodplain development, longitudinal encroachments or to groundwater. There is potential for a minor impact to traffic during flooding at Beach Club Road at San Onofre Creek. There is also a minor impact in flood hazard potential to the existing access road under I-5. The FEC-M and FEC-W Alternatives would not result in scour impacts.

The CC and CC-ALPV Alternatives do not result in impacts to residential, non-residential and cropland, traffic, risk associated with implementation, support of probable incompatible floodplain development or to groundwater. There is potential for adverse impacts for floodplain encroachment at Cañada Chiquita and Segunda Deshecha Cañada. In addition, there is potential adverse impacts due to scouring at Cañada Chiquita and a longitudinal encroachment north of the confluence of Cañada Chiquita and San Juan Creek. However, with the incorporation of PDFs in these Alternatives, the floodplain encroachment and longtitudinal encroachment is minimized. There are also impacts on beneficial floodplain values at Cañada Chiquita and Segunda Deshecha Cañada.

The A7C-ALPV Alternative does not result in impacts to residential, non-residential and cropland, traffic, risk associated with implementation, support of probable incompatible floodplain development, longitudinal encroachment or to groundwater. There are adverse impacts for floodplain encroachment at Cañada Chiquita and Segunda Deshecha Cañada. In addition, there are adverse impacts due to scouring at Cañada Chiquita. There are also impacts on beneficial floodplain values at Cañada Chiquita.

The A7C-FEC-M/Preferred Alternative does not result in impacts to floodplain encroachment, residential, non-residential and cropland, risk associated with implementation, natural and beneficial floodplain values, support of probable incompatible floodplain development or to groundwater. There is a minor impact to flood potential of the Beach Club Road crossing at San Onofre Creek. There is also a minor impact in flood hazard potential to the existing access road under I-5. The A7C-FEC-M/Preferred Alternative ~~would~~ does not result in scour impacts.

The AIO and I-5 Alternatives do not result in impacts to floodplain encroachment, residential, non-residential and cropland, scour, traffic, risk associated with implementation, natural and beneficial floodplain values, longitudinal encroachments, support of probable incompatible floodplain development or to groundwater.

Impacts of the No Action Alternatives

The No Action Alternatives do not propose the construction or implementation of any SOCTIIP infrastructure improvements. Therefore, the hydrologic conditions as they currently exist would not be impacted as a result of any SOCTIIP improvements under the No Action Alternatives. Given the likelihood of development on RMV and elsewhere in the six watersheds, the potential for impacts to the watersheds could be substantial even under the No Action Alternatives (as reflected in the Ranch Plan and the Settlement Agreement). However, with the implementation of federal, state and local regulations, it is anticipated that impacts to these watersheds would be mitigated by individual projects on a project by project basis, as development is implemented. Therefore, under the No Action Alternatives, no adverse SOCTIIP related impacts to floodplains and hydrology are anticipated.

The No Action Alternatives do not result in impacts to floodplain encroachment, residential, non-residential and cropland, scour, traffic, risk associated with implementation, natural and beneficial floodplain values, longitudinal encroachments, support of probable incompatible floodplain development or to groundwater.

Cumulative Impacts Related to Floodplains, Waterways and Hydrologic Systems

Analysis of floodplains and hydrology is performed at a cumulative level. The SOCTIIP study area extends through six regional watersheds, each defined at the location at which its flows into the Pacific Ocean. These watersheds are Aliso Creek, San Juan Creek, Prima Deshecha Cañada, Segunda Deshecha Cañada, San Mateo Creek and San Onofre Creek. These watersheds span parts of Orange, San Diego and Riverside Counties. Therefore, the potential effects of the SOCTIIP Alternatives related to water resources in the study area address the potential for cumulative effects. Runoff from the SOCTIIP build Alternatives would be isolated from local runoff and would be collected and treated in EDBs prior to release to other watercourses. With two exceptions, the hydrologic analysis points had only minor increases in discharge for the future condition. Cañada Gobernadora, which has a tributary of about 22 square kilometers (sq km (8.5 square miles (sq mi)), had a moderate increase in drainage due to future conditions and Segunda Deshecha Cañada characterized by relatively small tributary areas (6 to 7 sq km (2.3 to 2.7 sq mi)), is projected to experience major discharge increases as a result of the cumulative projects, including the SOCTIIP build Alternatives.

Based on the hydrologic data for future watershed conditions, impacts to floodplains were evaluated at selected hydrologic analysis points to determine cumulative effects of the SOCTIIP build Alternatives. Analysis points which underwent an increase in discharge of greater than 10% had additional water surface elevation increases up to 0.8 meters (m, 3 feet (ft). The analysis point at Cañada Gobernadora that resulted in a discharge increase between 5 and 10% had an impact of approximately 0.03 m (0.1 ft). The remainder of the points, which had increases of less than 5%, had water surface elevation impacts of

less than 0.03 m (0.1 ft). As a result of these findings, it is anticipated that the SOCTIIP build Alternatives, in combination with future development, could potentially cause substantial cumulative impacts if unmitigated imperviousness due to future development in watersheds increases more than 10%. However, if increased runoff due to future development is either mitigated (as required by the RWQCB), or if increases in imperviousness are held below the 5% threshold, described above, cumulative impacts to floodplains are less than adverse.

ES.8.13.2 Mitigation Measures Related to Floodplains, Waterways and Hydrologic Systems

The PDFs incorporated in the SOCTIIP build Alternatives include mitigation strategies to address scour, 100-year flood protection, sediment loading/scour, erosion and water quality/erosion. These PDFs are listed below. No further mitigation is proposed for adverse impacts of the SOCTIIP build Alternatives related to floodplains, waterways and hydrologic systems.

PDF-9-1 Reduction of Downstream Effects Caused by Changes in Flow. If changes in velocity or volume of runoff, sediment load or other hydraulic changes due to encroachment, crossings or realignment result in an increased potential for downstream effects in channels, the TCA, or other implementing agency, will implement design features to prevent adverse effects. The features will include one or more of the following (or similar features):

- Modifications to channel lining materials (both natural and man-made), including vegetation, geotextile mats, rock and riprap.
- Energy dissipation devices at culvert outlets.
- Smoothing the transition between culvert outlets/headwalls/wingwalls and channels to reduce turbulence and scour.
- Incorporating retention or detention facilities into designs to reduce peak discharges, volumes and erosive flow.
- Conduct detailed hydrologic engineering design to establish size, capacity, alignment of flood control facilities to protect the site from the 100-year flood level.

PDF-9-2 Concentrated Flow Conveyance Systems. The TCA, or other implementing agency, will implement concentrated flow conveyance systems to intercept and divert surface flows, and convey and discharge concentrated flows with a minimum of soil erosion, both on-site and off-site where applicable. Ditches, berms, dikes and swales will be used to intercept and direct surface runoff to an overside drain or stabilized watercourse.

PDF-9-3 Slope and Surface Protection Systems. The TCA, or other implementing agency, will use surface protection to minimize erosion from completed, disturbed surfaces. Surface protection includes but is not limited to vegetative cover or hard surfacing such as concrete, rock, or rock and mortar.

PDF-9-4 Detention Basins. The TCA, or other implementing agency, will implement EDBs on the SOCTIIP build Alternative to temporarily detain water on the site and allow sediment and particulates to settle out. EDBs will be maintained, monitored and documented per RWQCB and Caltrans requirements and conform to the guidelines set forth in the SWMP. The siting of EDBs requires that sufficient head is available such that water stored in the basin does not cause a backwater condition in the storm drain system, which would limit its capacity. Additionally, high groundwater must be no higher than the bottom elevation of the basin; otherwise, the basin would not drain completely. The siting process also required consideration of sensitive environmental constraints. The EDBs were sited to avoid those areas as well.

PDF-9-5 Biofiltration Swales and Strips (Vegetated Treatment Strips). The TCA, or other implementing agency, will use biofiltration swales and strips, as shown in the RMP, where applicable and in association with EDBs to convey low flow. One of the primary limitations of using bioswales is that they must be used on slopes less than two percent. Due to the terrain and the design of the Alternatives there were very few locations where they could be applied. Bioswales will be maintained, monitored and documented per RWQCB and Caltrans requirements and will conform to guidelines set forth in the SWMP.

PDF-9-6 Infiltration Basins. To the extent feasible or necessary, infiltration basins will be implemented to detain runoff and infiltrate it into the soil to prevent contaminants from impairing the beneficial uses of receiving waters. Infiltration basins will be maintained, monitored and documented per RWQCB and Caltrans requirements and conform to the guidelines set forth in the SWMP.

PDF-9-7 Runoff Management PDFs for the Corridor Alternatives. The build Alternatives include BMPs to control the flow of roadway runoff and treat to the maximum extent practicable (MEP), roadway runoff before it leaves the project site and enters existing water courses or storm drain facilities. PDFs for the SOCTIIP build Alternatives include BMPs such as EDBs and grassy swales. The disturbance and right-of-way limits for the build Alternatives, shown on the detailed maps in Appendix A, include areas for EDBs and other BMPs.

The PDFs consist of both pollution prevention BMPs and treatment BMPs. Pollution prevention BMPs are used to address design phase elements, construction and spill mitigation. Treatment BMPs are used in the design to meet regulatory water quality requirements at specific locations. Both pollution prevention and treatment BMPs are included in the build Alternatives to the MEP. Most of the treatment BMPs, such as EDBs, are designed with a safety factor such that they will function in conditions beyond those prescribed by Caltrans' National Pollutant Discharge Elimination System (NPDES) permit.

PDF-9-8 Prior to completion of final design of the selected alternative, TCA shall obtain approval of the hydrologic methodology and parameters to be analyzed in the Final Hydrologic Technical Report and incorporated into the Final Location Hydraulic Study from affected jurisdictional agencies.

PDF-9-9 Final design will include refinements to ensure that the bridges will be constructed to span the 100-year floodplain without raising the 100-year base floodplain water surface elevation more than 0.3 meter (1.0 foot), or otherwise causing adverse changes in the extent of the floodplain or the potential for erosion.

ES.8.13.3 Unavoidable Adverse Impacts and CEQA Level of Significance after Mitigation Related to Floodplains, Waterways and Hydrologic Systems

The impacts for the CC Alternative to existing floodplain and erosion and sedimentation patterns could be avoided by the implementation of design refinements to the CC Alternative, based on more detailed hydraulic analyses. Such refinements may include shifting the horizontal alignment of the highway to the west such that the embankment did not encroach onto the Cañada Chiquita floodplain. With the incorporation of the PDFs, this impact would be mitigated.

It is anticipated that any possible adverse impacts to floodplain or sedimentation and scour may be avoided. The final design of these crossings, based on more detailed hydraulic analyses, would include PDFs to minimize adverse impacts to the existing floodplain as well as existing erosion and sedimentation patterns. With the incorporation of the design refinements and PDFs, this impact would be mitigated.

The A7C-ALPV Alternatives would result in adverse impacts due to the east-west connector crossing at Cañada Chiquita. The impacts for the A7C-ALPV Alternative to the existing floodplain and potential changes to erosion and sedimentation patterns may be avoided by the implementation of the PDFs and on more detailed hydraulic analyses. These refinements could include adjustments to the highway embankment fill such that the east-west connector crossing did not encroach onto Cañada Chiquita. With the incorporation of the PDFs, this impact would be mitigated.

It is anticipated that the final design of the crossing at Segunda Deshecha Cañada and with more detailed hydraulic analyses conducted as a part of the PDFs, the refinements would minimize adverse impacts to the existing floodplain as well as existing erosion and sedimentation patterns. With the incorporation of the PDFs, this impact would be mitigated.

In summary, with the incorporation of the PDFs, no significant adverse impacts remain under CEQA and there are no unavoidable adverse impacts.

ES.8.14 SUMMARY OF IMPACTS RELATED TO HAZARDOUS MATERIALS AND HAZARDOUS WASTE SITES

This Section summarizes the potential adverse impacts of the SOCTIIP build Alternatives related to hazardous materials and hazardous waste sites. Section 4.17 (Affected Environment, Impacts and Mitigation Measures Related to Hazardous Materials and Hazardous Waste Sites) in the EIS/SEIR describes the existing conditions, study area and methodology, impacts analysis and mitigation measures related to these environmental parameters in detail. These potential impacts are summarized in Table ES.6-1.

ES.8.14.1 Adverse Impacts Related to Hazardous Materials and Hazardous Waste Sites

The potential impacts of the SOCTIIP build Alternatives related to hazardous materials and wastes are related to the potential for disturbance of hazardous materials or wastes sites during construction (military, underground storage tanks, other releases, past pesticide and herbicide use); disruption of utilities during construction (pipelines, waste water treatment plants and electrical substations); disturbance of unknown/undocumented past activities (oil wells, test borings) disturbance of aerially deposited lead or asbestos; and/or construction related hazards including accidental releases, fuel spills, use, storage, handling and transport of hazardous materials and/or the discovery of previously undocumented hazardous contamination.

Impacts of the No Action Alternatives

The No Action Alternatives would not result in impacts related to hazardous materials and waste sites because they do not propose any construction or implementation of SOCTIIP infrastructure improvements in the study area.

Cumulative Impacts Related to Hazardous Materials and Hazardous Waste Sites

Because the SOCTIIP build Alternatives and the other cumulative projects would likely not all be under construction simultaneously and because of existing regulations, the SOCTIIP build Alternatives, when considered with other cumulative projects, would not result in a cumulative short-term adverse impact related to hazardous materials and hazardous waste sites. The potentially long-term adverse impacts of the SOCTIIP build Alternatives related to accidental releases of hazardous materials or wastes would be substantially mitigated based on implementation of existing federal, state and local regulations regarding response and remediation for hazardous materials or wastes spills. Therefore, the SOCTIIP build

Alternatives would not contribute to cumulative adverse impacts related to hazardous materials and hazardous waste sites.

ES.8.14.2 Mitigation Measures Related to Hazardous Materials and Hazardous Waste Sites

All the adverse impacts related to hazardous materials would be mitigated for all the SOCTIIP build Alternatives based on compliance with existing regulations and mitigation measures HM-1 to HM-18. These measures, to avoid or substantially reduce adverse impacts of the SOCTIIP build Alternatives related to hazardous materials and hazardous waste sites, require:

HM-1 Groundwater testing for pesticides, nitrates, metals and petroleum hydrocarbons prior to construction in areas where excavation may extend into groundwater.

HM-2 In areas immediately adjacent to existing roads proposed for construction (I-5, arterials), soil samples will be collected and analyzed for lead concentrations during final design. Any excess contaminated soil would be disposed of consistent with all applicable federal, state and local regulations.

HM-3 Prior to grading in agricultural areas, prepare and implement a soil sampling plan and a worker health and safety plan to identify areas of chemically affected soils.

HM-4 Positively locate abandoned oil wells and test borings and remove any remaining components before grading.

HM-5 Asbestos sampling and notification prior to demolition or renovation of existing bridges, road structures or buildings, consistent with the SCAQMD requirements.

HM-6 Testing, prior to removal of existing thermoplastic or painted traffic stripes proposed for removal on existing roads to assess the level of lead and chromium.

HM-7 Compliance of all construction activities with existing federal, state and local regulations regarding the handling, use, storage and disposal of hazardous materials, including regulations on response in the event of accidental release.

HM-8 If leakage or damage from existing utilities is identified during construction, appropriate containment and remedial measures will be implemented, as necessary, in consultation with the affected utility provider and in compliance with existing local, state and federal regulations.

HM-9 During final design, update the regulatory database report and review the regulatory records for identified sites of concern, such as leaking underground storage tank locations.

HM-10 Coordinate the removal of underground storage tanks by the facility tenant or property owner and regulatory closure would be directed and approved by the applicable local oversight regulatory agency.

HM-11 Prior to construction, conduct a subsurface investigation of the emplaced wastes at Prima Deshecha Landfill, if the selected alternative crosses the Landfill. Any hazardous substances that may pose unacceptable risks to human health or the environment will either be avoided through redesign of the relevant project features or removed and properly disposed of by the responsible party identified during the right-of-way acquisition process. Also, a health, safety

and emergency contingency program will be designed to minimize worker exposure to methane and previously undocumented hazardous materials on the Landfill site.

HM-12 During final design, existing businesses within the disturbance limits for the selected alternative will be evaluated related to hazardous materials concerns to identify areas where soil sampling is warranted.

HM-13 If the selected alternative crosses Camp Pendleton, the Department of the Navy (DON) will be consulted and a review of current United States Environmental Protection Agency (EPA) files will be conducted during final design to evaluate whether National Priorities List (NPL) records indicate that hazardous materials releases have occurred beneath the northwestern part of the Base, which may impact the SOCTIIP build Alternative.

HM-14 The following procedures will be implemented: 1) control and manifesting of hazardous waste generated by construction or maintenance activities; 2) assignment of responsibility for hazardous waste management, spill accountability and hazardous waste disposal; 3) the EPA identification number to be used to manifest hazardous wastes; 4) responsibility for acquisition of required health permits; 5) procedures for management of hazardous wastes stored on Camp Pendleton; 6) assignment of responsibility for any Notices of Violation or other regulatory enforcement actions occurring within the alternative right-of-way during construction or operation.

HM-15 If the selected Alternative traverses the Capistrano Test site, the groundwater well shall be sampled and abandoned in a cooperative effort with TRW.

HM-16 Implement a soil screening program if records of pipeline integrity testing are unavailable.

HM-17 Coordinate with the owner if the final design calls for the relocation of oil cooled and/or lubricated electrical equipment at existing electrical substations.

HM-18 If previously unknown hazardous materials or objects that could contain hazardous materials are discovered during construction, construction personnel will notify the TCA or the implementing agency and implement measures to control and characterize the materials encountered, including notification of hazardous materials emergency response personnel as appropriate.

In addition, measures WW-7 (construction storage) and WW-8 (construction disposal) relate to hazardous materials. Refer to Section ES.6.10.2 for discussion of those measures.

ES.8.14.3 Unavoidable Adverse Impacts and CEQA Level of Significance after Mitigation Related to Hazardous Materials and Hazardous Waste Sites

None of the SOCTIIP build Alternatives would result in adverse impacts related to hazardous materials and hazardous wastes which cannot be mitigated to below a level of significance under CEQA.

ES.8.15 SUMMARY OF IMPACTS RELATED TO PUBLIC SERVICES AND UTILITIES

This Section summarizes the potential adverse impacts of the SOCTIIP Alternatives related to public services and utilities. Section 4.24 (Affected Environment, Impacts and Mitigation Measures Related to Public Services and Utilities) in the EIS/SEIR describes the existing conditions, study area and

methodology, impacts analysis and mitigation measures related to these environmental parameters in detail. These potential impacts are summarized in Table ES.6-1.

ES.8.15.1 Beneficial Effects Related to Public Services and Utilities

I-5 is the major emergency evacuation route for San Onofre Nuclear Generating Station (SONGS), and is the only non-signalized evacuation route between SONGS and I-405 to the north. Ortega Highway, north of SONGS, provides a route from I-5 to the east that is two-lane and non-signalized over most of its length. The SOCTIIP corridor Alternatives would provide an additional evacuation route from I-5, immediately south of San Clemente, to Ortega Highway and to SR-241, north of Ortega Highway and east of I-5. To the north, SR-241 connects with SR-91 to the east, affording access to Riverside and Los Angeles Counties and connects to I-5 and I-405 to the west, providing access to the north and northwest, respectively. The SOCTIIP corridor Alternatives would have the beneficial effect of increasing the speed at which evacuations could be completed and would provide an alternate route should I-5 become impassable.

The AIO and I-5 Alternatives would have a slight positive effect related to emergency evacuation because the additional lanes on these Alternatives would increase the speed at which evacuations could be completed. However, these Alternatives would not provide an alternate evacuation route to I-5 from San Clemente north.

Implementation of the Preferred Alternative will require the relocation of a number of utility poles and towers owned by San Diego Gas and Electric (SDG&E) and Southern California Edison (SCE). The new configuration of utilities will result in an overall reduction in the number of poles and towers, with a resulting reduction in the visual clutter caused by utility poles in the study area today. The new utility facilities will replace older, and in some cases antiquated facilities, thereby facilitating maintenance and ensuring the same or improved reliability compared with existing conditions.

ES.8.15.2 Adverse Impacts Related to Public Services and Utilities

The CC, CC-ALPV, A7C-ALPV and AIO Alternatives result in an adverse impact after mitigation to solid waste disposal services because they reduce the capacity of Prima Deshecha Landfill. The I-5 and CC Alternatives result in an adverse impact after mitigation to solid waste disposal services because of the generation and disposal of excess soil and rock material.

During construction, the CC, CC-ALPV and A7C-ALPV Alternatives will result in blocked access in the Prima Deshecha Sanitary Landfill. These three Alternatives will also result in the need to relocate some existing facilities at the Prima Deshecha Landfill. These impacts will not be adverse after mitigation.

The CC Alternative results in adverse impacts after mitigation to schools because of temporary and permanent acquisition of land at San Clemente High School and Ole Hanson Elementary School. The AIO Alternative results in an adverse impact after mitigation to schools because of temporary and permanent acquisition of land at Las Flores Elementary School. The I-5 Alternative results in an adverse impact after mitigation to schools because of temporary and permanent acquisition of land at Mission Viejo High School, Rancho Capistrano School, San Clemente High School, Saint George's Episcopal Academy and San Juan Elementary School.

The I-5 Alternative results in adverse impacts after mitigation to public services facilities because of temporary loss of use and permanent acquisition of property at Buccheim Fields.

During operations and construction, the FEC-M, FEC-W, CC, CC-ALPV, A7C-FEC-M/Preferred and A7C-ALPV Alternatives will result in adverse impacts related to increased potential for wildfires and blocked access to the fire road grid. This impact will not be adverse after mitigation.

The FEC-W, FEC-M and A7C-FEC-M/Preferred Alternative will result in the need for non-federal law enforcement on the corridor segments on Camp Pendleton. This impact will not be adverse after mitigation.

All the SOCTIIP build Alternatives have the potential to result in damage to utilities or temporary interruptions of utilities services during construction. It is anticipated that the Preferred Alternative would not result in an interruption to the provision of electrical power during or after construction. These potential impacts will not be adverse after mitigation.

All the SOCTIIP build Alternatives will result in the need to relocate/add high voltage electric towers and large utility poles. This impact will not be significant after mitigation.

The FEC-W, FEC-M and A7C-FEC-M/Preferred Alternative will result in the need for temporary use and permanent acquisition of part of a percolation pond on Camp Pendleton. This impact can be substantially mitigated.

As shown in Table ES.6-1, all the SOCTIIP build Alternatives will result in the temporary loss of use and permanent acquisition of public services facilities and utilities properties and facilities. Depending on the alternatives, these include electric substation properties, schools, public service facility property, water treatment facility property and sports field property. These impacts can be substantially mitigated.

The CC Alternative will result in increased response times for emergency services providers. This impact can be substantially mitigated.

All the corridor build Alternatives will result in reduced access to medical emergencies during construction. This impact can be substantially mitigated.

Emergency Evacuation Benefits

I-5 is the major emergency evacuation route for SONGS, and is virtually the only non-signalized evacuation route between SONGS and I-405 to the north. Ortega Highway, north of SONGS, provides a route from I-5 to the east that is two lanes and non-signalized over most of its length. The FEC-W- would provide an additional evacuation route from I-5, immediately south of San Clemente, to Ortega Highway and to State Route 241 (SR-241), north of Ortega Highway and east of I-5. To the north, SR-241 connects with State Route 91 to the east, affording access to Riverside and Los Angeles Counties, and connects to I-5 and I-405 to the west, providing access to the north and northwest, respectively. The Preferred Alternative would have the beneficial effect of increasing the speed at which evacuations could be completed and would provide an alternate route should I-5 become impassable for some reason.

Impacts of the No Action Alternatives Related to Public Services and Utilities

The No Action Alternatives would not result in adverse impacts related to public services and utilities because these Alternatives would not result in construction or implementation of any SOCTIIP infrastructure improvements in the study area.

Cumulative Impacts Related to Public Services and Utilities

None of the SOCTIIP build Alternatives, after mitigation, would contribute to cumulative adverse impacts related to wildfires, fire and emergency medical services, law enforcement services or utilities. The CC, CC-ALPV, A7C-ALPV, AIO and I-5 Alternatives, when considered with other cumulative projects in the area, would contribute to cumulative adverse impacts related to solid waste disposal and the reduction of disposal capacity in area landfills, even with mitigation. The CC, AIO and I-5 Alternatives, when considered with other cumulative projects in the area, would contribute to a cumulative adverse impact on schools even with mitigation. The SOCTIIIP contribution to this cumulative impacts is related to the acquisition of land from schools for these Alternatives. The I-5 Alternative would result in an adverse impact on public services even with mitigation. Under the I-5 Alternative, the contribution is related to acquisition of part of Buccheim Fields. However, these types of public facilities impact have not been identified for other projects in the SOCTIIP study area. Therefore, the I-5 Alternative will not contribute to cumulative adverse impacts related to public services.

ES.8.15.3 Mitigation Measures Related to Public Services and Utilities

Mitigation measures PS-1 to PS-16 and U-1 to U-3 to reduce adverse impacts of the build Alternatives related to public services and utilities require:

PS-1 Final design refinement to avoid or minimize acquisition of land occupied by public services and utilities.

PS-2 During construction, installation of warning signs in high fire risk areas.

PS-3 During operation, installation of warning signs in high fire risk areas.

PS-4 Installation of emergency call boxes in areas of high fire hazard.

PS-5 During construction, maintenance of access to the existing fire road grid.

PS-6 During final design, maintenance of access to the existing fire road grid.

PS-7 During construction, implementation of required fuel modification techniques.

PS-8 During final design, coordination of the addition of OPTICON or other traffic pre-emption devices with the City of San Clemente.

PS-9 During construction, coordination of temporary ramp closures and detour plans with fire, emergency medical and law enforcement providers.

PS-10 Prior to operation, transfer of concurrent legal jurisdiction from the federal government to the State for segments of the road through MCB Camp Pendleton.

PS-11 Prior to final design of alternatives that cross Prima Deshecha Landfill, consultation with Landfill engineers to minimize impacts to Landfill capacity and life span.

PS-12 During final design of alternatives that cross Prima Deshecha Landfill, incorporation of access routes within the site.

PS-13 Prior to construction of an alternative that generates excess fill, contractor will offer fill for use in other development projects or as daily cover for landfills.

PS-13A Excess fill will not be disposed of at MCB Camp Pendleton landfills without approval of MCB Camp Pendleton.

PS-14 Negotiation with schools or schools districts on compensation for permanent acquisition of property.

PS-15 Negotiation with schools or schools districts on compensation for temporary use of property.

PS-16 Negotiation with public facilities owners on compensation for temporary use and/or permanent acquisition of property.

U-1 As early as possible during final design, consultation with affected utilities to reduce potential utility impacts.

U-2 Negotiation with utilities owners on compensation for temporary use and/or permanent acquisition of property.

U-3 Negotiation with the Department of the Navy on compensation or appropriate action to reduce the effect of encroachment on MCB Camp Pendleton.

ES.8.15.4 Unavoidable Adverse Impacts and CEQA Level of Significance after Mitigation Related to Public Services and Utilities

The following SOCTIIP build Alternatives would result in unavoidable long-term direct adverse impacts related to public services and utilities which cannot be fully mitigated. These impacts would be significant and adverse under CEQA:

- CC Alternative: Reduction in capacity and lifespan of Prima Deshecha Sanitary Landfill; generation of excess soil and rock material; and permanent acquisition and temporary use of property at San Clemente High School and Ole Hanson Elementary School.
- CC-ALPV Alternative: Reduction in capacity and lifespan of Prima Deshecha Sanitary Landfill.
- A7C-ALPV Alternative: Reduction in capacity and lifespan of Prima Deshecha Sanitary Landfill.
- AIO Alternative: Reduction in capacity and lifespan of Prima Deshecha Sanitary Landfill; and permanent acquisition and temporary use of property at Las Flores Elementary School.
- I-5 Alternative: Generation of excess soil and rock material; and permanent acquisition and temporary use of property at Mission Viejo High School, Rancho Capistrano School, San Clemente High School, Saint Georges's Episcopal Academy, San Juan Elementary School and the Buccheim Fields.

ES.8.16 SUMMARY OF IMPACTS RELATED TO EARTH RESOURCES

This Section summarizes the potential adverse impacts of the SOCTIIP Alternatives related to earth resources. Section 4.24 (Affected Environment, Impacts and Mitigation Measures Related to Earth Resources) in the EIS/SEIR describes the existing conditions, study area and methodology, impacts analysis and mitigation measures related to earth resources in detail. These potential impacts are summarized in Table ES.6-1.

ES.8.16.1 Adverse Impacts Related to Earth Resources

Being located in southern California, the SOCTIIP study area is in a seismically active region and is potentially subject to seismically related geologic hazards. These hazards are related to the principal regional active faults in the region, which include the San Andreas, Elsinore, San Jacinto and Newport-Inglewood Faults, and the San Joaquin Hills Blind Thrust Fault.

The alignments of the SOCTIIP build Alternatives cross several bedrock faults. However, none of these faults is known to be active, which is defined as having experienced displacement within Holocene geologic time (defined as approximately the most recent 11,000 years). No active faults are known to cross any of the SOCTIIP build Alternatives and no Earthquake Fault Zones have been mapped along the bedrock faults in the study area. Therefore, the potential for a fault rupture hazard associated with the construction and/or operation of any of the SOCTIIP build Alternatives is considered remote.

Due to the proximity of seismically active regional faults, the potential for strong ground shaking and ground rupture in the study area cannot be reduced, but the damage potential can be substantially lessened through incorporation of appropriate design and construction techniques. Final design and construction of all the SOCTIIP build Alternatives would incorporate geotechnical recommendations and current codes and practices relative to the potential for ground motion. Therefore, although the potential for damage due to seismic shaking under all the SOCTIIP build Alternatives cannot be precluded, that potential would be reduced to normal levels for this type of project as a result of design and construction features.

The analysis of the SOCTIIP build Alternatives related to earth resources also considered a wide range of other potential adverse impacts, including liquefaction, landslides, differential compaction/seismic settlement, tsunami, seiches, flooding, changes in groundwater levels, disposal of excavated material, percolation of waste material, mudflows, unstable cut and fill slopes, collapsible and expansive soils, trench wall stability, erosion of graded areas, extraction of groundwater, gas, oil and geothermal energy, hydrocompaction and peat oxidation, lava flow and ash flow. The SOCTIIP build Alternatives would not result in adverse impacts in the majority of these categories because either these conditions do not exist in the study area or the detailed geotechnical studies for designing the build Alternatives avoid the potential for effects related to these geotechnical conditions.

During construction, the SOCTIIP build Alternatives would result in adverse impacts related to temporary lowering of groundwater levels, impacts on landfills associated with disposal of excavated materials and potential for unstable cut and fill slopes.

Impacts of the No Action Alternatives Related to Earth Resources

The No Action Alternatives would not result in adverse impacts related to earth resources because these Alternatives do not propose any construction or implementation of any SOCTIIP infrastructure improvements in the study area.

Cumulative Impacts Related to Earth Resources

The SOCTIIP build Alternatives and other cumulative projects have similar impacts related soils and geotechnical conditions. These impacts would be substantially mitigated or avoided for the SOCTIIP and other projects through project mitigation measures and standard design and construction practices. Therefore, because the impacts of the SOCTIIP build Alternatives and other cumulative projects on earth resources would be substantially mitigated or avoided, no cumulative adverse impacts related to earth resources are anticipated.

Grading for the SOCTIIP build Alternatives, when considered with the other cumulative project grading (including RMV) could produce indirect cumulative impacts associated with construction noise, air quality, water quality, drainage and altered landscape form. Refer to Sections ES.6.8, ES.6.7, ES.6.6, and ES.6.10 for discussion of these potential cumulative impacts.

ES.8.16.2 Mitigation Measures Related to Earth Resources

Mitigation measures G-1 to G-5 to reduce the adverse impacts of the SOCTIIP build Alternatives related to earth resources require:

G-1 A design level geotechnical report will be prepared for the selected alternative.

G-2 Side slopes shall be designed and graded to minimize surface erosion.

G-3 Native vegetation will be planted to reduce erosion and slope instability.

G-4 A quality assurance/quality control plan will be maintained during construction.

G-5 A detailed review will be made to locate all groundwater wells within the project footprint.

ES.8.16.3 Unavoidable Adverse Impacts and CEQA Level of Significance after Mitigation Related to Earth Resources

The construction of the SOCTIIP build Alternatives would result in temporary adverse impacts associated with temporary lowering of groundwater levels, increased disposal of waste material and unstable cut and fill slopes. These impacts can be substantially mitigated and are not considered unavoidable adverse impacts after mitigation. These impacts can be mitigated to below a level of significance under CEQA.

The A7C-ALPV Alternative would result in unavoidable permanent adverse impacts to a mapped groundwater spring located 0.75 km (0.5 mi) south of Ortega Highway and the relocation of a well in the SOCTIIP study area. These impacts would be significant and adverse under CEQA.

None of the SOCTIIP build Alternatives results in adverse impacts after mitigation related to earthquake damage, destruction of a unique geologic feature, exposure of people or structures to an increased hazard of landslide or mudslide, exposure of structures to potential damage from expansive or collapsible soil, increased soil erosion above natural conditions or exposure of structures to a potential for distress due to foundation settlement or subsidence.

ES.8.17 SUMMARY OF IMPACTS RELATED TO PALEONTOLOGICAL RESOURCES

This Section summarizes the potential beneficial effects and adverse impacts of the SOCTIIP alternatives related to paleontological resources. Section 4.23 (Affected Environment, Impacts and Mitigation Measures Related to Paleontological Resources) in the EIS/SEIR describes the existing conditions, study area and methodology, impacts analysis and mitigation measures related to paleontological resources in detail. These potential impacts are summarized in Table ES.6-1.

ES.8.17.1 Adverse Impacts and Beneficial Effects Related to Paleontological Resources

Beneficial effects of the SOCTIIP build Alternatives include new information made available to scientists, educators and the general public as a result of the recovery of fossils as part of the construction

of the SOCTIIP build alternatives. This information could include new data on the evolutionary relationships and developmental trends among organisms, biostratigraphic information on the age of rock units or sedimentary strata, the depositional history of the region and the timing of geologic events, development of biological communities, interactions between paleobotanical and paleozoological biotas, geographic restrictions of past biota and unusual or spectacular circumstances in the history of life.

Table ES.6-1 summarizes the direct adverse impacts of the SOCTIIP build and No Action Alternatives on paleontological resources in terms of the number of formations, by sensitivity, which would be impacted by each Alternative. During construction, there is potential for the destruction of fossils (non-renewable, limited resources), damage to fossils during grading, destruction of rock units (non-renewable, limited resources) in the study area, loss of contextual data associated with fossils and loss of associations between fossils. During operations, potential indirect adverse impacts are associated with the provision of access to currently inaccessible areas of Orange County, thereby increasing human presence and potential for damage to paleontological resources and/or unauthorized collecting of resources.

Impacts of the No Action Alternatives Related to Paleontological Resources

The No Action Alternatives would not result in adverse impacts related to paleontological resources because these Alternatives would not result in construction or implementation of any SOCTIIP infrastructure improvements in the study area.

Cumulative Impacts Related to Paleontological Resources

The destruction of fossils and geologic rock units under the SOCTIIP build Alternatives would contribute to a cumulative adverse impact because these non-renewable records of ancient life would become permanently unavailable. In assessing cumulative impacts, the quantity of native rock and fossils already unavailable for study in Orange County due to existing development was considered in conjunction with proposed cumulative projects in the area. The SOCTIIP build Alternatives, when considered with other cumulative projects, would contribute to a cumulative adverse impact on paleontological resources in the area. However, because the contribution of the SOCTIIP build Alternatives to this cumulative impact would be very small and would be ~~partially~~ mitigated, the incremental contribution of the SOCTIIP Alternatives after mitigation would not substantially increase the total cumulative adverse impact on paleontological resources in Orange County.

ES.8.17.2 Mitigation Measures Related to Paleontological Resources

Mitigation measures P-1 to P-3 to reduce the adverse impacts of the SOCTIIP build Alternatives related to paleontological resources require:

P-1 An Orange County Certified (OCC) Paleontologist will be retained to conduct pregrading salvage of any significant exposed fossils prior to construction.

P-2 An OCC Paleontologist shall be retained to establish procedures for monitoring during grading.

P-3 Construction monitoring will be conducted during all construction activities which involve soil disturbance.

ES.8.17.3 Unavoidable Adverse Impacts and CEQA Level of Significance after Mitigation Related to Paleontological Resources

None of the SOCTIIP build Alternatives would result in adverse impacts related to paleontological resources which cannot be fully mitigated. Therefore, there would be no significant adverse impacts to paleontological resources under CEQA as a result of the SOCTIIP build Alternatives.

ES.8.18 SUMMARY OF IMPACTS RELATED TO HISTORIC AND ARCHEOLOGICAL RESOURCES

This Section summarizes the potential beneficial effects and adverse impacts of the SOCTIIP alternatives related to historic and archeological resources. Section 4.16~~23~~ (Affected Environment, Impacts and Mitigation Measures Related to Historic and Archeological Resources) in the EIS/SEIR describes the existing conditions, study area and methodology, impacts analysis and mitigation measures related to these resources in detail. These potential impacts are summarized in Table ES.6-1.

ES.8.18.1 Adverse Impacts Related to Historic and Archeological Resources

Potential impacts on archeological resources include damage or destruction of resources during construction. In the long-term, improved public access to the study area could result in adverse impacts on archeological resources associated with vandalism and unauthorized resource collecting. Table ES.6-1 summarizes the potential for adverse impacts of the SOCTIIP build Alternatives on archeological resources in terms of the total number of archeological resources potentially impacted by each Alternative.

Potential impacts on historic resources include damage or destruction of the resource during construction. In the long-term, improved public access to the study area could result in adverse impacts on historic resources associated with vandalism and unauthorized resource collecting. Table ES.6-1 summarizes the potential impacts of the SOCTIIP build Alternatives on historic resources, in terms of the total number of archeological resources potentially impacted by each Alternative.

Impacts of the No Action Alternatives

The No Action Alternatives would not result in adverse impacts on historic and archeological resources because they do not propose any construction or implementation of SOCTIIP infrastructure improvements in the study area.

Cumulative Adverse Impacts on Historic and Archeological Resources

The SOCTIIP build Alternatives would contribute to cumulative adverse impacts on historic and archeological resources when considered with the adverse cultural resources impacts of other cumulative projects in the study area.

ES.8.18.2 Mitigation Measures Related to Historic and Archeological Resources

Mitigation measures AR-1 to AR-4 to reduce the adverse impacts of the SOCTIIP build Alternatives related to archeological resources require:

AR-1 Prior to construction, conduct subsurface test level investigations (with Native American monitoring) of sites potentially eligible for listing on the National Register of Historic Places.

AR-2 Prior to construction, ~~conduct data recovery of~~complete a suitable historic property treatment plan for eligible ~~archeological~~ cultural resources in the project disturbance limits, including Native American monitoring.

AR-3 Prior to construction, acquire the services of an Orange County Certified archeologist and prepare a monitoring plan for implementation during construction, including Native American monitoring.

AR-4 Investigate design options in the vicinity of the Village of Panhe which could assist in reducing impacts to this resource.

Mitigation measures HR-1 to HR-5 to reduce the adverse impacts of the SOCTIIP build Alternatives related to historic resources require:

HR-1 Recordation of National Register of Historic Places eligible or listed historic resources to the Historic Buildings Survey/Historic American Engineering Record standards.

HR-2 Create a local display of the history and construction of historic resources removed by the SOCTIIP build Alternative.

HR-3 Create a website to provide information on historic resources removed by the SOCTIIP build Alternative.

HR-4 Salvage historical elements or fittings for either reuse or display.

HR-5 Mitigate impacts on resources that are retained, consistent with The Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings.

ES.8.18.3 Unavoidable Adverse Impacts and CEQA Level of Significance after Mitigation Related to Historic and Archeological Resources

The archaeological and historic resources identified in the disturbance limits are considered to be potentially substantially adversely impacted by implementation of the SOCTIIP build Alternatives. All the SOCTIIP build Alternatives are assumed to result in potentially substantial adverse impacts related to archaeological and historic resources that cannot be fully mitigated. As a result, all the SOCTIIP build Alternatives are assumed to result in potentially significant adverse impacts under CEQA related to ~~archaeological and historic~~cultural resources that cannot be mitigated to below a level of significance. Impacts to the sites within RMV have been determined to be mitigated to below a level of significance. The Preferred Alternative does not adversely affect historic resources.

ES.8.19 SUMMARY OF IMPACTS RELATED TO SECTION 4(F) RESOURCES

Pursuant to Section 4(f) of the United States Department of Transportation Act (49 U.S.C. 303(c)), the Secretary of Transportation may approve a transportation program or project which:

> "requir[es] the use of 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 (as determined by the Federal, State, or local officials having jurisdiction over the park, area, refuge, or site) only if:
>
> 1. there is no prudent and feasible alternative to using that land; and

2. the program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use."

The regulations interpreting Section 4(f) state that "... [a]ny use of lands from a Section 4(f) property shall be evaluated early in the development of the action when alternatives to the proposed action are under study" (23 C.F.R. 771.135(b)). Use of a Section 4(f) property occurs "(i) When land is permanently incorporated into a transportation project (ii) When there is a temporary occupancy of land that is substantial in terms of Section 4(f) preservationist purposes... or (iii) When there is a constructive use of the land. Constructive use occurs when the transportation project does not incorporate land from a section 4(f) resource, but the project's proximity impacts are so severe that the protected activities, features, or attributes that qualify a resource for protection under section 4(f) are substantially impaired. Substantial impairment occurs only when the protected activities, features or attributes of the resource are substantially diminished."(23 C.F.R. 771.135(p)). Section 4(f) applies to historic properties and archeological resources only when the resource is included on, or eligible for, the National Register of Historic Places (NRHP). Section 4(f) applies to NRHP eligible and listed archeological sites when those resources are important for preservation in place (23 C.F.R. 771.135[g][2]).

As summarized in Table ES.6-1, the FEC-W and FEC-M Alternatives will result in the use of parts of the following Section 4(f) recreation resources: San Onofre State Beach (SOSB) and the proposed San Juan Creek Regional Park, San Juan Creek Trail and Cristianitos Trail. These Alternatives may result in the use of one NRHP eligible historic resource, the San Mateo Archaeological District (SMAD) and its component sites, and four potentially eligible archeological sites.

The A7C-FEC-M/Preferred Alternatives will result in the use of parts of the following Section 4(f) recreation resources: San Onofre State Beach (SOSB) and the proposed San Juan Creek Regional Park and San Juan Creek Trail. These Alternatives may result in the use of one NRHP eligible historic resource, the SMAD and its component sites, and four potentially eligible archeological sites. However, Section 4(f) does not apply to SOSB pursuant to legislation enacted by Congress (P.L. No. 106-398, §2881).

The CC Alternatives will result in the use of parts of the following Section 4(f) recreation resources: San Juan Capistrano Open Space and Trails, Ole Hanson Elementary School Sports Fields, San Clemente High School Sports Fields, San Clemente State Beach, SOSB and the proposed San Juan Creek Regional Park, San Juan Creek Trail extension and Prima Deshecha Trail extension. The CC Alternatives may result in the use of one NRHP listed and seven NRHP eligible historic resources and four potentially eligible archeological sites.

The CC-ALPV Alternatives will result in the use of parts of the following Section 4(f) recreation resources: San Juan Capistrano Open Space and Trails and the proposed San Juan Creek Regional Park, San Juan Creek Trail extension and Prima Deshecha Trail extension. These Alternatives may result in the use of four potentially NRHP eligible archeological sites.

The A7C-ALPV Alternatives will result in the use of parts of the following Section 4(f) recreation resources: proposed San Juan Creek Regional Park, San Juan Creek Trail extension and Prima Deshecha Trail extension. These Alternatives may result in the use of four potentially NRHP eligible archeological sites.

The AIO Alternative will result in the use of parts of the following Section 4(f) recreation resources: Las Flores Elementary School Sports Fields, San Juan Capistrano Open Space and Trails, the proposed San Juan Creek Regional Park, San Juan Creek Trail extension, San Juan High School Sports Fields and

Prima Deshecha Trail. The AIO Alternative may result in the use of three potentially NRHP eligible archeological sites.

The I-5 Alternative will result in the use of parts of 16 Section 4(f) recreation resources, one NRHP listed and seven NRHP eligible historic resources, and one potentially NRHP eligible archeological site.

ES.8.20 SUMMARY OF IMPACTS RELATED TO OTHER PARAMETERS

The EIS/SEIR evaluated the potential impacts of the SOCTIIP alternatives related to several other parameters which are summarized in Table ES.6-1 and are described briefly in this Section.

ES.8.20.1 Summary of Impacts Related to Farmland

This Section summarizes the potential beneficial effects and adverse impacts of the SOCTIIP alternatives related to farmland. Section 4.3 (Affected Environment, Impacts and Mitigation Measures Related to Farmland) in the EIS/SEIR describes the existing conditions, study area and methodology, impacts analysis and mitigation measures related to these resources in detail.

Adverse Impacts of the SOCTIIP Alternatives Related to Farmland

Impacts to farmland are defined as either impacts to rated agricultural resources or agricultural preserves. Rated agricultural resources are lands categorized on the California Important Farmland Map as Prime, Unique or of Statewide Importance. Agricultural preserves are lands that have been limited to open space or agricultural uses by the land owner in order to receive property tax reductions on the land. All the SOCTIIP build Alternatives except the I-5 Alternative would result in substantial adverse impacts to farmland. This occurs because of the farmland rating of the land taken, even though the total acreage of rated farmland taken is not substantial (15.07 acres for the Preferred Alternative).

The No Action Alternatives would not result in adverse impacts to agricultural soils and resources because these Alternatives do not propose construction or implementation of any SOCTIIP infrastructure improvements in the study area.

Cumulative Adverse Impacts Related to Farmland

Some of the last remaining agricultural resources in Orange County are in the SOCTIIP study area on RMV. These activities will be substantially reduced with The Ranch Plan. In addition, agricultural activities are conducted on several leased parcels on MCB Camp Pendleton. Agricultural soils are an irretrievable non-renewable resource and conversion of these lands to non-agricultural uses would contribute to an increasing cumulative loss of this resource as a result of the SOCTIIP build Alternatives and other cumulative projects in the area. The County determined that RMV could maintain the same number of cattle, therefore the Preferred Alternative will not have a cumulative impact on RMV grazing on non-rated soils.

Mitigation Measures and Commitments Related to Farmland

Mitigation measures AG-1 to AG-3 to reduce adverse impacts of the SOCTIIP build Alternatives related to farmland and agricultural resources require:

AG-1 Finalize the realignment of ranch access roads on RMV during final design of the selected Alternative.

AG-2 Relocation of any corrals and/or windmills in the disturbance limits prior to construction.

AG-3 Provision of all weather access to the existing agricultural operations on Camp Pendleton.

The following commitment is an additional action intended to coordinate construction with ongoing agricultural operations on RMV during construction:

AGC-1 Notification to existing operations on RMV prior to the initiation of construction

Unavoidable Adverse Impacts and CEQA Level of Significance After Mitigation Related to Farmland

The FEC-M, FEC-W, CC, CC-ALPV, A7C-FEC-M/Preferred, A7C-ALPV and AIO Alternatives would result in adverse impacts related to farmland which cannot be fully mitigated. For these Alternatives, the unavoidable adverse impacts following mitigation would be related to the conversion of farmland to a non-agricultural use, conflicts with zoning for agricultural use or Williamson Act contract and/or changes in the environment which could result in conversion of farmland to a non-agricultural use. These impacts would be significant and adverse under CEQA. The I-5 and No Action Alternatives would not result in adverse impacts related to agricultural resources.

ES.8.20.2 Summary of Impacts Related to Pedestrian and Bicycle Facilities

This Section summarizes the potential beneficial effects and adverse impacts of the SOCTIIP alternatives related to pedestrian and bicycle facilities. Section 4.5 (Affected Environment, Impacts and Mitigation Measures Related to Pedestrian and Bicycle Facilities) in the EIS/SEIR describes the existing conditions, study area and methodology, impacts analysis and mitigation measures related to these facilities in detail.

Adverse Impacts Related to Pedestrian and Bicycle Facilities

Temporary trail, bikeway and sidewalk closures as a result of construction of the SOCTIIP build Alternatives are listed in Table ES.6-1. Trail, bikeway and sidewalk closures are necessary when access cannot be accommodated during construction without jeopardizing public safety. All the SOCTIIP build Alternatives would also result in permanent acquisition along certain trails. In addition, they would result in temporary air quality impacts during construction on trails. All the SOCTIIP corridor Alternatives result in permanent visual impacts on trails. Three proposed regional trails would be crossed by some of the alignments of the SOCTIIP corridor Alternatives. The proposed San Juan Creek Trail extension, proposed Cristianitos Trail and proposed Prima Deshecha Trails are regional riding and hiking trails shown in the County of Orange Master Plan of Regional Riding and Hiking Trails and in the County of Orange General Plan. Because these trails are proposed and no specific alignments have been identified for these trails, it is not possible to identify site specific impacts of the SOCTIIP corridor Alternatives on these trails. However, any permanent impacts which would divide a trail and create a barrier towards continuous travel on the trail would be an adverse impact.

As shown in Table ES.6-1, some existing and proposed trails may experience short-term adverse air quality impacts during construction of the SOCTIIP build Alternatives.

Impacts of the No Action Alternatives Related to Pedestrian and Bicycle Facilities

The No Action Alternatives would not impact pedestrian and bicycle facilities because they do not propose construction or implementation of any SOCTIIP infrastructure improvements.

Cumulative Impacts Related to Pedestrian and Bicycle Facilities

Because the trail system has been affected in the past by other uses which affect the continuity of the trail system, adverse impacts of the SOCTIIP build Alternatives without mitigation would be considered to contribute to a cumulative adverse impact on trail continuity in south Orange County. Accommodation for trail crossings is included in the mitigation for the SOCTIIP build Alternatives which cross proposed and existing trails. Because the SOCTIIP build Alternatives include provisions to accommodate trails, they would not result in cumulative adverse impacts to pedestrian and bicycle facilities.

Mitigation Measures Related to Pedestrian and Bikeway Facilities

Mitigation Measures R-1 to R-5 to reduce adverse impacts of the SOCTIIP build Alternatives related to pedestrian and bicycle facilities require:

R-1 Design refinement to avoid the temporary occupancy and/or permanent acquisition of recreation resources property.

R-2 Consult with the property owner/operator of recreation resources temporarily occupied or permanently acquired by a build Alternative; identify and implement opportunities to protect recreation resources in place; identify and implement opportunities to replace lost recreation facilities within the existing recreation property; and combine compensation and protection/modification of affected recreation resources to comply with the Uniform Relocation Assistance Act and Real Property Acquisition Act.

R-3 Negotiate with the owner/operator whose recreation facilities will be permanently acquired to determine appropriate action and/or compensation to mitigate for the permanent acquisition.

R-4 Negotiate with the owner/operator whose recreation facilities will be temporarily removed during construction to determine appropriate action and or compensation to mitigate for the temporary use.

R-5 During final design, accommodate planned lateral Class I and existing and planned Class II bicycle trails, as well as hiking and equestrian trails at master planned locations across the road alignments.

Unavoidable Adverse Impacts and CEQA Level of Significance After Mitigation Related to Pedestrian and Bikeway Facilities

Long-term impacts to bicycle and pedestrian facilities include permanent visual impacts to vistas along trails and permanent acquisition of trails. No long-term impacts are anticipated to occur at on-road pedestrian and bicycle facilities because these facilities occur along roads that would be provided either underpasses or overpasses during operation of the SOCTIIP build Alternatives. The facilities are adjacent to roads and already have noise and air quality impacts and obstructed views. Therefore, no adverse air quality, noise or visual impacts to on-road pedestrian and bicycle facilities are anticipated to occur. Therefore, there would be no significant adverse impacts under CEQA related to pedestrian and bicycle facilities after mitigation, except for visual impacts to vistas along trails and permanent acquisition of trails.

ES.8.20.3 Summary of Impacts Related to Wild and Scenic Rivers

There are no wild and scenic rivers in the SOCTIIP study area. Therefore, the SOCTIIP Alternatives would not result in any impacts on wild and scenic rivers. Section 4.13 (Affected Environment, Impacts and Mitigation Measures Related to Wild and Scenic Rivers) in the EIS/SEIR describes the existing conditions, study area and methodology, impacts analysis and mitigation measures related to wild and scenic rivers in detail.

ES.8.20.4 Summary of Impacts Related to Coastal Barriers

There are no coastal barriers in the SOCTIIP study area. Therefore, the SOCTIIP Alternatives would not result in any impacts to coastal barriers. Section 4.14 (Affected Environment, Impacts and Mitigation Measures Related to Coastal Barriers) in the EIS/SEIR describes the existing conditions, study area and methodology, impacts analysis and mitigation measures related to coastal barriers in detail.

ES.8.20.5 Summary of Impacts Related to the Coastal Zone

This Section summarizes the potential adverse impacts of the SOCTIIP Alternatives related to the Coastal Zone. Section 4.15 (Affected Environment, Impacts and Mitigation Measures Related to the Coastal Zone) in the EIS/SEIR describes the existing conditions, study area and methodology, impacts analysis and mitigation measures related to the Coastal Zone in detail.

Impacts Related to the Coastal Zone

The FEC-W, FEC-M, CC, A7C-FEC-M/Preferred and I-5 Alternatives are in the coastal zone and may require a CDP (California) and a consistency certification, pursuant to the California Coastal Management Program (CCMP) (Federal). The CC-ALPV, A7C-ALPV, AIO and the No Action Alternatives would not require a CDP because they are not in the ~~c~~Coastal ~~z~~Zone~~.~~; however, if the CC-ALPV, A7C-ALPV or AIO Alternative is selected as the Preferred Alternative and it is determined the Alternative would affect coastal resources, a costal consistency certification would be required. If a SOCTIIP build Alternative in the coastal zone is selected for implementation, a CDP application would be submitted to the CCC. The CDP would address coastal zone concerns including biological, cultural and paleontological resources and visual impacts based on impacts and mitigation identified in this EIS/SEIR for the selected alternative.

The CCC's concerns involve environmentally sensitive habitat areas, alterations of rivers or streams, fish and wildlife resources, wetland areas, archaeological or paleontological resources, and visual qualities. These parameters and potential cumulative impacts of the SOCTIIP build Alternatives and other project related to these parameters are discussed elsewhere in this Executive Summary, under biological, cultural, paleontological and visual resources.

Impacts of the No Action Alternatives Related to the Coastal Zone

The No Action Alternatives would not result in any impacts related to the coastal zone because these Alternatives do not propose any construction or implementation of any SOCTIIP infrastructure improvements in or near the coastal zone in the study area. The No Action Alternatives would result in significant congestion on I-5 and major arterials that provide access to the coast. As a result, the No Action Alternatives will adversely impact public access to the coast.

Cumulative Adverse Impacts Related to the Coastal Zone

Part of the southernmost area of the SOCTIIP study area is in the coastal zone. Development in the Coastal Zone would require a CDP. Each proposed project in the coastal zone is evaluated on its individual merits by the CCC. The CCC's concerns involve environmentally sensitive habitat areas, alterations of rivers or streams, fish and wildlife resources, wetland areas, archaeological or paleontological resources, and visual qualities. These concerns and potential cumulative impacts of SOCTIIP and other developmentally related environmental parameters are discussed elsewhere in this EIS/SEIR, under biological, cultural, paleontological and visual resources in Section 4, Affected Environment, Impacts and Mitigation Measures and in Section 5 Cumulative Impacts. ~~Therefore, the SOCTIIP build Alternatives have no cumulative impacts on the coastal zone. However, potential cumulative impacts relating to the other environmental parameters are discussed in those relevant sections of this Executive Summary.~~

ES.8.20.6 Summary of Impacts Related to Energy

This Section summarizes the potential impacts of the SOCTIIP Alternatives related to energy. Section 4.19 (Affected Environment, Impacts and Mitigation Measures Related to Energy) in the EIS/SEIR describes the existing conditions, study area and methodology, impacts analysis and mitigation measures related to energy in detail.

Long-Term Impacts Related to Energy

The SOCTIIP build Alternatives would result in either very minor increases or very minor decreases in the demand for energy for vehicle travel, depending on the specific background land use and circulation system assumptions. The SOCTIIP build Alternatives would not result in a substantial change in the demand for energy during operations compared to the No Action Alternatives, with changes of substantially less than one percent on an annual basis. Therefore, operation of the SOCTIIP build Alternatives would not result in adverse impacts on energy consumption.

Construction Impacts Related to Energy

During construction of the SOCTIIP build Alternatives, energy would be used for the construction of the road, structures and materials. The use of energy for the construction of the build Alternatives would be a short-term adverse impact on energy resources. However, it would represent only a very small percent of the total energy consumed in the region during the construction period and, therefore, is not anticipated to result in adverse impacts on the overall supply of and demand for energy during the construction of the SOCTIIP build Alternatives. The No Action Alternatives would not result in the construction or implementation of any SOCTIIP improvements and, therefore, would not result in short-term demand for energy resources associated with construction.

Mitigation Measures Related to Energy

No mitigation measures related to energy are proposed because the change in energy consumption under the SOCTIIP build Alternatives compared to the No Action Alternatives is substantially less than one percent on an annual basis.

Unavoidable Adverse Impacts and CEQA Level of Significance After Mitigation Related to Energy

The use of energy for the construction of the SOCTIIP build Alternatives would be a short-term adverse impact on energy resources but would represent only a minor percent of the total energy consumed in the

region during the construction period. Therefore, this is not an adverse impact during the construction of the SOCTIIP build Alternatives.

Some SOCTIIP build Alternatives would result in an increase to VMT and energy consumption compared to the No Action Alternative. The change in energy consumption under the build Alternatives compared to the No Action Alternatives is substantially less than one percent on an annual basis and, therefore, operation for the SOCTIIP build Alternatives would not result in adverse impacts on energy consumption.

The SOCTIIP build Alternatives would not result in significant adverse impacts under CEQA related to energy.

ES.8.20.7 Summary of Impacts Related to Mineral Resources

This Section summarizes the potential impacts of the SOCTIIP alternatives related to mineral resources. Section 4.22 (Affected Environment, Impacts and Mitigation Measures Related to Mineral Resources) in the EIS/SEIR describes the existing conditions, study area and methodology, impacts analysis and mitigation measures related to these resources in detail.

Adverse Impacts Related to Mineral Resources

The FEC-W, FEC-M, CC, CC-ALPV, A7C-ALPV and A7C-FEC-M/Preferred Alternatives would result in a slight reduction in the area from which mineral resources can be extracted~~.~~. This impact can be substantially mitigated for all the build Alternatives. The AIO and I-5 Alternatives would not result in any adverse impacts on mineral resources or the ability to extract mineral resources in the study area.

Impacts of the No Action Alternatives Related to Mineral Resources

The No Action Alternatives would not result in adverse impacts related to mineral resources because these Alternatives do not propose construction or implementation of SOCTIIP infrastructure improvements in the study area.

Cumulative Impacts Related to Mineral Resources

The FEC-W, FEC-M, CC, CC-ALPV, A7C-ALPV and A7C-FEC-M/Preferred Alternatives and other cumulative projects in the area would result in a cumulative adverse impact related to the reduction in the areas from which mineral resources can be extracted. The AIO and I-5 Alternatives would not result in any adverse impacts on mineral resources or the ability to extract mineral resources in the study area and, therefore, would not contribute to cumulative adverse impacts related to mineral resources.

Mitigation Measures Related to Mineral Resources

Mitigation for this impact is provided by compliance with the Uniform Relocation Assistance and Real Property Acquisition Polices Act of 1970. Refer to measure SE-2 (Property Acquisition and Relocation Assistance) in Section ES.6.6.3.

Unavoidable Adverse Impacts and CEQA Level of Significance After Mitigation Related to Mineral Resources

The FEC-W, FEC-M, CC, CC-ALPV, A7C-ALPV and A7C-FEC-M.Preferred Alternatives impact mineral resources in the San Juan Creek by reducing, by a minimal amount, the availability of those resources. None of these Alternatives would result in adverse impacts related to mineral resources which

cannot be fully mitigated. The AIO, I-5 and No Action Alternatives would not result in adverse impacts on mineral resources.

There would be no significant adverse impacts after mitigation under CEQA related to mineral resources as a result of the SOCTIIP build Alternatives.

ES.9 PUBLIC PARTICIPATION

ES.9.1 NATIVE AMERICAN CONSULTATION

Native American consultation for the SOCTIIP Project has been on-going since 2003, consistent with the regulations promulgating Section 106 of the National Historic Preservation Act found in 36 CFR Part 800.2 (c)(2). Two federal entities (FHWA and DOD) and one state agency (Caltrans) have jurisdiction over cultural resource issues associated with the SOCTIIP. Initially, the California Native American Heritage Commission (NAHC) was contacted to conduct a search of its Sacred Lands Files for sensitive cultural resources near the SOCTIIP alternatives and to provide a comprehensive list of Native American groups having traditional associations with the project area. Informal consultation also occurred whereby quarterly updates were provided on the progress of the project and the status of the initial Section 106 identification efforts for the project.

Consultation opportunities have included circulation of the SOCTIIP Draft EIS/SEIR for public review on May 7, 2004; an on-site field meeting hosted by MCB Camp Pendleton archaeologist Stan Berryman to tour the SMAD on August 19, 2004; and discussions at regularly scheduled meetings of the Native American Heritage Commission (NAHC). Consultation will continue throughout all subsequent phases of the Section 106 compliance process. The future consultation efforts will include, but not be limited to, an on-site tour of the SOCTIIP project area, consultation with interested parties prior to and throughout evaluation of identified archaeological sites, Native American monitoring of evaluation excavation efforts, participation in the development of the project Memorandum of Agreement for cultural resource mitigation measures, Native American monitoring of any further mitigation excavations, and Native American monitoring during ground-disturbing construction activities in sediments with the potential to contain prehistoric cultural resources.

Please see Section 4.16 and Section 11 of the Final EIS/SEIR for more information regarding the Native American Consultation process.

ES.9.2 NOTIFICATION OF AVAILABILITY OF THE DRAFT EIS/SEIR

The FHWA and the TCA prepared and circulated the Draft EIS/SEIR for the proposed project. Specifically, the Draft EIS/SEIR assessed the potential environmental impacts associated with the Alternatives to provide congestion relief in south Orange County, including alternatives to extend the existing Foothill Transportation Corridor (FTC), improve arterials, and widen Interstate 5 (I-5).

The Draft EIS/SEIR was circulated for public review from May 7, 2004, to August 6, 2004. Documents were distributed to agencies, institutions, political representatives, community groups and interested parties. In response to requests from federal and local agencies, the FHWA and the TCA extended the public review period to 92 days, which is more than twice the minimum review period of 45 days.

Public notification of the availability of the Draft EIS/SEIR was made in the following ways:

- The Draft EIS/SEIR was distributed in hard copy and/or electronically on a compact disc (CD) to the distribution list provided in Appendix A of the Response to Comments.
- The Notice of Availability (NOA) was published in The Orange County Register on May 7, 2004. Additional newspaper notices were published in The Orange County Register on June 10, 11, 17 and 18, 2004. In addition, the NOA was published in the following local papers: Capistrano Valley (June 17, 2004), Canyon Life/Rancho Santa Margarita New (June 18, 2004), Dana Point News (June 17, 2004), Ladera Post (June 18, 2004), Leisure World News (June 17, 2004), San Clemente Sun Post (June 10 and 12, 2004), and the Saddleback Valley News (June 18, 2004). Copies of the newspaper notices are provided in Appendix A of the Response to Comments.
- The NOA was distributed to approximately 9,300 addresses in south Orange County. A copy of the NOA is provided in Appendix A of the Response to Comments.
- The NOA was published on the TCA website (www.thetollroads.com).
- The Draft EIS/SEIR was available on the TCA website.
- The Draft EIS/SEIR was available for public review at the following locations: TCA office, San Clemente Information Center, Caltrans District 12 office, and nine area libraries. For the addresses of these locations please refer to Appendix A of the Response to Comments.
- The NOA was published in the Federal Register (Volume 69, No. 89, May 7, 2004, page 25575). A copy of The Federal Register indicating availability of the Draft EIS/SEIR is provided in Appendix A of the Response to Comments.
- After the release of the Draft EIS/SEIR and the publication and distribution of the NOA, the TCA extended the public review period from the original date of July 7, 2004, to August 6, 2004. All parties who received the Draft EIS/SEIR or NOA were notified of the extended public review period; those distribution lists are provided in Appendix A. Copies of the letters extending the public review period are provided in Appendix A of the Response to Comments.
- A public meeting was held to solicit comments on the Draft EIS/SEIR. The meeting was held at Tesoro High School on June 19, 2004. The public was notified of this public hearing in the newspaper notices of the availability of the Draft EIS/SEIR in Appendix A and in a separate notice of public hearing published on June 10, 11, 17 and 18, 2004, in The Orange County Register and local area papers. Copies of the notice of public hearing are provided in Appendix A of the Response to Comments.
- The TCA website provided information on the dates of the public review period, including the extension; the public hearing on June 19, 2004, how to submit written or electronic comments, and where the Draft EIS/SEIR was available for review or purchase.

ES.9.3 COMMENTS RECEIVED ON THE DRAFT EIS/SEIR

Comments on the Draft EIS/SEIR were received from federal, state and local agencies, organizations, interested parties, and private citizens, as listed below in Section 9.4. The following options were provided for submitting comments on the project and/or the Draft EIS/SEIR:

- Written comments could be mailed to the TCA or the FHWA by the end of the public review period on August 6, 2004.
- Written comments could be provided electronically on forms provided on the TCA website.

- Written comments could be submitted on comment forms provided by the TCA at the TCA offices and at the San Clemente Information Center. In addition, comment cards were provided to attendees at the June 19, 2004, public meeting. Comment cards could be given to any TCA staff person at the TCA office, the San Clemente Information Center or at the public meeting. Alternatively, the comment cards could be mailed directly to the TCA.
- Verbal comments could be provided to court reporters at the June 19, 2004, public meeting. All verbal comments received at the June 19, 2004, public meeting were transcribed.

ES.9.4 RESPONSE TO COMMENTS

Over 7,000 comments were received during the public review period. Responses are provided in the Response to Comments document, which is part of the Final EIR. All comment letters or transcribed public hearing comments received during the public review period for the Draft EIS/SEIR are organized into the following categories (shown below). Specific agencies that provided comments are named beneath each heading.

Federal Agencies

F1	United States Department of Homeland Security, Federal Emergency Management Agency	May 27, 2004
F2	United States Marine Corps	July 28, 2004
F3	United States Department of Commerce, National Oceanic and Atmospheric Administration	August 6, 2004
F4	Department of the Army, Los Angeles District, Corps of Engineers	August 6, 2004
F5	United States Environmental Protection Agency	August 11, 2004
F6	United States Department of the Interior	September 9, 2004

State Agencies

S1	State of California, Department of Conservation	June 24, 2004
S2	State of California, The Resources Agency, Department of Conservation, Division of Land Resources Protection	July 2, 2004
S3	State of California, The Resources Agency, California Coastal Commission	July 30, 2004
S4	State of California, Department of Justice	August 4, 2004
S5	State of California, The Resources Agency, Department of Parks and Recreation	August 2, 2004
S6	State of California, The Resources Agency, Department of Fish and Game	August 6, 2004
S7	State of California, Governor's Office of Planning and Research, State Clearinghouse and Planning Unit	August 9, 2004

Regional Agencies

R1	John Wayne Airport	June 10, 2004
R2	Metrolink, Southern California Regional Rail Authority	June 30, 2004
R3	Southern California Association of Governments	August 5, 2004
R4	County of Orange Resources and Development Management Department	August 6, 2004

Local Agencies

L1	City of La Habra	May 28, 2004
L2	City of Anaheim	June 2, 2004
L3	City of Irvine	July 26, 2004
L4	City of Lake Forest	August 6, 2004
L5	City of Mission Viejo	August 3, 2004
L6	City of Tustin	August 5, 2004
L7	City of San Clemente	no date
L8	City of Rancho Santa Margarita	August 5, 2004
L9	City of San Juan Capistrano	August 6, 2004

Utilities and Service Providers

U1	Orange County Fire Authority	June 4, 2004
U2	Capistrano Unified School District	August 6, 2004

Businesses, Groups, and Organizations

O1	OCTax	June 19, 2004
O2	Sandwich Buddies	June 22, 2004
O3	Yacoel Properties	June 23 2004
O4	Marblehead Community Association	June 29, 2004
O5	Broadmoor San Clemente Community Association	July 6, 2004
O6	The Donna O'Neill Land Conservancy	July 20, 2004
O7	San Diego County Archaeological Society	July 17, 2004
O8	Coastal Postal	July 26, 2004
O9	Fairview Mortgage Capital, Inc.	July 26, 2004
O10	Fairview Mortgage Capital, Inc.	July 26, 2004
O11	Talega Maintenance Corporation	August 2, 2004
O12	Raekei Imaging	June 21, 2004
O13	MiOcean	July 30, 2004
O14	San Clemente Chamber of Commerce	July 8, 2004
O15	Building Industry Association of Southern California	August 5, 2004
O16	Orange County Business Council	August 4, 2004
O17	Sierra Club, Orange County Native American Sacred Sites Task Force	August 5, 2004
O18	California Cultural Resource Preservation Alliance, Inc.	August 4, 2004
O19	Terrell Watt Planning Consultants	August 6, 2004
O20	Surfrider Foundation	no date
O20A	Surfrider Foundation	no date
O21	Shute, Mihaly & Weinberger LLP	August 5, 2004
O22	Rancho Mission Viejo	August 6, 2004

O23	Tustin Chamber of Commerce	August 4, 2004
O24	The Donna O'Neill Land Conservancy	August 5, 2004
O25	California State Parks Foundation	August 5, 2004
O26	Juañeno Band of Mission Indians Acjachemen Nation	August 6, 2004
O27	National Association of Industrial and Office Properties	August 6, 2004
O28	Automobile Club of Southern California	August 6, 2004
O29	Hills for Everyone	June 19, 2004

Individuals

Over 200 comment letters were received from the general public on the Draft EIS/SEIR for the proposed project, including several form letters. These comment letters are responded to in Chapter 4.0 of the Response to Comments document. Please refer to Responses to Comments P1 through P277.

Public Hearing (June 19, 2004)

Testimony was received from 198 people who attended the Public Hearing held on June 19, 2004. A number of common issues were raised in the testimony. These comments are discussed below and general responses are provided to the issues that were raised. For additional information please refer to Chapter 4.0 of the Response to Comments document.

Comment Cards, Petitions, and E-mail

TCA received 6,183 comment cards/petitions and 375 e-mail comments regarding the proposed project. A number of issues were commonly raised in these letters. These comments are discussed below and general responses are provided to the issues that were raised. For additional information please refer to Chapter 4.0 of the Response to Comments document.

ES.9.5 SIGNIFICANT COMMENTS ON THE DRAFT EIS/SEIR

A summary of comments on the Draft EIS/SEIR is provided below. It should be noted that the comments summarized below do not reflect all of the comments received during the public review period. As previously mentioned, over 7,000 comments were received from federal, state, regional and local agencies, organizations, utility and service providers and the general public. The following summary reflects the significant concerns or issues regarding the proposed project that were raised during the public review process.

Federal and State Agencies

Some of the most significant comments on the Draft EIS/SEIR came from federal resource agencies, including the U.S. Environmental Protection Agency (EPA) and the Army Corps of Engineers (ACOE). These comments are largely directed at the natural resources and air quality impacts of the project and the integration of the EIS/EIR process with the Section 404 permitting process.

The federal agencies expressed concern about the following three primary issues: (1) adherence to the procedures outlined in the NEPA-404 Memorandum of Understanding (MOU), (2) impacts to wetlands and waters of the United States and use of a planning level delineation of waters of the United States in the Draft EIS/SEIR, and (3) coordination between the Rancho Mission Viejo (RMV) Ranch Plan and the TCA and FHWA planning efforts for SOCTIIP.

As part of the Final EIS/SEIR, the TCA and the FHWA have identified a Preferred Alternative. The next phase in the NEPA-404 MOU process is the identification of the final least environmentally damaging practicable alternative (LEDPA), as defined by the Section 404(b) (1) Guidelines. The FHWA and the TCA, in conjuction with the USFWS, ACOE, the EPA, Caltrans, and Marine Corps Base (MCB) Camp Pendleton are continuing the collaborative process to implement the NEPA-404 MOU. A planning-level delineation of waters of the United States was used in the Draft EIS/SEIR to measure project-related impacts to aquatic resources from the alternative alignments. While this planning-level delineation provides a relative measure of the acreage of impacts to water resources, the TCA and the FHWA acknowledged, that a project-level delineation would be needed to determine the LEDPA. More detailed identification of aquatic resources and their acreages are provided in Section 4 of the Wetlands Delineation Technical Report (Glenn Lukos Associates [GLA] 2004) included as Attachment 12 to the Response to Comments document. This report was prepared in accordance with the recommendation of the ACOE and verified by the ACOE prior to inclusion in the document.

The proposed RMV Ranch Plan (Ranch Plan) was adopted and the Final EIR for the Ranch Plan certified by the County of Orange in November 2004, after publication of the SOCTIIP Draft EIS/SEIR. The Ranch Plan depicts an alignment of the Foothill Transportation Corridor South (FTC-S) as shown on the Master Plan of Arterial Highways (MPAH), but RMV acknowledges that if another alignment is selected as the Preferred Alternative, their development plan will need to accommodate the change. Subsequent to County approval of the Ranch Plan, RMV and the County of Orange entered into a Settlement Agreement with the Endangered Habitats League, Natural Resources Defense Council, Sea and Sage Audubon Society, Laguna Greenbelt, Inc., and the Sierra Club. This Agreement did not change the total number of dwelling units or nonresidential development for the Ranch Plan, but did change the location of development and increase the amount of devoted open space. The availability of the approved Ranch Plan and Ranch Plan Settlement Agreement provides an opportunity for coordinated planning and plan refinements between the two projects. For example, once the Foothill/Eastern TCA Board adopts the Preferred Alternative, the alignment will be set so that as specific develoment site plans, Area Plans and subdivision maps are prepared for the Ranch Plan, development can be placed in a location within the development bubbles outside of the SOCTIIP Preferred Alternative. Likewise, with the availability of the Ranch Plan EIR and subsequent Ranch Plan Settlement Agreement, the TCA has been able to make refinements to the Preferred Alternative to adjust the location of the alignment through Planning Area 2 in order to allow for the consolidation of the development area, and modify the Cow Camp Road interchange design from a full diamond to folded diamond design to be consistent with the Arterial Plan in the approved Ranch Plan.

In addition to letters from federal resource agencies, comment letters were also received from state agencies. Some of the letters focused on potential impacts to San Onofre State Beach (SOSB), consistency with the California Coastal Act (CCA), and potential impacts to agricultural resources. For example, comments from the California Department of Justice and the California Department of Parks and Recreation (CDPR) focused on concern about SOSB. The California Coastal Commission expressed concern regarding the consistency of the proposed project with the CCA. The California Department of Conservation (CDC) submitted comments related to impacts to agricultural resources that may be affected by one or more of the SOCTIIP Alternatives. The California Department of Fish and Game (CDFG) submitted substantial comments regarding impacts to biological resources. Other agency comments required clarification of information in the Draft EIS/SEIR or provided information for consideration by decision makers. For information on specific comments, please refer to the Response to Comments document, Sections 3.0 and 4.0.

Regional Agencies and Local Agencies

Many of the comments submitted by local agencies, including area cities, related to traffic analysis and possible impacts to local circulation networks. The City of Irvine, for example, requested the identification and mitigation of impact to Alton and Bake Parkways between I-5 and FTC. An evaluation was made of the differences in traffic volumes on the countywide highway system in relation to the different SOCTIIP Alternatives (e.g., build Alternatives versus the No Action Alternative). The changes to traffic levels on Alton Parkway and Bake Parkway between I-5 and SR-241 were below the level of significance threshold applied in the traffic analysis. In addition, several cities including Lake Forest, Mission Viejo and Laguna Hills, articulated their opposition to the I-5 Widening Alternative because it would displace a large number of homes and businesses and result in significant adverse socioeconomic and environmental justice impacts. The City of San Clemente expressed opposition to any Alternative that would traverse the City of San Clemente and/or does not provide a direct connection to the existing I-5 Freeway. Opposition to the Arterial Improvements Only Alternative was also expressed by some local agencies. The County of Orange submitted comments related to drainage and floodplain encroachment, open space and recreation, noise, aesthetics, cultural resources, transportation, waste manangement, including potential impacts to the Prima Deshecha Sanitary Landfill and water quality. For information on specific comments, please refer to the Response to Comments document, Sections 3.0 and 4.0.

Utility and Service Providers

The Orange County Fire Authority (OCFA) and the Capistrano Unified School District (CUSD) submitted comments during the public review period. OCFA stated that no additional public safety resources are needed as a result of this project, and that all standard conditions and guidelines will be applied to the project during the normal review process. CUSD also requested early coordination with the TCA to identify and implement noise control measures with the least disruption of the educational environment. The TCA and the FHWA revised several portions of the Draft EIS/SEIR to update, correct and clarify information related to CUSD facilities and the consultation process. For information on specific comments, please refer to the Response to Comments document, Sections 3.0 and 4.0.

Businesses, Groups and Organizations

Many businesses, groups and organizations expressed opinions about the Alternatives considered in the Draft EIS/SEIR and about toll roads in general. These opinions will be provided to the decision makers for their consideration. In addition to many of the issues raised by federal, state and local agencies, letters received from businesses, groups and organizations on the environmental analysis in the Draft EIR/SEIR included comments on the San Mateo Archaeological District, water quality features included in the project, potential impacts to SOSB and Trestles Beach and potential impacts to residential and commercial areas located adjacent to SOCTIIP Alternatives. For information on specific comments, please refer to the Response to Comments document.

Individuals, Comment Cards, Petitions, Public Hearings and E-mail

A number of issues were raised frequently in letters from members of the public. These comments are addressed in the Response to Comments document in Comment and Response/Question and Answer format, which discusses the issue thoroughly and directs the reader to portions of the Draft EIS/SEIR that provide additional information.

ES.9.6 COMMON RESPONSES TO COMMENTS

Common issues and comments were raised during the public review process for the Draft EIS/SEIR. Section 2.0 of the Response to Comments document and the text below consists of Common Responses to some of the technical topics or issues that were often repeated in the comment letters. These responses address issues related to Traffic, Alternatives, the Cooperative Agreement, Recirculation of the Draft EIS/SEIR, and Cultural Resources. The Common Responses have not been underscored for ease of reading.

Reponses are provided for all comments received on the Draft EIS/SEIR. Section 2.0 of the Response to Comments document consists of Common Responses to topics that are often repeated in the comment letters. The Responses to Comments provided in Sections 3.0 and 4.0 identify each commenter and comment number and provide a response to each comment. In some cases the reader is referred to the Common Responses provided below. Please note that the tables in the Common Responses are individually numbered, consistent with the numbering in the Response to Comments document.

COMMON RESPONSE: PREFERRED ALTERNATIVE – 1

Introduction and Summary of Major Features of Preferred Alternative

The following description provides detailed information about the Preferred Alternative, changes to the Preferred Alternative since circulation of the Draft EIS/SEIR, refinements to the Preferred Alternative, and the reasons for selection of the Preferred Alternative. The Preferred Alternative is the A7C-FECM Alternative, but with the following primary modifications:

- **Reduction in Size of Project.** The Preferred Alternative is reduced in size from eight lanes to a maximum of six general purpose lanes. This modification reduces the typical cross-section of the project from 156 feet to 128 feet. Initially, the project will be constructed as a four-lane facility (two lanes in each direction).
- **Modifications Regarding RMV Ranch Plan to Maximize Open Space.** The alignment of the Preferred Alternative is revised to conform as much as is feasible to the areas shown for development in the Ranch Mission Viejo (RMV) Ranch Plan approved by the County of Orange as modified by the Settlement Agreement among RMV, the County and the environmental organizations (the Endangered Habitats League, Natural Resources Defense Council, Sea and Sage Audubon Society, Laguna Greenbelt, Inc., and Sierra Club). The RMV Plan (as reflected in the Settlement Agreement) contemplates the development of 14,000 units and 3,480,000 square feet of urban activity center uses, 500,000 square feet of neighborhood center uses and 1,220,000 square feet of business park uses in six development areas. By including as much of the Preferred Alternative within the development areas as is feasible, impacts on open space and habitat areas are minimized.
- **Consistency With Anticipated NCCP Reserve Design.** The modifications also conform to the anticipated reserve design for the Southern Orange County Natural Community Conservation Plan. In general, the RMV Ranch Plan (as reflected in the Settlement Agreement) concentrates the development on the RMV property in the western and northern portions of the RMV property. It is anticipated that the reserve design for the Orange County Southern Natural Community Conservation Plan will be consistent with the Ranch Plan.
- **Minimization of Impacts on Wetlands and Other Natural Resources.** The Preferred Alternative includes a number of adjustments that avoid or minimize impacts to wetlands and other natural resources. For examples, the Preferred Alternative impacts only 0.83 acre of wetlands.

- **Adjustments to Minimize Utility Relocation Impacts.** Utility relocation impacts are minimized and to insure that utility relocations conform to Caltrans standards.
- **Inclusion of Additional Wildlife Crossings.** Fifteen wildlife crossings are included to further facilitate wildlife movement. Wildlife crossings are included within the four large habitat blocks identified in the approved Ranch Plan open space reserves. These large open spaces areas are functionally interconnected though bridge and wildlife crossings incorporated into the design of the Preferred Alternative and through the project design features associated with the approved Ranch Plan.
- **Minimization of Access Road Impacts.** The design of the connections between the Preferred Alternative and access roads is modified to further minimize grading and to insure continued access to existing utility and agricultural operations on the Ranch.
- **Minimization of Cultural Resources Impacts.** The location and design of several Extended Detention Basins is modified to reduce impacts on cultural and biological resources.

Preferred Alternative Refinement

The Preferred Alternative incorporates the refinements above in response to comments on the Draft EIS/SEIR and reflects detailed discussions among the U.S. Fish and Wildlife Service, the U.S. Environmental Protection Agency, the U.S. Army Corps of Engineers, the U.S. Marine Corps, the Federal Highway Administration, Caltrans, the TCA, and the California Department of Fish and Game. These and other changes are discussed further in Table 1.

Additional analysis of the Preferred Alternative is provided in each topical section of this EIS/SEIR. The additional analysis includes an investigation of potential environmental effects expected from the Preferred Alternative that may be different from those identified in the Draft EIS/SEIR. The Preferred Alternative does not result in any new significant impact and does not increase the severity of any impact of the A7C-FEC-M Alternative. The Preferred Alternative reduces the impacts of the A7C-FEC-M Alternative in several respects.

Project Description

The Preferred Alternative is limited access highway that would extend the existing SR-241, FTC-N, south from its existing southern terminus at Oso Parkway to I-5 in the vicinity of the Orange/San Diego County line. This extension would be operated as a toll road, as is the existing portions of SR-241.

The Draft EIS/SEIR provided detailed information regarding all of the alternatives evaluated in the DEIS/SEIR. The Preferred Alternative is the initial corridor described for the A7C-FEC-M Alternative with the modifications described in Section 2.2.

Preferred Alternative Description

The Preferred Alternative is approximately 26 km (16 mi) long plus approximately 1.3 km (0.8 mi) of improvements on the I-5. The proposed facility includes four general-purpose travel lanes, two in each direction, for the entire length of the corridor. Two additional lanes will be added in the future as traffic conditions warrant. Key components of the Preferred Alternative include continuous mainline travel lanes and ramps south of Oso Parkway, several wildlife structures/bridges to facilitate wildlife movement, an approximately 2,100 foot bridge structure crossing San Juan Creek, a toll plaza north of Ortega Highway, ramp toll plazas at Cow Camp Road and Avenida Pico, an approximately 2,859 foot elevated

bridge structure spanning San Mateo Creek and I-5 providing direct connection to I-5, and reconstruction of the existing I-5 Basilone Road interchange.

Figure 2.1 of the Response to Comments document shows the anticipated disturbance limits, which include the grading limits, remedial grading limits, right-of-way limits, utility relocation, and construction staging areas for the Preferred Alternative. The Preferred Alternative is limited to a maximum of six lanes.

The Preferred Alternative, the corridor is divided into five approximately equal segments shown in Figures 2.2 through 2.6 (Sheets 1 through 5) (Section 2.0 of the Final SEIR). These sheets provide a means of illustrating the proposed project in greater detail but are not intended to show construction segments. These figures show the A7C-FEC-M Alternative as presented in the Draft EIS/SEIR and the Preferred Alternative and illustrate areas where the alignment is refined. A general description of each sheet is provided below. The sheets overlap, therefore the total length of the Preferred Alternative on each of the sheets totals more than the actual length, which is 16.10 mi (25.91 km).

Sheet 1 (Figure 2.2): Sheet 1 shows the Preferred Alternative from the existing terminus of the FTC-N at Oso Parkway, on the east side of Cañada Chiquita It extends south through Cañada Chiquita and terminates approximately 0.5 km south of the Goodwin Ridge fire road.

Sheet 2 (Figure 2.3): Sheet 2 shows the Preferred Alternative segment extending south on the ridge that separates Cañada Chiquita and Cañada Gobernadora, past the Cañada Chiquita Water Reclamation Plant, traversing San Juan Creek and Ortega Highway to just north of the Olgebay-Norton Sand Quarry.

Sheet 3 (Figure 2.4): Sheet 3 starts just north of the Olgebay-Norton Sand Quarry and extends south through The Donna O'Neill Land Conservancy (The Conservancy), terminating just east of Talega.

Sheet 4 Figure 2.5): Sheet 4 starts just east of Talega and just west of the Northrup-Grumman Capistrano Test Site. The alignment travels south, crossing the Orange County/San Diego County boundary and onto Marine Corps Base (MCB) Camp Pendleton (San Onofre State Beach Leasehold) in San Diego County.

Sheet 5 (Figure 2.6): Sheet 5 shows the corridor continuing south across Camp Pendleton (through the San Onofre State Beach Leasehold) to I-5 with direct connectors between the corridor and I-5.

Table 1 provides a more specific indication of the changes and the reasons for the change. The sheet numbers used in the table correspond to Figures 2.2 through 2.6 (Sheets 1 through 5). The total footprint of the Preferred Alternative, including areas for grading, remedial grading, and construction disturbance, areas for paved roads and associated bridges and interchanges, access roads, materials storage areas, areas for utility relocations and areas for the construction of Best Management Practices (BMPs) (such as EDBs and other water quality features) for the Preferred Alternative is 1,194 ac (483 ha). A summary of the change in environmental effects between the A7C-FEC-M Initial and the Preferred Alternative is provided for each of the topics included in Section 4.0 of the Final SEIR.

Table 1
Summary of Preferred Alternative Modifications

Sheet Number	Modification Area (MA)	Description of Changes	Reason For Changes	Classification of Modifications
1	A	Minor refinements to accommodate modified slope grades (2.5:1 slopes) that provide improved factors of safety for slope stability.	Engineering refinements	Engineering and Geotechnical Considerations
1	B	Alignment through the Middle Chiquita area was shifted to the east.	Shifting the alignment to the east side of the canyon in the Middle Chiquita area supports the anticipated reserve design for the southern NCCP.	Supports anticipated Reserve Design for Southern NCCP.
		An Access Road to the Rancho Mission Viejo (RMV) property was relocated to be adjacent to the proposed toll road alignment.	Access to the RMV property was reconfigured to minimize the extent of the disturbance limits. Reduced disturbance limits.	Improved Access Road Design –
2	B	The alignment shift through the Middle Chiquita area is continued onto Sheet 2.	Shifting the alignment to the east side of the canyon in the Middle Chiquita area supports the anticipated Reserve Design for the Southern NCCP.	Supports anticipated Reserve Design for Southern NCCP.
		"C" Street interchange was removed from the corridor footprint.	The proposed interchange is located entirely within Planning Area 2 of the Ranch Plan and will be permitted as part of that development process.	Engineering and Geotechnical Considerations
2	C	Cow Camp Road interchange design was modified from full diamond to folded diamond design.	The interchange design modification is consistent with the Arterial Plan in the approved Ranch Plan and allows for utility relocations.	Supports the Approved Ranch Plan and Utility Relocations.

Table 1 (continued)
Summary of Preferred Alternative Modifications

Sheet Number	Modification Area (MA)	Description of Changes	Reason For Changes	Classification of Modifications
2	D	Minor refinements to reduce the height of the cut and minimize grading	Engineering refinements resulted in a reduction in area required for remedial grading. Reduced disturbance limits. Two EDBs were combined into one in a new location	Engineering and Geotechnical Considerations Minor Modifications to EDBs
3	E	The alignment was shifted to the east and the RMV access road was redesigned.	The modified alignment reflects the approved Ranch Plan and allows for the consolidation of the adjacent development areas. The access roads were adjusted to conform with a revised wildlife crossing location. Consistency with wildlife crossing.	Adjustments to Reflect the Approved Ranch Plan.
3	F	Minor refinements to accommodate RMV, access road, and to reflect the availability of more detailed geotechnical and engineering information.	The modifications better accommodate the relocation of RMV access roads. The alignment shift to the east provides for reduced grading and a reduced area of disturbance. Changes to the RMV road access design improves RMV access and reduces potential impacts to oaks compared to the A7C-FEC-M Alternative. The refinement also allows for remedial grading (2.5:1 slopes) where warranted due to soil and geotechnical considerations.	Improved Agricultural Access Road Reduced disturbance limit Changes to Minimize Impacts to Natural Resources Engineering and Geotechnical Considerations
4	G	Alignment adjustments include an increase in the width slightly to the east in the northern portion of this Modification Area, and a reduction to the east and west in the southern portion.	Refinements to the disturbance limits reflect relocation of utility infrastructure in this area. The existing Cristianitos substation is protected in place with relocation of transmission poles/towers. Minor modifications to the EDBs design are also incorporated. In-line relocation of utilities entering Talega substation allowed a reduced disturbance limit. Reduced disturbance	Improved Utility Relocation Design Minor Modifications to EDBs

Table 1 (continued)
Summary of Preferred Alternative Modifications

Sheet Number	Modification Area (MA)	Description of Changes	Reason For Changes	Classification of Modifications
			limit.	
4	H	Minor adjustments were made throughout the length of the alignment in this Modification Area.	The refinements accommodate remedial grading and slope modifications based on geotechnical considerations. These changes also slightly reduce potential impacts to the thread- leaved brodiaea.	Engineering and Geotechnical Considerations Changes to Minimize Impacts to Natural Resources
4 and 5	I	The revised disturbance limit reflects consolidation of utility and access road requirements. Areas where the disturbance limit was expanded reflect the need for remedial grading.	The disturbance limits were reduced in this area as a result of an improved utility relocation and access plan. Other changes allow for remedial grading (2.5:1 slopes).	Improved Utility Relocation Design Improved Utility and Agricultural Access Road Engineering and Geotechnical Considerations
5	J	The revised disturbance limit reflects consolidation of utility and access road requirements. Other changes to the disturbance limit reflect slight modifications in slope areas at the Cristianitos Road Interchange and near the proposed EDBs location. The disturbance limit was also expanded for the relocation of the State Park sewer pump station and maintenance yard.	The disturbance limits were reduced in this area as a result of an improved utility relocation and access plan. The alignment was located higher on the slope to minimize impacts to wetlands and was modified slightly at the Cristianitos Road interchange to minimize impacts to Pacific pocket mouse habitat. The proposed EDBs was relocated to avoid impacts to cultural resources. Another change was for the relocation of the State Park sewer pump station and maintenance yard.	Improved Utility Relocation Design Changes to Minimize Impacts to Natural and Cultural Resources

Table 1 (continued)
Summary of Preferred Alternative Modifications

Sheet Number	Modification Area (MA)	Description of Changes	Reason For Changes	Classification of Modifications
5	K	The alignment was adjusted north and south of I-5.	The alignment modification provides for the relocation of utilities and reflects refinements to the design of the EDBs near the agricultural area. The disturbance limit modifications also ensure that construction staging of Basilone Bridge is accommodated within the project disturbance limits. Improvements in the utility relocation design reduced the amount of area required for utility relocation near the San Mateo Creek bridge. Several minor adjustments in the vicinity of the San Mateo Creek bridge minimize impacts to wetlands associated with the Creek.	Changes to Minimize Impacts to Natural Resources Improved Utility Relocation Design Engineering and Geotechnical Considerations Minor Modifications to EDBs

Background to the Identification of the Preferred Alternative - NEPA, Clean Water Act and Endangered Species Act Integration Process

History of Foothill Transportation Corridor South Planning – Project Alternatives

The FTC-S, the proposed southern extension of the FTC-N, has been the subject of continuing planning efforts for over 20 years. Prior studies completed for the FTC-S include EIR No.123 certified by the County of Orange in 1981. That EIR resulted in a conceptual alignment for a transportation corridor facility being placed on the County Master Plan of Arterial Highways (MPAH). Between 1989 and 1991, the TCA prepared TCA EIR No. 3, which addressed the C, and BX road alignments, selected as part of the Alternatives Analysis phase of the project, as the primary build Alternatives. This effort concluded with the certification of the EIR and the selection of the locally Preferred Alternative by Foothill/Eastern Transportation Corridor Agency Board of Directors.

In December 1993, the TCA initiated the preparation of a Subsequent EIR to evaluate the CP Alignment, the BX Alignment and the No build Alternative. The CP Alignment is a refinement of the C Alternative and is similar to the FEC-M Alternative described in the Draft EIS/SEIR. The BX Alignment is identical to the CC Alternative described in the Draft EIS/SEIR. Subsequent to this effort, the project was mandated to participate in the NEPA/Section 404 MOU process. Between August 1999 and November 2000, the NEPA/Section 404 MOU signatory agencies and the TCA developed the project Alternatives to be evaluated in the Draft EIS/SEIR. The NEPA/404 MOU agencies (U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, U.S. Army Corps of Engineers, Federal Highway Administration, the U.S. Marine Corps, Caltrans and the TCA are collectively referred to as the "SOCTIIP Collaborative."

During the course of Phase I of the SOCTIIP Collaborative process (August 1999-November 2000), the Collaborative developed a list of alternatives for evaluation in the SOCTIIP project's NEPA and Section 404 process. The Phase I Collaborative identified several Alternatives for evaluation.

It was during this time that the Central Corridor-Complete (CC-Alternative was previously referred to as the BX Alternative) and the Far East Alternative (CP Alternative) were evaluated to determine optimal alignments. The TCA/FHWA defined the Alignment 7 Corridor Alternative (A7C Alternative) as an Alternative to the CC Alternative to avoid and/or reduce impacts to the significant biological resources in the upper and middle Chiquita areas. The A7C-Alternative represents a shift to the east to move the alignment out of Cañada Chiquita including its primary drainage course and to avoid the wetlands area at the confluence of Cañada Chiquita and San Juan Creek, and at the Segunda Deshecha wetlands complex. Additionally, this shift minimized impacts to sensitive habitat including coastal sage scrub. Similarly, other Alternatives to the CC Alternative were created (i.e., Alignment 7 Corridor Swing Variation (A7C-7SV) Alternative, the Alignment 7 Corridor-Far East Crossover Variation (A7C-FECV) Alternative and the Alignment 7 Corridor Ortega Highway Variation (A7C-OHV) Alternative). The A7C Alternatives and its variations were created as Alternatives to the CC Alternative.

In November 2000, the SOCTIIP Collaborative concurred on the Alternatives to be evaluated in the technical studies supporting the Draft EIS/SEIR. The Collaborative agreed to 24 Alternatives for evaluation in the technical analysis. These include 19 toll road Alternatives, 3 non-toll Road Alternatives and 2 no action Alternatives.

During Phase II of the SOCTIIP Collaborative (January 2001-Present), the TCA sought to further refine the Alternatives to minimize impacts to sensitive environmental resources. During that time the FHWA/TCA realized that the socioeconomic impacts of the Alternatives that connected to the I-5 at Pico Avenue could not be appreciably avoided by specifically refining those Alternatives. Development in the

City of San Clemente had increased substantially, especially in the undeveloped areas where the Foothill-South Corridor Alignments were proposed.

Table 2 represents the results of the avoidance/minimization efforts conducted by the TCA in coordination with the SOCTIIP Collaborative. The C Alignment (CP Alignment), which was selected as the Preferred Alternative in 1991 had much greater environmental impacts than either the FEC-M or the Preferred Alternative. The continued refinement of the SOCTIIP alternatives has resulted in an alternative that is significantly superior to the CP alternative. Most notably, impacts to ACOE jurisdictional wetlands have been minimized to 0.82 acres from the previously delineated 17.0 acres of impact. Occupied Pacific Pocket mouse habitat was avoided through refinement efforts to the Preferred Alternative. The total disturbance limits for the Preferred Alternative have been reduced approximately 30 percent resulting in significantly less affects to the natural environment.

Table 2
Comparison of Environmental Impacts CP, FEC-M, Preferred Alternatives

	CP Alignment	FEC-M Alignment	Preferred Alternative
Total Area of Disturbance	1735 acres	1274 acres	1194 acres
Plant Communities			
Venturan-Diegan Coastal Sage Scrub (2.3)	537.5 acres	443.9 acres	385.3 acres
Thread-leaved brodiaea			
Population Counts	13 384	6 94	3 16
Wetlands			
Riparian Ecosystems (Dan Smith, June 2003)	160.1 acres	53.4 acres	42.9 acres
ACOE Wetlands (GLA)	17 acres	1.99 acres	0.82 acres
ACOE Non-wetland water (GLA)	20.28 acres	4.01 acres	5.45 acres
Wildlife			
Arroyo Toad (use areas)	6	2	2
Coastal California Gnatcatcher (use areas)	23	13	9
Least Bell's vireo (use areas)	2	0	0
Pacific Pocket Mouse	Occupied Habitat Affected	No Occupied Habitat Affected	No Occupied Habitat Affected
Consistency with NCCP Reserve Design	Low	Low	High

Source: TCA, 2005

The NEPA/Section 404 Collaborative Process

The Preferred Alternative is the product of twenty years of analysis of the southern extension of State Route 241 by local and state transportation planning agencies and six years of extensive discussions and analysis by state and federal transportation and environmental agencies including the U.S. Fish and Wildlife Service, the U.S. Environmental Protection Agency, the U.S. Army Corps of Engineers, the U.S. Marine Corps, the Federal Highway Administration, the California Department of Transportation and the Foothill/Eastern Transportation Corridor Agency. All of the above agencies (collectively known as the "Collaborative") participated in a rigorous six year evaluation of the SOCTIIP pursuant to the provisions of the 1994 Memorandum of Understanding entered into between the federal transportation and resource agencies. Memorandum of Understanding – National Environmental Policy Act and Clean Water Act Section 404 Integration Process for Surface Transportation Projects in Arizona, California and Nevada (the "NEPA/404 MOU").

In 1994, the Federal Highway Administration, the U.S. Environmental Protection Agency, the U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service entered into the NEPA/404 MOU concerning the evaluation of federally-approved transportation projects in Arizona, California and Nevada under NEPA, section 404 of the Clean Water Act and the Endangered Species Act. The NEPA/404 MOU provides the following:

> The signatories to this MOU are committed to integrating NEPA and section 404 of the Clean Water Act in the transportation planning, programming, and implementation stages. We are committed to ensuring the earliest possible consideration of environmental concerns pertaining to waters of the U.S. . . . We place a high priority on the avoidance of adverse impacts to waters of the U.S. and associated sensitive species, including threatened and endangered species. Whenever avoidance of waters of the U.S. is not practicable, minimization of impacts will be achieved, and unavoidable impacts will be mitigated to the extent reasonable and practicable. We will improve interagency cooperation and consultation at all levels of government throughout the process. We will integrate compliance with the Section 404(b)(1) Guidelines with compliance with the National Environmental Policy Act.

The NEPA/404 MOU requires the signatory agencies to the MOU to integrate agency evaluations of highway projects under NEPA, the Clean Water Act and the Endangered Species Act in a single, coordinated process that insures compliance with NEPA, the Clean Water Act and the Endangered Species Act. The NEPA/Section 404 MOU provides for early and continued involvement of the federal transportation and resource agencies with regulatory jurisdiction over transportation projects. The described benefits of the NEPA/404 MOU are to:

2. Improve cooperation and efficiency of governmental operations at all levels, thereby better serving the public,

2. Expedite construction of necessary transportation projects, with benefits to mobility and the economy at large,

3. Enable more transportation projects to proceed on budget and on schedule, and

4. Protect and enhance the waters of the U.S., which will benefit the region's aquatic ecosystems and the public interest.

The NEPA/404 MOU ensures that the requirements of the three major federal environmental laws governing transportation projects are addressed in the NEPA document. The MOU seeks to insure that the Preferred Alternative identified by the Federal Highway Administration under NEPA also satisfies the regulatory requirements of section 404 of the Clean Water Act and section 7 of the Endangered Species Act. In general, section 404 of the Clean Water Act requires avoidance and minimization of impacts on wetlands and other waters of the U.S. when practicable. Section 7 of the Endangered Species Act requires federal agencies to consult with the U.S. Fish and Wildlife Service on impacts to threatened and endangered species and requires the federal agencies to avoid actions that jeopardize the continued existence of threatened and endangered species or that adversely modify critical habitat.

The NEPA/404 MOU includes the following major steps:

1. Development of preliminary agreement on NEPA purpose and need and section 404 basic and overall project purpose, identification of criteria for alternate selection, and identification of project alternatives for evaluation.

2. Holding scoping meetings.

3. Development of Draft EIS including agreement on:

- NEPA purpose and need and section 404 project purpose
- Criteria for alternative selection
- Project alternatives to be evaluated in the draft EIS

4. Coordination of environmental inventory/impact evaluation.

5. Final EIS Development, including.

- Preliminary agreement with Fish and Wildlife Service in the project mitigation plan
- Corps of Engineers and U.S. EPA preliminary identification of least environmentally damaging practicable alternative

6. FHWA Final EIS approval.

7. FHWA Development of record of decision.

8. Corps of Engineers permit decision.

Over the last six years, the members of the SOCTIIP Collaborative process have completed Steps 1 through 4 and are in the process of completing Step 5 of the above progression. The U.S. Army Corps of Engineers and the U.S. Environmental Protection Agency recently issued their preliminary agreement that the Preferred Alternative is the least environmentally damaging practicable alternative. The U.S. Fish and Wildlife Service has preliminarily determined that the Preferred Alternative complies with the requirements of the Endangered Species Act. The following sections briefly describe the process utilized by the state and federal agencies to identify the Preferred Alternative.

Purpose and Need

Sections 2.1, 2.3, 2.4, 2.5, and 2.6 address in detail the screening process used to identify the alternatives analyzed in the Draft EIS/SEIR, including alternatives from earlier phases, the NEPA/404 MOU Integration Process, No Action Alternatives, and Corridor, AIO, and I-5 Alternatives. The Draft EIS/SEIR evaluates eight build and two No Action Alternatives. The Collaborative selected these alternatives for analysis in the Draft EIS/SEIR because of their ability to address the purpose and need of the project and because the alternatives included a broad range of alternatives including six corridor build alternatives, two non-corridor build alternatives and two no action alternatives. The Draft EIS/SEIR also included several land use development scenarios so that the impacts of the alternatives could be compared using different assumptions regarding future growth in the SOCTIIP area.

The purpose of the SOCTIIP is to provide improvements to the transportation infrastructure system that would help alleviate future traffic congestion and accommodate the need for mobility, access, goods movement, and future traffic demands on I-5 and the arterial network in the action area. The Preferred Alternative meets this purpose because it provides the number of traffic lanes necessary to meet forecasted traffic demand through 2025, which is the design forecast year for the SOCTIIP and the planning horizon year for regional plans and socioeconomic forecasts. The Preferred Alternative also

meets the purpose because it accommodates the need for mobility, access, and goods movement by providing increased traffic capacity and because it provides an alternative route to I-5.

One of the project purposes is to improve the projected future level of service (LOS) and reduce the amount of congestion and delay on the freeway system and, as a secondary objective, the arterial network, in southern Orange County. The overall goal is to improve projected levels of congestion and delay as much as is feasible and cost-effective. This may include strategies that lead to a reduction in the length of time LOS F will occur, even if the facility will still operate at LOS F for a short period of time, if the strategy will result in benefits to the traveling public and more efficient movement of goods by reducing total delay. The Preferred Alternative furthers this objective by increasing overall regional capacity and reducing congestion on I-5 and local arterials.

For additional information regarding the purpose and need of the project, refer to Section 1.0 of the Response to Comments document.

Process for Identification of the Preferred Alternative

Selection of the Preferred Alternative represents a coordinated balanced approach to minimizing harm to both the natural and built environments.

The Draft EIS/SEIR included a comprehensive evaluation of six corridor build alternatives, two non-corridor build alternatives and a two no build alternative. After release of the Draft environmental document and review of the comments received on the Draft EIS/SEIR, the SOCTIIP Collaborative began a multi-dimensional evaluation of the alternatives in order to identify a Least Environmentally Damaging Practicable Alternative (LEDPA). Using Table ES.6-1 and other information in the Draft EIS/SEIR, the Collaborative prepared a comprehensive matrix to assist SOCTIIP Collaborative in evaluating the alternatives using several parameters including: traffic conditions, air quality, aquatic resources (including compliance with Section 404 of the Clean Water Act/CDFG Streambed Alternation Program), water quality, endangered species impacts (including compliance with Section 7 of the ESA), socioeconomic impacts, land use impacts, military impacts on MCB Camp Pendleton, earth resources, cultural and historic resources, recreational resources, and project costs. The Collaborative used this multi-layer process to determine which alternatives were likely to qualify as the LEDPA. For more information on the LEDPA selection process, refer to Section 2.0 of the Final SEIR.

The Collaborative thoroughly reviewed and discussed the evaluation matrix at several SOCTIIP Collaborative meetings. The Collaborative used the evaluation matrix to screen those Alternatives that might qualify as the least environmentally damaging practicable alternative. The Collaborative determined that the shorter alternatives (CC-ALPV and A7C-ALPV) do not provide a substantial improvement in traffic conditions but do result in less affects to the natural environment because these alignments were shorter and crossed areas that had recently been developed. The CC Alternative while providing good traffic relief entails very substantial adverse impacts on the human and built environment and on socioeconomics because it requires the removal of 763 homes and 106 businesses. The CC Alternative also has adverse impacts to endangered species, habitat loss and fragmentation, and has high wetland impacts. The full-length alternatives (FEC-M, FEC-W and A7C-FEC-M) perform well in traffic relief, minimize impacts on the built environment (because they do not require acquisition of homes or businesses) but have adverse impacts to endangered species, habitat loss and fragmentation, and wildlife connectivity.

Recognizing that the selection of the Preferred Alternative required a assessment of its regional significance, the SOCTIIP Collaborative agreed that the selection of the Preferred Alternative required a balanced approach that evaluated the compatibility of the Preferred Alternative with the ongoing Orange

County Southern Natural Community Conservation Plan (NCCP) and Special Area Management Plan (SAMP) processes. The Collaborative agreed to consider the alternatives in relation to the evaluation matrix and the NCCP and SAMP planning processes. These planning processes have implications for the SOCTIIP because they will determine the location and extent of development and open space uses in the SOCTIIP study area.

The Collaborative recognized that the impacts of a preferred alternative could be further reduced by insuring that the alternative is located as much as possible in an area contemplated for development in the NCCP and SAMP. Doing so has the further advantages of minimizing fragmentation of habitat and minimizing cumulative and growth-inducing impacts.

Practicability

The Collaborative considered the regulations, guidance documents prepared by the U.S. Army Corps of Engineers and the U.S. EPA concerning the NEPA/404 MOU and the Section 404(b)(1) Guidelines for the discussion of practicability. The 404(b)(1) Guidelines define the concept of a "practicable alternative" as one that is available[5] and capable of being done[6] after taking into consideration: (1) cost[7]; (2) existing technology; and (3) logistics in light of the overall project purposes.

The Collaborative measured each alternative against the criteria described in the Section 40-4(b)(1) Guidelines, guidance documents and applicable case law. The NEPA/404 guidance paper lists seven criteria for evaluating the practicability of alternatives, six of which are relevant to SOCTIIP (one is transit-related). According to the Guidance Paper, an Alternative is not considered practicable if:

a. It does not meet the project purpose and need;
b. Cost of construction (including mitigation) is excessive;
c. There are severe operational or safety problems;
d. There are unacceptable adverse, social, economic, or environmental impacts;
e. There would be serious community disruption;
f. There are unsuitable demographics (for transit Alternatives); and
g. There are logistical or technical constraints.

The Collaborative applied the seven criteria listed to the eight SOCTIIP Alternatives. Based on that evaluation, the following SOCTIIP Alternatives were determined to be not practicable: Central Corridor (CC) (yellow); Central Corridor-Avenida La Pata (CC-ALPV) (light orange); Alignment 7 Corridor-Avenida La Pata (A7C-ALPV) (dark orange); Arterial Improvements Only (AIO) (blue); the I-5 Widening Alternative (I-5) (red); and the No Action Alternatives.

The reasons for the determinations are as follows:

Criterion 1: It does not meet the project purpose and need
- No Action Alternatives

Criterion 2: Cost of construction (including mitigation) is excessive
- CC Alternative

[5] "Available" means obtainable for meeting the project purposes. Available site may include property already owned by a permit applicant, as well as properties that could be obtained, utilized, expanded, or managed.

[6] "Capable of being done" means that it is possible to achieve the basic purpose on a given site, after consideration of cost, existing technology, and logistics.

[7] If an Alternative is unreasonably expensive to the applicant, the Alternative is not practicable.

- I-5 Widening Alternative
- A7C-ALPV Alternative
- AIO Alternative

Criterion 3: There are severe operational or safety problems
- CC Alternative

Criterion 4: There are unacceptable adverse, social, economic, or environmental impacts
- CC Alternative (aquatic resources, built environment and social and economic impacts)
- CC-ALPV Alternative (aquatic resources, built environment and social and economic impacts)
- A7C-ALPV Alternative (built environment, social and economic impacts)
- AIO Alternative (built environment, social and economic impacts)
- I-5 Widening Alternative (built environment, social and economic impacts)

Criterion 5: There would be serious community disruption
- CC Alternative
- CC-ALPV Alternative
- A7C-ALPV Alternative
- AIO Alternative
- I-5 Widening Alternative

Criterion 6: There are unsuitable demographics
- None. (This criterion applies to mass transit Alternatives, not highway Alternatives)

Criterion 7: There are logistical and technical constraints
- AIO Alternative
- I-5 Widening Alternative

Using the above criteria, FHWA, Caltrans and TCA proposed that the Collaborative consider the Far East Crossover-Modified (FEC-M) (purple); the Far East Crossover-West (FEC-W) (lavender); and the Alignment 7 Corridor-Far East Crossover-Modified (A7C-FEC-M) (green) to be practicable alternatives for further consideration by the Collaborative.

After review and discussion of the joint proposal, the Collaborative agreed that the AIO Alternative and the I-5 Widening Alternative were not practicable because of the absence of funding sources for these alternatives. The Collaborative also recognized the severe community disruption that would occur with implementation of the CC Alternative, CC-ALPV Alternative, and the A7C-ALPV Alternative. The Collaborative then evaluated whether the above alignments could be further modified to avoid severe community disruption.

The Collaborative agreed that it would consider all factors related to the human and natural environment when identifying a practicable alternative that results in least environmental harm, i.e., the LEDPA.

Comparison of A7C-FEC-M, FEC-W and FEC-M Alternatives

The Collaborative agreed that there were opportunities to adjust the A7C-FEC-M, FEC-W and FEC-M alternatives to accomplish further avoidance of impacts. Several members of the Collaborative agreed that the A7C-FEC-M alternative appeared to be less environmentally damaging than the FEC-W and FEC-M alternatives. To further evaluate the practicability of these three alternatives, the TCA, FHWA, and Caltrans reviewed and compared the individual impacts of each alternative. The comparison indicates that the A7C-FEC-M Alternative is environmentally preferable to the other two alternatives.

Advantages of the A7C-FEC-M that were considered in the selection process are presented briefly below.

Preservation of Large Blocks of Open Space and Retention of Wildlife Corridors. The FEC-W and FEC-M cross Cañada Gobernadora and bifurcate open space areas east of the A7C-FEC-M Alternative. The FEC-M alternative has the greatest impact on existing open space and has an adverse impact on retention of large blocks of open space on the RMV property. The FEC-M alternative is in very close proximity to Cristianitos Creek and impacts a large number of thread leaved brodiaea plants. The A7C-FEC-M Alternative (the Preferred Alternative), with its more western location minimizes impacts on open space areas by being located in proximity to existing development and within the areas approved for development in the Ranch Plan. It allows for retention of large blocks of open space east of the alignment and retains major wildlife movement corridors and allows greater wildlife connectivity between the RMV property and the Cleveland National Forest.

The Preferred Alternative incorporates bridges and wildlife crossings into the design to minimize the effect of habitat fragmentation. The NCCP/HCP identifies several important linkages connecting these open space habitat block areas. Out of the 20 habitat linkages and wildlife movement areas identified from field surveys in the NCCP/HCP planning area, 15 are applicable to the wildlife corridor existing conditions in the SOCTIIP biological study area. Bridge, arch culverts, and box culverts that provide for wildlife undercrossings of the Preferred Alternative have been incorporated into the project design at locations that are consistent with the linkages identified in the NCCP/HCP guidelines.

Consistency with Approved Land Use Plans. The Rancho Mission Viejo Company (RMV) expressed opposition to the FEC-W alternative because of its proximity to the RMV heritage sites (cow camp and the family cemetery).

The Preferred Alternative generally transects the center portion of the Ranch Plan, including Planning Areas 2 and 5 designated for development as well as areas designated as open space (Planning Area 10) in the approved Settlement Agreement Plan. The Preferred Alternative avoids impacts to large areas dedicated to resource open space in the eastern portion of the Ranch Plan referred to as the "Eastern block." Overall, the alignment would impact approximately 257 acres acreage designated for resource open space in the Ranch Plan reflected in the Settlement Agreement. This occurs where the Preferred Alternative traverses the northern portion of Planning Area 2 within the area from Planning Area 2 over San Juan Creek into Planning Area 5. A portion of this impact from the Preferred Alternative represents the alignment on bridge structure. Figure 2.1 in the Response to Comments document illustrates the compatibility of the Preferred Alternative with the proposed Ranch Plan and future NCCP design, and demonstrates that the SOCTIIP Preferred Alternative is compatible with both these regional planning processes.

Benefits of the Preferred Alternative

Congestion Relief and Increased Mobility. The I-5 freeway in south Orange County, between El Toro Road and the county line, will realize considerable traffic benefits from construction of the Preferred

Alternative. With implementation of the Preferred Alternative, the deficient segments are reduced to only 3 segments in the AM and 3 segments in the PM peak periods. Traffic forecasts for the year 2025 indicate that if the No Action Alternative is adopted there will be 10 deficient segments in the AM and 10 deficient segments in the PM peak hour periods along this segment of the I-5.

Another benefit of the Preferred Alternative is that the I-5 freeway segments that are deficient will remain that way for a much shorter period of time when compared to the No Action scenario. For example, in 2025 under the No Action Alternative four sections of the I-5 between Ortega Highway and Camino Estrella are forecast to experience more than 4 hours of LOS F congestion in the PM. With construction of the Preferred Alternative, only one of these segments, between Ortega Highway and Camino Capistrano, will be deficient and the time in which the congestion will last is reduced from more than four hours to two hours or less.

Traffic relief on the local arterials is also a component of the project Purpose and Need that is achieved by the Preferred Alternative. In 2025 under the No Action Alternative, there are forecast to be 13 arterial intersections that are considered deficient during AM and PM peak hours. With the Preferred Alternative the number of deficient intersections is reduced from 13 to 4 in the AM and from 13 to 6 in the PM peak hours.

Forecasts for the year 2025 indicate that traffic congestion on the I-5 and local arterials in south Orange County will increase significantly from present levels. Implementation of the Preferred Alternative will result in considerable beneficial affects that will reduce the anticipated traffic congestion.

Compatibility with Regional Planning: The TCA evaluated the Preferred Alternative for its compatibility with the Natural Communities Conservation Plan (NCCP) and the proposed Rancho Mission Viejo Ranch Plan. The Preferred Alternative is compatible with the Ranch Plan as reflected in the Settlement Agreement because the Preferred Alternative is located adjacent to existing development or within the areas shown for development in the Ranch Plan and Settlement Agreement wherever feasible. As a result, the Preferred Alternative retains the large blocks on open space contemplated for RMV property in the Ranch Plan and the Settlement Agreement. The NCCP is anticipated to be similar to the Ranch Plan as reflected in the Settlement Agreement. Also refer to Responses to Comments Attachment 10 "SOCTIIP Analysis of the NCCP/HCP Planning Guidelines and SAMP/MSAA Watershed Planning Principles" for a complete analysis of the Preferred Alternative compatibility/consistency with NCCP/HCP reserve design guidelines and the SAMP/MSAA Watershed Planning Principles.

Improved Water Quality on I-5: I-5 currently has no water runoff treatment system in the vicinity of Trestles beach. With each storm event, untreated water from the I-5 freeway runs directly into the creeks and ocean, potentially polluting Trestles Beach. TCA will install treatment systems meeting Regional Water Quality Control Board standards on an approximately two-mile portion of I-5 north and south of the connection to SR-241. SOCTIIP would construct extended detention facilities to treat the runoff from this existing portion of I-5 as well as the new connector roadways from the project. Based on engineers' calculations, nearly one million gallons of runoff per design water quality storm event would receive treatment with the project. Over the past two years of record, about five design water quality events have occurred annually. Using this estimate, the project would treat five million gallons of water each year that currently flows untreated into San Onofre and San Mateo Creeks.

Avoids/Minimizing Environmental Impacts:

The Preferred Alternative has the following additional environmental benefits:

- It avoids impact to high value wetlands in the Tesoro wetlands area – ramps for the Oso Parkway Interchange were shifted to the east to avoid Tesoro Wetlands.
- It avoids crossing of Cañada Gobernadora which is the location of Gobernadora Environmental Reserve Area.
- It bridges over San Juan Creek. A 2,100-foot long and 60-foot high bridge structure will cross over San Juan Creek allowing virtually unobstructed water flow and continued wildlife movement.
- It minimizes visual impacts to Talega residents by keeping the alignment behind a natural ridgeline. Extensive design effort to locate the alignment behind the existing ridgeline to minimize view of the road by homeowners.
- It avoids the Blind/Gabino wetlands located at he confluence of Blind Canyon and Gabino Canyon
- It avoids occupied Pacific Pocket Mouse habitat.
- It bridges over San Mateo Creek. TCA minimized impacts to jurisdictional waters by reducing the size and number of structural supports in San Mateo Creek by locating those required structural columns outside of high value jurisdictional resources. In order to reduce the number of structural columns, TCA maximized bridge span by increasing the structural strength of the bridge and increasing the bridge depth. The 3,200 feet long bridge over San Mateo Creek and existing I-5 minimizing impacts to San Mateo creek and wetlands.

Least Environmentally Damaging Practicable Alternative (LEDPA)

The agencies represented in the Collaborative rigorously evaluated the alternatives described in the technical reports and in the Draft EIS/SEIR.

The NEPA/Section 404 MOU establishes a step-wise process for the federal transportation and environmental agencies to identify the project Purpose and Need, select alternatives for evaluation in the Draft EIS/SEIR, and select the Preferred Alternative and Least Environmentally Damaging Practicable Alternative (LEDPA).

Section 404 of the Clean Water Act (CWA) requires that all appropriate and practicable steps must be undertaken by the applicant to first avoid and then minimize adverse impacts to the aquatic ecosystem prior to incorporating compensatory mitigation. The Refinement Process discussed in Section 4.10 of the Draft EIS/SEIR as well as the PDFs and BMPs discussed in Sections 4.8, 4.9, 4.10 and 4.11 provide the framework for avoidance and minimization of impacts to jurisdictional waters to the maximum extent practicable.

Specifically, direct impacts to both wetlands and non-wetland waters were avoided and/or minimized during the Refinement Process discussed in Section 4.10 in the Draft EIS/SEIR. Avoidance and minimization measures included refining the grading limits to reduce cut and fill by following natural contours, placement of bridge structures across major high order drainages, and shifting the alignment to avoid sensitive resources, including the Tesoro Wetlands area. Additionally, TCA sought to minimize impacts to jurisdictional waters by reducing the size and number of structural supports and by locating those required structural columns outside of high value jurisdictional resources. In order to reduce the number of structural columns, TCA maximized bridge span by increasing the structural strength of the bridge and increasing the bridge depth.

A more detailed description of aquatic resources and associated acreages is provided in Section 4 of the Wetlands Delineation Technical Report (Glenn Lukos Associates [GLA] 2004), which has been verified by the ACOE, and is included as Attachment 12 to the RTC document. The Wetlands Delineation Technical Report was prepared for impacts associated with the SOCTIIP Alternatives, consistent with recommendations from the ACOE. The Alternatives evaluated in the delineation include the CC, CC-ALPV, A7C-ALPV, A7A-FEC-M, FEC-M and FEC-W Alternatives. Table 1.3-2 in the Wetlands Delineation Technical Report (GLA 2004) provides a quantitative summary of impacts to Waters of the United States (WoUS), including wetland and non-wetland waters, for each alternative.

ACOE will make the final decision on the LEDPA and a determination of compliance with the Section 404 (b)(1) Guidelines during the 30-day review period for the FEIS.

Because it was the goal of the Collaborative to select a Preferred Alternative that would also be selected as the LEDPA, the evaluation and screening of the SOCTIIP Alternatives included evaluation of the Alternatives according to the NEPA/404 Evaluation criteria. The Collaborative applied the definition of "practicability" adopted by the Corps of Engineers and the U.S. EPA in the section 404(b)(1) Guidelines. A summary of the evaluation criteria and screening process is provided below.

Evaluation Criteria and Screening Process

Summary of Jurisdictional Delineation Evaluation. A Jurisdictional Determination and Wetlands Delineation Technical Assessment was prepared for six of the project Alternatives in August 2004 and revised in April 2005 by Glenn Lukos Associates, Inc. (GLA). The report is Attachment 12 of the Response to Comments document. The Wetlands Delineation Technical Report describes the location and extent of aquatic features located within the disturbance limits of six of the corridor alternatives considered in the EIS/SEIR. The impacts of the six corridor alternatives are compared in Table 3 below.

Table 3
Summary of Permanent Impacts to Corps Jurisdiction (acres)

Alternative	Corps		
	Total	Non-Wetland	Wetland
Preferred Alternative (A7C-FEC-M – Initial)	6.27	5.45	0.82
A7C-FEC-M Ultimate	6.90	5.97	0.93
CC – Initial	14.87	1.47	13.40
CC - Ultimate	15.08	1.51	13.57
CC-ALPV - Initial	12.38	0.97	11.41
CC-ALPV - Ultimate	13.39	1.01	12.38
A7C-ALPV - Initial	2.52	1.96	0.56
A7C-ALPV - Ultimate	3.34	1.98	1.36
FEC-W - Initial	6.69	4.07	2.62
FEC-W - Ultimate	6.96	4.32	2.64
FEC-M - Initial	5.44	3.73	1.71
FEC-M - Ultimate	6.02	4.04	1.99

Source: Glen Lukos 2004

In the planning level impact analysis conducted by the ERDC (Potential Impacts of Alternative Transportation Corridors on Waters of the U.S. and Riparian Ecosystems for the Southern Orange County Transportation Infrastructure Improvement Project, 2003), provided in the Draft EIS/SEIR the analyses

assume that all drainages within the disturbance limits are permanently filled. This initial functional assessment conducted by ERDC did not account for bridges or culverts, but assumed a complete fill; this resulted in higher than actual estimates for post-project reductions in aquatic function. More recently, at the ACOE request, an updated functional assessment has been prepared by R.D Smith of ERDC which clarifies the impact analyses addressing the avoidance of impacts by the construction of bridges and culverts.

Review of the results indicate that of the eight categories evaluated (Criteria 1, 2, 3a, 3b, 3c, 4a, 4b and 4c), the Preferred Alternative is ranked best in four categories (3a, 3b, 3c and 4a), second in two categories (2 and 4b), fourth in one category (1) and fifth in one category (4c). Being ranked at the top in four categories is the best for any of the alternatives evaluated. The normalized rank score for each of the integrity indices evaluated in the functional assessment for each the six corridor alternatives is provided in Table 4 below.

Table 4
Normalized Rank Scores for all Criteria and Corridor Alternatives for the Initial Corridor Footprints

Corridor Alternatives (Initial)	Criteria 1: Miles of Stream Channel	Criteria 2: Acres of Riparian	Criteria 3: Hydrology	Criteria 3: Water Quality	Criteria 3: Habitat	Criteria 4: Hydrology	Criteria 4: Water Quality	Criteria 4: Habitat	Total Normalized Rank Scores
A7C-ALPV	0.4	0.4	0.4	0.5	0.4	0.6	0.5	0.7	3.9
A7C-FEC-M (Preferred Alternative)	0.8	0.3	0.2	0.2	0.2	0.4	0.6	0.9	3.7
CC ALPV	0.7	0.9	0.9	0.9	0.9	0.9	0.9	0.9	7.0
CC	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	8.0
FEC-M	0.9	0.4	0.4	0.4	0.4	0.9	1.0	0.9	5.2
FEC-W	0.7	0.2	0.2	0.2	0.2	0.5	0.7	0.7	3.6

Source: R.D. Smith, ERDC, 2005

The Jurisdictional Determination and Wetlands Delineation Technical Assessment quantify impacts to wetlands and the Updated Functional Assessment quantifies loss of function. Together, these two technical analysis documents will provide the ACOE with the information required to ensure a complete understanding of the nature and degree of impact of the proposed discharge resulting from the SOCTIIP Alternatives. See Section 4.10 of this Final EIS/SEIR, and both Attachment 12 and Attachment 16 of the RTC document, for more information on these technical evaluations.

Summary of Biological Resources Evaluation. The proposed project will involve removal of vegetative resources that are known to provide or may have the potential to provide habitat for ten federally-listed threatened, endangered, or proposed wildlife and plant species. Threatened and endangered wildlife species and plant species that may or will be directly affected by implementation of the Preferred Alternative are the tidewater goby, southern steelhead trout, arroyo toad, coastal California gnatcatcher, and thread-leaved brodiaea. The thread-leaved brodiaea is also state listed.

Threatened and endangered plant species that would not be directly impacted, and for which potential habitat is available, are as follows: Braunton's milk-vetch, Nevin's barberry, spreading navarretia, Orcutt's grass, and Gambel's watercress.

The following threatened and endangered wildlife species would not be directly impacted, but potential habitat for them is available in the project area: vernal pool fairy shrimp, San Diego fairy shrimp,

Riverside fairy shrimp, Quino checkerspot butterfly, California red-legged frog, least Bell's vireo, southwestern willow flycatcher, and Pacific pocket mouse.

The Preferred Alternative selected by the TCA and FHWA includes many conservation and avoidance methods to minimize impacts to the natural environment, including adverse impacts to sensitive species and other natural resources. Indirect impacts will be limited through project design features. For example, the drainage and water quality features will prevent water quality impacts to sensitive species. The Preferred Alternative will limit lighting to areas around toll plazas and interchanges, and low-light design features will be incorporated to the maximum extent feasible while maintaining consistency with Caltrans design standards. (See Project Design Features described in Section 2.5.1.7). Table 4 includes information regarding the conservation and avoidance features of the location refinement to the Preferred Alternative.

Community Impacts. The proposed southern extension of existing SR-241 has been subject to planning efforts for over 20 years and has been on the County of Orange MPAH since 1981. Therefore, development in the study area has been able to anticipate and accommodate the future implementation of a transportion facility in this area. The potential direct and indirect effects of the Preferred Alternative on existing land uses are reduced by the siting of the proposed facility to minimize impacts to existing uses, combined with existing topography and committed open space areas that separate the Preferred Alternative from existing residential uses.

The Preferred Alternative does not result in direct or indirect impacts to existing homes and businesses, Chiquita Water Reclamation Plant, or the Prima Deshecha Landfill. Although the Preferred Alternative is adjacent to Tesoro High School, it would not result in direct or indirect adverse impacts to this land use. Because Tesoro High School was constructed with the knowledge of the proposed extension of the Foothill Corridor, the Final EIR for the high school included measures to mitigate potential indirect noise impacts associated with a transportation facility in the area of the SOCTIIP corridor Alternatives. There are no significant adverse indirect impacts to existing homes due to the distance from the proposed alignment, combined with existing topography and the existing buffer provided in the Talega residential development.

Consideration of Other Factors

Marine Corps Base – Camp Pendleton. The Department of the Navy (DON) owns the property on which the Preferred Alternative traverses the Marine Corps Base in San Diego County. In 1988, the Marine Corps agreed that only one potential alignment of the proposed extension of the Foothill South project could be evaluated on Camp Pendleton as long as it met certain criteria, the most important of which was that any on-Base portion of this proposed toll road must be as closely located to the northern Base boundary as possible and it must be routed in such a manner that it does not impact the Marine Corps mission nor interfere with Camp Pendleton's operational flexibility. The Preferred Alternative (for that section of the toll road which crosses through Camp Pendleton) meets the Marine Corps criteria.

SOSB is located entirely on lands leased from the DON; the State does not own the land. SOSB is operated by the State, pursuant to a 1971 agreement of lease (the "lease") with the United States. The California Department of Parks & Recreation (CDPR) lease with the United States is specifically subject to the reserved right of the United States to grant additional easements and rights-of-way over the leased property. Thus, in implementing the authority to lease, CDPR agreed –that the United States may grant a right-of-way to a third party. Congress has adopted legislation authorizing the Navy to grant to the TCA an easement within this portion of Camp Pendleton.

San Onofre State Beach. The Preferred Alternative extends south through Subunit 1 of San Onofre State Beach (SOSB), leased from MCB Camp Pendleton, impacting biological and habitat resources value, and the overall size of the SOSB Subunit1. No camping sites in the San Mateo Campground would be removed as a result of implementation of the Preferred Alternative, but the Preferred Alternative has visual and aesthetic impacts on the camping experience at the San Mateo Campground. No impacts to the SOSB Trestles Subunit (Subunit 2) are expected as a result of the elevated ramp connecting the Preferred Alternative to I-5. Continued access to Trestles Beach will be provided during and after construction of the Preferred Alternative and, as described in Section 4.25, there will be no changes to sediment and no effect on the quality of the surf.

Construction activities associated with implementation of the Preferred Alternative could impact Camp Pendleton San Onofre Recreation Beach. Impacts to recreation uses at San Onofre Recreation Beach would relate mostly to noise, access, and dust during construction. These short-term impacts would not change land uses at San Onofre Recreation Beach or military uses at Green Beach.

The Donna O'Neill Land Conservancy. The Preferred Alternative takes land in The Conservancy. The SOCTIIP Collaborative agreed that the beneficial affects of the Preferred Alternative crossing into the western portion of The Conservancy outweighed the potential impacts. The benefits include: greater habitat connectivity into eastern Orange County; avoidance of high value aquatic resources including wetlands in the Blind Canyon/Gabino Canyon confluence; keeping in close proximity to neighboring development thereby minimization habitat fragmentation; and minimization of view shed impacts to residents in developed areas of San Clemente, including Talega. The Conservancy would be compensated for this impact. The TCA has initiated discussions with The Conservancy Board of Directors and the landowner to discuss right-of-way acquisition and potential mitigation strategies for impacts to The Conservancy. Mitigation strategies presented to The Conservancy included open space land for additional set-aside areas, either contiguous or non-contiguous to the existing Conservancy, monetary compensation to The Conservancy.

Section 4(f) Resources/Cultural. There are 23 identified cultural resource sites within the Preferred Alternative. Of these, six have been determined, in consultation with the SHPO, ineligible for the NRHP under any criteria. Nine of the identified cultural resource sites have been determined eligible for listing on the NRHP. Of the sites that are eligible for the NRHP, three are located within the RMV Lands, and are eligible under Criterion D only. The remaining six NRHP-eligible sites are elements of the San Mateo Archaeological District (SMAD) and are considered eligible under Criteria A and D. The SMAD is also considered a Traditional Cultural Property by local Native American Groups. Eight of the identified resources have not been formally evaluated, in consultation with the SHPO, for eligibility. The eight unevaluated resources are located within the RMV Lands, Conservancy Land, adjacent to the Talega Development, and along I-5 in San Diego. Mitigation Measures are provided that will minimize or mitigate impacts to these resources to the extent feasible. In addition, avoidance of these resources within the Preferred Alternative Study Area have also been investigated, and avoidance has been achieved for two resources considered the "core" of the SMAD (CA-ORA-22 and CA-SDI-8435). Where possible, ground disturbing impacts of the Preferred Alternative were placed on deflating landforms where there is little likelihood of buried components for impacted 4(f) resources.

Preferred Alternative and LEDPA Selection

Of the three corridor alternatives remaining after the practicability analysis, the A7C-FEC-M-Initial corridor with design modification incorporated was selected by the Collaborative as the Preferred Alternative. In addition to meeting the seven criteria for evaluating the practicability of alternatives listed in the NEPA/404 MOU Guidance Paper and being better or comparable to the other two alternatives in terms of impacts to aquatic and biological resources the Preferred Alternative allows the greatest wildlife

connectivity and is more compatible with local existing land use plans. More specifically, the Preferred Alternative was selected over the FEC-M Alternative because it does not cross Cañada Gobernadora and it minimizes impacts on open space areas contemplated by the RMV Ranch Plan. The Preferred Alternative was selected over the FEC-W Alternative because it is more compatible with the proposed RMV development plans and the anticipated NCCP reserve design, does not impact RMV heritage sites, and it does not cross Cañada Gobernadora.

Selection of the Preferred Alternative represents a coordinated balanced approach to minimizing harm to both the natural and built environments. The A7C-FEC-M as the Preferred Alternative culminates years of analysis and evaluation, engineering refinement, inter-agency consultation and coordinated consensus. ACOE will make the final decision on the LEDPA and a determination of compliance with the Section 404 (b)(1) Guidelines during the 30-day review period for the FEIS.

COMMON RESPONSE: ALTERNATIVES – 1

Reasonable Range of Alternatives

The California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA) require that a reasonable range of alternatives be evaluated in the environmental document for a project. Under CEQA, alternatives should be developed that would avoid or substantially lessen significant environmental impacts of the project. Under NEPA, the range of alternatives must achieve the proposed action's objectives as incorporated into the Statement of Purpose and Need. An Environmental Impact Report (EIR)/Environmental Impact Statement (EIS) need not consider every conceivable alternative to a project, but rather a reasonable range of alternatives that could meet the project objectives and the purpose and need of the proposed action.

The analysis in the EIS/Subsequent Environmental Impact Report (SEIR) considers all eight (six toll road (with initial and ultimate configurations for each), one arterial and one I-5) Alternatives at an equivalent level of detail. In addition, a wide range of possible Alternatives was considered by the SOCTIIP Collaborative as addressed in Section 2.5 (Alternatives Eliminated from Further Study) in the Draft EIS/SEIR, including different Alternatives for I-5 and Alternatives that considered combinations of improvements to I-5 and the arterial highway network. As discussed in Section 2.5 in the Draft EIS/SEIR, a wide range of non-toll road Alternatives was considered, including the arterial and I-5 Alternatives advanced for detailed analysis in the Draft EIS/SEIR.

The range of Alternatives considered for evaluation, the range of Alternatives evaluated in the Technical Reports and the range of Alternatives further evaluated in the EIS/SEIR are well documented in the Project Alternatives Technical report and in Chapter 2 of the Draft EIS/SEIR. The process by which the Alternatives were considered, analyzed and selected occurred over the course of years and in collaboration with resource and transportation agencies. The alternatives development process is described in the Draft EIS/SEIR and is summarized below. This process was thorough and ensured that the Collaborative was provided with the detailed information that created a clear basis for decision making.

Planning and Alternatives Development Process

The Foothill Transportation Corridor-South (FTC-S), the proposed southern extension of the Foothill Transportation Corridor-North (FTC-N), has been the subject of ongoing planning efforts for over 20 years. Prior studies completed for the FTC-S include Final Environmental Impact Report (FEIR) 123, which was certified by the County of Orange (County) in 1981. FEIR 123 resulted in the identification of a conceptual alignment for a transportation corridor facility that was placed on the County Master Plan of Arterial Highways (MPAH).

Between 1989 and 1991, the Transportation Corridor Agencies (TCA) prepared TCA EIR No. 3 in conformance with the requirements of CEQA, which addressed the C and BX road alignments, selected as part of the Alternatives Analysis phase of the project, as the primary build Alternatives. This effort concluded with the EIR being certified and the locally Preferred Alternative being selected by the TCA's Foothill/Eastern Board of Directors. The locally Preferred Alternative is the conceptual alignment represented on the MPAH.

In early 2000, the SOCTIP Collaborative obtained the services of a Neutral Senior Transportation Planning Expert (John Long of DKS Associates) to serve as a third-party peer review for traffic modeling and alternative selection criteria analysis and to assist the Collaborative in determining the most suitable Alternatives for evaluation. In November 2000, the SOCTIIP Collaborative concurred on the

Alternatives to be evaluated in the technical studies. The Collaborative selected 24 Alternatives for evaluation in the technical analysis. These include 19 toll road Alternatives, 3 non-toll road Alternatives, and 2 No Action Alternatives.

During Phase II of the SOCTIIP Collaborative (January 2001–Present), the TCA sought to further refine the Alternatives in order to focus planning efforts on those Alternatives that best met the purpose and need for the project while minimizing impacts to sensitive environmental resources. In the course of this analysis, it was determined that the land use and socioeconomic impacts of the Alternatives that connected to the I-5 at Pico could not be appreciably avoided by specifically refining those Alternatives. Development in the City of San Clemente had increased substantially, especially in the previously undeveloped areas where the Foothill-South Corridor alignments were proposed. The Collaborative, recognizing that impacts to residences and businesses could not be avoided through refinement, focused instead on re-evaluating and modifying, as necessary, those Alternatives that connected to I-5 near the Orange/San Diego County border.

For further details in the planning and alternatives development process, see Common Response: Preferred Alternative–1.

Regional Transportation Planning Context for Alternatives Development and Alternative Modes of Transportation

Individual transportation projects function within a larger transportation network of existing and planned facilities and programs. Regional transportation planning in the southern California region (comprised of Los Angeles, Orange, Riverside, San Bernardino, Imperial and Ventura Counties) is conducted by the Southern California Association of Governments (SCAG). Regional planning in San Diego County is conducted by the San Diego Association of Governments (SANDAG). Both SCAG and SANDAG prepare a Regional Transportation Plan (RTP) that provides the framework for ground and aviation transportation planning in the region. Proponents of individual projects, such as Counties, Cities and transportation agencies, coordinate with SCAG and/or SANDAG through the regional transportation planning process in order to ensure that proposed facilities will complement the existing and planned transportation network in the region. Thus, planning for major transportation projects is subject to an iterative process between local and sub-regional transportation planning agencies and SCAG and/or SANDAG.

Some comments state that a broader range of Alternatives should have been considered in the Draft EIS/SEIR, including non-toll road Alternatives, such as congestion pricing, high occupancy toll (HOT) lanes, parking pricing and management, infill encouragement, developer fees to encourage more efficient use of land, arterial improvements, expansion of mass transit infrastructure and programs, or modifications to the existing I-5 corridor such as widening and double-decking. With the exception of modifications to the I-5 corridor, which is addressed later in this common response, the comment identifies regional and sub-regional strategies designed to reduce and/or manage the growth in demand for transportation infrastructure. These and other strategies to meet regional transportation demand are considered and planned for by SCAG and/or SANDAG in the RTP.

The regional transportation planning agencies rely on a number of strategies to address the region's transportation needs, including: preservation of existing infrastructure; operational strategies to maximize the efficiency of the current system (for example, though congestion management improvements such as auxiliary lanes and advanced ramp metering); transportation demand management (for example, though the incentives for the use of alternative modes of transportation, such as rideshare and transit); highway and arterial improvements (including HOT lane facilities, inter-county corridors, and planned toll roads

such as FTC-South); public transportation facilities and services (including bus and bus rapid transit, metrolink commuter rail and transit-oriented development); and goods movement strategies (including additional investments along high truck demand routes and regional rail capacity improvements). In addition to ground transportation, SCAG looks at regional aviation issues, including aviation planning to use available capacity at airfields in the region (Source: 2004 Regional Transportation Plan, SCAG).

As summarized above, a combination of a full range of strategies and improvement projects to meet future travel demand in the region are considered by the regional transportation planning agencies. The proposed FTC-S project was first approved at the sub-regional level by the Orange County Transportation Authority (OCTA) and included on the Orange County MPAH in 1981. The planned improvements in the MPAH, along with the planned improvements in other local and sub-regional transportation plans, are considered for inclusion in the RTP. The FTC-South project continues to be identified as an important regional transportation project on the most current (2004) RTP.

The proposed SOCTIIP project is identified in the SCAG RTP as a Tier-2 level project (see Exhibit 4.6 of the 2004 RTP) and is intended to implement a project that has been included in the approved RTP for many years. The proposed SOCTIIP is also identified in the SANDAG RTP, Final April 2003 (see Table A.1 of the April 2003 RTP). It is not necessary for the SOCTIIP project to reconsider the range of regional and sub-regional transportation demand and management Alternatives already considered and planned for by SCAG and SANDAG. The range of Alternatives identified for evaluation in the SOCTIIP Draft EIS/SEIR includes a reasonable range of feasible Alternatives to meet the project objectives and the purpose and need of the proposed action.

Comment O21-116 suggests "double-decking" I-5 as an Alternative means of providing needed transportation capacity in the study area. Double-decking of some or all of the alignment of the I-5 Alternative was considered as an Alternative (pages 2-59 to 2-60 in the Draft EIS/SEIR). However, this Alternative was not advanced for future consideration by the Phase I Collaborative and was not evaluated in the SOCTIIP Draft EIS/SEIR due to design and safety constraints, including third level elevation requirements, the need for reversible lanes in an elevated structure, limited access, more complex interchanges, additional width at ingress/egress locations and safety/traffic enforcement concerns. This Alternative would not reduce the adverse environmental impacts of improvements to I-5 and would likely have substantial adverse impacts to the communities adjacent to the double-decked segments.

Non-Road Alternatives

Several comments suggest that non-road Alternatives, in addition to the two No Action Alternatives, should have been evaluated in the Draft EIS/SEIR.

As described above, regional and sub-regional transportation demand and management strategies to address future traffic demand are considered and planned for by SCAG and SANDAG. These "non-road" strategies are intended to maximize the effectiveness of existing and planned improvements, and were found to not be a reasonable Alternative to the proposed project of meeting future regional traffic demand in the study area. Specifically, both a TSM Alternative and a transit-only alternative were considered but rejected for further evaluation. Refer to Chapter 2 of the Draft EIS/SEIR and the Project Alternatives Technical Report for more information.

A combination of a number of TSM strategies was examined as a possible SOCTIIP Alternative but not carried forward to the Draft EIS/SEIR because these strategies were already being implemented or programmed for implementation in Orange County, were found to have limited transportation benefit relative to the need for the proposed project, and/or were found to have greater impacts to existing communities with little to no increased transportation benefit as compared with Alternatives that were

carried forward. In sum, it was determined that identifying transportation demand and management strategies as one Alternative would have failed to meet the stated purpose and need of the project and would have been redundant of current efforts, as they are already reflected in the transportation plan and traffic demand projections for the region by SCAG. While no TSM-only Alternative was carried forward in the SOCTIIP Draft EIS/SEIR, it is anticipated that TSM measures will continue to be implemented by the County of Orange and other agencies, consistent with local, subregional and regional transportation goals and objectives.

Some comments also suggest that the use of mass transit be considered as an Alternative. A mass transit Alternative was considered by the Collaborative but not carried forward to evaluation in the Draft EIS/SEIR, it is addressed in Sections 4.1 and 5.7 of the Project Alternatives Technical Report, and Section 2.5.5 in the Draft EIS/SEIR. Section 4.1.5.6 describes the existing public transit services in the SOCTIIP study area, including public bus, paratransit, commuter rail and intercity rail services. Plans for future rail transit in Orange County are also described. The OCTAM 3.1 traffic model, which is the basis for the traffic forecasting for the SOCTIIP, assumes the OCTA transit services that were in place in September 2000 for the base year conditions. The 2025 transit conditions in the OCTAM 3.1 model, used in SOCTIIP, assume that there will be improvements to select route headways, no new local routes, and an increase of approximately 50 percent in local bus service. Since there are no plans or findings committed to implementing a light rail transit system in Orange County at this time, none are assumed in the OCTAM 3.1 model. The Collaborative considered existing planning for transit improvements by the OCTA, the nature of the existing traffic system in Orange County, and OCTA's analysis of future traffic patterns and travel mode choices by Orange County drivers. Based on these considerations, and the inability of a transit-only Alternative to meet future demand as articulated in the Statement of Purpose and Need for SOCTIIP, the Collaborative chose not to evaluate a mass transit Alternative in the Draft EIS/SEIR.

Other comments also suggest that the SOCTIIP Alternatives should be limited to improvements to the existing street network. The background assumptions for the development of the SOCTIIP build Alternatives included, or assumed, continued improvements to existing arterial streets and to the transit service system, including build out of the MPAH and the RTP, and implementation of planned bus and rail improvements. These planned improvements were found to be insufficient to meet the purpose of the project, which is to alleviate future traffic congestion on I-5 and the arterial street network. Also, the SOCTIIP build Alternatives include two build Alternatives (AIO and I-5 Alternatives), which propose improvements to existing/MPAH facilities in the study area.

Conclusion

The development, review, elimination and further study of Alternatives was performed over the course of several years and under the guidance of the SOCTIIP Collaborative, including representatives of both resource and transportation agencies. The Alternatives considered included a wide range of approaches to transportation capacity enhancement, including non-road Alternatives and non-corridor Alternatives. The Alternatives were developed with the objective of minimizing impacts to sensitive natural resources as well as established communities. The Alternatives evaluated in the EIS/SEIR did not preclude selection of the LEDPA. In conclusion, the alternatives development process was thorough, and it ensured that the SOCTIIP Collaborative was provided with the detailed information that created a clear basis for decision making.

Common Response: Cooperative Agreement – 1

The "Non-Compete Agreement" that is referenced in the comment(s) is part of the larger Cooperative Agreement between the State of California Department of Transportation (Caltrans) and Foothill/Eastern Transportation Corridor Agencies (F/ETCA) that was entered into on May 13, 1993. The purpose of the Cooperative Agreement is to outline the responsibilities and respective obligations of the parties to the Cooperative Agreement, such as liability, ownership, right-of-way, utilities and maintenance. Caltrans agreed that "any and all costs of State in connection with maintenance and operation of the project and oversight of right-of-way, design and construction activities will be borne by the State..." In turn, the F/ETCA is responsible for design and construction of the project that will be financed by grant fund bonds to be issued by the F/ETCA and by development impact fees. Cooperative Agreement documents are routinely drafted by Caltrans for projects that involve other public entities.

As part of the Cooperative Agreement, both the F/ETCA and Caltrans established a non-compete clause to ensure that unforeseen highway projects would not adversely impact the repayment of toll road financing. To ensure that planned and programmed roadway projects would not be impacted, the non-compete covenant exempts all Measure M projects such as: (1) The El Toro Y Interchange Improvement Project that relieved congestion through the Cities of Lake Forest, Tustin and Irvine through construction of collector/distributor lanes, and carpool connectors between Interstate 5 (I-5) and Interstate 405 (I-405). The project began in 1993 and was completed in 1997; and (2) the San Diego Freeway (I-5 South) Improvement Project, which improved a 12-mile section of I-5 through the Cities of San Juan Capistrano, Mission Viejo, Laguna Niguel and Laguna Hills with new carpool and auxiliary lanes in each direction. Most on- and off-ramps at interchanges were modified, and 12,000 feet of sound walls were constructed for nearby residents. The project began in 1994 and was completed in 1996. Also exempted from the non-compete covenant are projects included in the 1992 and 1994 State Transportation Improvement Program, the Master Plan of Arterial Highways (1992) and the Orange County Transportation Authority (OCTA) 2020 Orange County Transportation Vision Plan.

For other roadway projects not included in the transportation plans identified above, the non-compete clause requires Caltrans to implement best efforts in exercising its discretionary power to support the F/ETCA and to refrain from exercising that discretionary authority relative to initiating, supporting or approving any non-exempt capital project on the State Highway System within the project area. A non-compete zone was established to define those geographical areas where non-exempt projects could adversely affect toll operations. This non-compete zone generally runs within a five-mile band from the corridor centerline.

There is no language in the Cooperative Agreement, and specifically the non-compete covenant, that limits or restricts Caltrans' ability to proceed with **any** highway project that they determine to be in the best interest of the State of California and the public. The non-compete clause states that if projects are built within the non-compete zone and reduce toll-road traffic, thereby putting the F/ETCA into default on its toll-construction bonds, then the F/ETCA would have to be compensated **only to the minimum level** required to cover the bond debt, **not for all lost toll revenues**.

The non-compete clause was required in order to obtain private bond financing. The intent of the non-compete clause was to give prospective investors a level of assurance that the State would not add capacity to existing facilities or build new facilities, which would negatively impact ridership (and the bond repayment revenue source) on the transportation corridors. The non-compete provisions were critical in bringing investor financing to transportation improvements in Orange County, thereby allowing the F/ETCA to construct the transportation corridors, enhancing the capacity of the regional transportation system.

Since the Transportation Corridors opened almost 20 years ago, they have taken hundreds of thousands of trips off of the existing transportation system. This has not only relieved traffic and safety issues on the existing system, but transfers thousands of drivers on new, safer, state-of-the-art highways each day. Several operational improvement projects have since taken place on competing routes, and the F/ETCA will continue to work with the State, OCTA and local jurisdictions to see that these projects go forward. At the same time, the F/ETCA must take into account the fiduciary duties of the investors that have allowed Orange County to go forward with these transportation improvements.

COMMON RESPONSE: RANCH PLAN – 1

Several of the corridor alternatives, including the preferred alternative, traverse an area owned by the Rancho Mission Viejo Company "RMV"). The County of Orange approved the RMV Planned Community (The Ranch Plan) in November 2004, after the publication of the SOCTIIP Draft EIS/SEIR. The Ranch Plan depicted an alignment of the FTC South as shown on the Master Plan of Arterial Highways; however, the EIR for the Ranch Plan acknowledged that if another alignment is selected the development plan will accommodate the selected alignment (Ranch Plan DEIR, page 3-5). The Ranch Plan was approved at a General Plan or conceptual level plan, with development areas shown as "bubbles" and no grading plan or placement of residential units or buildings on the plan as approved. Development on the Ranch will not occur without additional, more detailed planning through an Area Plan process with the County of Orange, as identified in the Ranch Plan EIR.

The approved RMV Ranch Plan provides for the following level of development intensity: 14,000 dwelling units, 3,480,000 square feet of urban activity center uses, 500,000 square feet of neighborhood center uses and 1,220,000 square feet of business park uses. To address traffic capacity to serve that development, the Ranch Plan EIR analyzed two alternative circulation systems. One, circulation network that includes a system of arterial improvements to serve the project, and another circulation network that assumes the extension of the FTC-S toll road (Ranch Plan Draft EIR No. 589, Chapter 3, Project Description, Page 3-32. This approach was carried through to the Board of Supervisors Resolution approving the Ranch Plan General Plan Amendment (Resolution No. 04-291, November 8, 2004) which identifies Circulation Element Amendments to implement the Ranch Plan both with and without a SOCTIIP SR-241 extension. The Ranch Plan EIR further states that, "should the TCA and FHWA select a SOCTIIP Alternative that includes an alignment for the SR-241 extension that is different from what is depicted in the local General Plans, regional planning documents and this Program EIR, the Ranch Plan project would be modified as needed to reflect the adopted alignment." (Ranch Plan Draft EIR Chapter 3, Project Description, Page 3-5.)

Subsequent to County approval of the Ranch Plan, the County of Orange and RMV entered into a Settlement Agreement with the Endangered Habitats League, Natural Resources Defense Council, Sea and Sage Audubon Society, Laguna Greenbelt, Inc., and Sierra Club. The Settlement Agreement did not change the total number of approved dwelling units or non-residential development for the Ranch Plan, but did alter the location of development and increase the area devoted to open space. For example, under the Settlement Agreement, Planning Areas 6 and 9 are limited to open space, Planning Area 7 is limited to open space, ranch and orchard operations, Planning Area 8 is limited to open space and a 500 acre development area, and modifications were made to the permitted use and development configurations in Planning Areas 2, 3 and 4.

The availability of the approved Ranch Plan and Ranch Plan Settlement Agreement provides an opportunity for coordinated planning and plan refinements between the two projects. For example, once the Foothill/Eastern TCA Board adopts the preferred alternative, the alignment will be set so that as specific develoment site plans, Area Plans and subdivision maps are prepared for the Ranch Plan, development can be placed in a location within the development bubbles outside of the SOCTIIP preferred alternative. Likewise, with the availability of the Ranch Plan EIR and subsequent Ranch Plan Settlement Agreement, the TCA has been able to make refinements to the Preferred Alternative to adjust the location of the alignment through Planning Area 2 in order to allow for the consolidation of the development area, and modify the Cow Camp Road interchange design from a full diamond to folded diamond design to be consistent with the Arterial Plan in the approved Ranch Plan.

In terms of the location of the preferred alternative relative to the Ranch Plan development bubbles, the preferred alternative traverses two of the six development bubbles (including a 500 acre proposed

development area in Planning Area 8 as one of the development areas). For Planning Areas 2 and 5, the preferred alternative is mostly on the edge of the development bubbles, but separates some small areas from the rest of the development area. See Figure 6.4-1A in the Final EIR. Although the Ranch Plan EIR identifies the potential need to modify the Ranch Plan project, it seems unlikely that a General Plan level modification would be needed. Instead, the future Area Plans can site development away from the preferred alternative but stay within the development bubbles. Furthermore, the Ranch Plan would need to accommodate transportation facilities in some form; if the preferred alternative is not built, then additional arterials will be built to serve the RMV project site as shown in the approved Circulation Plan for the Ranch Plan.

As part of the Response to Comments for the SOCTIIP EIS/SEIR, the TCA and FHWA evaluated those environmental topics where the Ranch Plan as modified by the Settlement Agreement would potentially result in a different impact than previously identified. Where these differences occur, the response addresses both the plan as first approved by the County and as changed by the Settlement Agreement. The Ranch Plan as approved by the County is a conceptual plan, and the Settlement Agreement has the effect of increasing the area dedicated to open space, particularly, but not exclusively, east of The Donna O'Neill Conservancy. The Preferred Alternative is consistent with and complements The Ranch Plan by shifting the alignment to the west to be adjacent to existing development and whenever feasible, with the areas contemplated for development uses in The Ranch Plan. In general, impacts are reduced because of the smaller area of development, and thus, cumulative impacts of The Ranch Plan and SOCTIIP are reduced.

COMMON RESPONSE: STATE PARKS LEASE – 1

SOSB is held by State Parks by virtue of a 1971 agreement of lease with the United States. The State Parks' lease with the United States is specifically subject to the right of the United States to grant additional easements and rights-of-way over the leased property. Part II, Section C of the Lease provides that State Parks are subject to outstanding easements and rights-of-way on the Leased Property and reserves to the United States the right to grant to third parties additional easements and rights-of-way on the Leased Property:

> This Lease is subject to all outstanding easements and rights-of-way for location of any type of facility over, across, in and upon the Leased Property, or any portion thereof, and to the right of the government, after consultation with State Parks as to location, to grant such additional easements and rights-of-way over, across, in and upon the Leased Property as it shall determine to be in the public interest; Provided, that any such additional easement or right-of-way shall be located so as not to unreasonably interfere with the use of the State Parks' improvements erected on the Leased Property;

Pursuant to Part II, Section C, the United States has reserved additional easements and rights-of-way over, across, in and upon the Leased Property. The United States has the right to use any such reserved easements and rights-of-way for its own use or grant the same to third parties. As such, the United States is able to grant to the TCA an easement for a right-of-way on the Leased Property for the purpose of constructing the SOCTIIP without first obtaining permission from the State Parks to the grant, provided such easements and rights-of-way are located so as not to unreasonably interfere with the use of the State Parks' "erected" improvements.

Congress enacted legislation specifically authorizing the Navy to grant the TCA the easement for the Project. (National Defense Authorization Act of 1999, Section 2581(a) Pub. Law 105-261.) Although the proposed easement will run through a portion of the Leased Property, the easement will, in fact, only impact the unimproved portion of the leasehold and none of the State Park's erected improvements will be physically impacted.

A lease may be subject to existing or future easement or rights-of-way on the leasehold. (See 7 Miller & Starr, Cal. Real Estate (Rev. Ed. 2001) Landlord and Tenant, § 19:1, p. 13.) Thus an easement or right-of-way may be carved out of the leasehold estate. The property interest to which the easement attaches is the dominant tenement while the property interest to which the burden or servitude is imposed is the servient tenement. When an easement or right-of-way is created by a reservation in the original instrument, those interests expressed in the reservation and those necessarily incident thereto are excluded from the lessee's interest. (*The City of Los Angeles v. Howard* (1966) 244 Cal.App.2d 538.)

Under the terms of the Lease, the United States has the right to grant the TCA a permanent easement of right-of-way on the Leased Property that is superior to the rights of the State Parks. It is important to note that in accepting the grant from the Navy, the TCA will not be acquiring **any** interest of the State Parks under the Lease. Rather, the TCA will be acquiring an interest in the leasehold belonging solely to the Marines that was carved out of the Lease. As a result of the grant, the TCA will stand in the shoes of the Marines with respect to its superior right of use of a portion of the Leased Property that is the subject of the easement. From a practical point of view, upon acquisition of the easement, the TCA's rights with respect to use of the easement within the Leased Property will effectively replace the rights of the State Parks with respect to that portion of the leasehold covered by the easement.

As a negotiated contract between the parties, the execution of the Lease by the State Parks confirms the State Parks' consent to its terms and the reservation of easements and rights of way provided thereunder.

(See generally, Civ. Code § 1066.) The express language of the Lease provides the State Parks with sufficient notice of the possible existence of outstanding easements and rights-of-way on the Leased Property and the United States' intent to establish additional easements and/or rights-of-way on the Leased Property during the Term, either for itself or its grantees. The broad reservation language permits the United States or its grantees to use the land for a number of different purposes, including the construction of a toll road by the TCA as the United States' grantee.

The last paragraph of Comment O21-123 references a CEQA provision and the application of CEQA criteria to provisions of State law adopted to protect the environment. The United States is generally exempt from State regulation based on the federal preemption doctrine. Preemption is the simultaneous expansion in power of a higher level of government and reduction in power of a lower level of government. Federal preemption is rooted in the Supremacy Clause, U.S. CONST. Art. VI, cl. 2, operating in conjunction with another clause of the Constitution that empowers the federal government to act (*e.g.*, the Property Clause, U.S. CONST., Art. IV, § 3, cl. 2). *See* 1 LAURENCE H. TRIBE, AMERICAN CONSTITUTIONAL LAW 1172 (3d ed. 2000). There are three categories of preemption: express; implied; and field. *Gade v. National Solid Waste Management Association*, 505 U.S. 88, 98 (1992). Express preemption exists to the extent Congress makes explicit its intention to preempt state law through statutory language. *Pacific Gas & Electric Co. v. State Energy Resources Conservation and Development Comm'n*, 461 U.S. 190, 203 (1983). Thus, the focal point when determining whether a statute contains a provision that expressly preempts state law is the text itself. This is consistent with general rules of statutory interpretation. *Lamie v. United States Trustee*, 540 U.S. 526, 534 (2004) ("It is well established that 'when the statute's language is plain, the sole function of the courts--at least where the disposition required by the text is not absurd--is to enforce it according to its terms." [citations omitted]).

Congress enacted legislation preempting state regulation of the construction, maintenance, or operation of SOCTIIP within Camp Pendleton. The legislation provides:

> (a) Easement Authorized.—The Secretary of the Navy may grant an easement, in perpetuity, to the Foothill/Eastern Transportation Corridor Agency (in this section referred to as the "Agency") over a parcel of real property at Marine Corps Base, Camp Pendleton, California, consisting of approximately 340 acres to permit the recipient of the easement **to construct, operate, and maintain, notwithstanding any provision of state law to the contrary, a restricted access highway**. The area covered by the easement shall include all slopes and all necessary incidents thereto.

Pub. L. No. 105-361, as amended by Pub. L. No. 107-107 § 2867, 115 Stat. 1012, 1334 (2001) **(emphasis added).**

The face of the statute indicates that Congress intended to preempt any State law that interferes with the construction, operation, or maintenance of SOCTIIP within Camp Pendleton. Congress has used the language "notwithstanding any provision of State law" elsewhere, and courts have held that such language expressly preempts State law. *E.g., Cliff v. Payco Gen. Am. Credits, Inc.*, 363 F.3d 1113, 1125 (11th Cir. 2004).

The preemptive scope of the relevant provision is governed by the express language thereof. *Cipollone v. Liggett Group*, 505 U.S. 504, 517 (1992) (indicating that the preemptive scope of a statute is governed entirely by the express language of that statute). For that reason, any State law that interferes with the construction, operation, and maintenance of SOCTIIP within Camp Pendleton is preempted.

The leased property is not only owned by the United States but also governed by a lease contract in which the United States is a party. Implementing Section 5401 would have the effect of the State overriding Federal Law, and nullifying an explicit reservation in the lease agreement benefiting the United States.

Comment O21-123 also states that SOSB is defined as part of the San Diego Coast State Seashore. This is incorrect. Even though SOSB is coastal land that is included within the State Seashore (PRC, Section 5001.6, subdivision [b][11][A], the restrictions governing State Seashores apply only if the property has been acquired by the State and the property has been designated as State Park System land that is a part of a State Seashore. (PRC Section 5001.6, subdivision [d]. Neither of these conditions has been satisfied relative to SOSB.

PRC Section 5019.62 does not apply because the CDPR has not designated SOSB to be a State Seashore. SOSB was classified as a State Recreation Unit in 1971. (PRC, Section 5019.56; 14 California Code Regulations, Section 4753.)

In addition, SOSB is located entirely on lands leased from the DON; the State has not acquired the land. SOSB is operated by the State by virtue of a 1971 agreement of lease ("lease contract") with the United States. Under Section 5060 of the PRC, State Parks may enter into contracts for the lease of lands for parks and recreation "...subject to such conditions as the department may determine." A contract as defined by Civil Code Section 1549 is "...an agreement to do or not to do a certain thing." Further, Civil Code Section 1636 provides that a "...contract must be so interpreted as to give effect to the mutual intention of the parties as it existed at the time of constructing, so far as the same is ascertainable and lawful."

The State Parks' lease with the United States is specifically subject to the right of the United States to grant additional easements and rights-of-way over the leased property. Thus, in implementing the authority to lease, State Parks agreed to a reservation - the United States' ability to grant a right-of-way to a third party - in accordance with PRC Section 5060 whereby possession by State Parks of the lease property is specifically subject to the right of the United States to grant such other rights.

COMMON RESPONSE: RECIRCULATION – 1

Requirements for Recirculation under CEQA

Pursuant to Section 15088.5 of the California Environmental Quality Act (CEQA) Guidelines, a lead agency is required to recirculate an Environmental Impact Report (EIR) for public review when significant new information is added to the EIR after the Notice of Availability (NOA) of the Draft EIR is published, but before certification of the Final EIR. As indicated in Section 15088.5, "information" can include changes in the project or environmental setting or other new information. Section 15088.5 further provides that, "New information added to an EIR is not 'significant' unless the EIR is changed in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect (including a feasible project alternative) that the project's proponents have declined to implement."

"Significant new information" requiring recirculation includes, for example, a disclosure showing the following:

1. A new significant environmental impact would result from the project or from a new mitigation measure proposed to be implemented.

2. A substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted that reduce the impact to a level of insignificance.

3. A feasible project alternative or mitigation measure considerably different from the others previously analyzed would clearly lessen the environmental impacts of the project, but the project's proponents decline to adopt it.

4. The Draft EIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded. (Section 15088.5[a]).

Section 15088.5(b) specifically states, "Recirculation is not required where the new information added to the EIR merely clarifies or amplifies or make insignificant modifications in an adequate EIR."

Requirements for Supplemental EIS under NEPA

"Recirculation" is a CEQA-defined term and is not a concept specifically defined by the National Environmental Policy Act (NEPA). A similar concept under NEPA is the provision for a "Supplemental" Environmental Impact Statement (EIS). The Council on Environmental Quality (CEQ) regulations require preparation of a Supplement to a Draft or Final EIS if (1) the agency makes substantial changes in the proposed action that are relevant to environmental concerns; or (2) there are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts. (40 Code of Federal Regulations [CFR] Section 1502.9[c]).

As can be seen by comparing the CEQ guidance and the CEQA Guidelines, there are differences between CEQA and NEPA in terms of what triggers the need to recirculate or supplement an environmental document. Nevertheless, the fundamental test under both CEQA and NEPA is the introduction of significant new circumstances or information that would substantively increase a project's impacts or make a substantial difference in the evaluation of the project.

Evaluation of the Need to Recirculate the SOCTIIP EIS/SEIR

As defined in Section 15088.5 of the CEQA Guidelines, there are several considerations in assessing whether all or part of an EIR should be recirculated for public review. The first consideration is whether significant new information was added to the EIR after the publication of the NOA. There were no substantive changes to the project description for the South Orange County Transportation Infrastructure Improvement Project (SOCTIIP) Alternatives or the environmental setting in the SOCTIIP study area since the release of the NOA. There have been project refinements (described below), which have the overall effect of incrementally reducing some environmental effects. Some comments stated that new information would be required to address the comments and alleged deficiencies of the Draft EIS/SEIR. The Responses to Comments have been prepared, and the Transportation Corridor Agencies (TCA), and the Federal Highway Administration (FHWA) believe that the information in the responses does not constitute significant new information. The Responses to Comments received on the Draft EIS/SEIR have resulted in minor modifications to the text of the Draft EIS/SEIR to clarify or refine the existing text or to provide updated information that was not available at the time of the NOA. The minor changes to clarify or refine the existing text do not result in the need to recirculate the Draft EIS/SEIR, based on the test as defined under Section 15088.5(b) of the CEQA Guidelines. Similarly, under the CEQA NEPA regulations, no Supplemental EIS is needed due to these minor changes and clarifications.

The updated information provided in the Responses to Comments and the Final EIS/SEIR included the following:

- A Supplemental Noise Analysis was provided to characterize the potential for project-related noise to affect residences of the developing Talega Planned Community. These residences were not constructed when the environmental analysis was initiated. This information does not change the conclusions of the Draft EIS/SEIR; no new significant impacts were found to occur, no substantial increase in the severity of an environmental impact would result and no new mitigation was required This information can be found in Attachment 1 of this Response to Comments document.
- An analysis of the potential for the project to result in air emissions as a result of re-entrained dust (PM_{10}) was analyzed. Re-entrained dust is material resuspended by vehicles traveling on unpaved and paved roads, vehicle tire tracking of dust, road surface erosion and degradation of tires. The analysis found no new significant impacts; therefore, no new mitigation was required. This information does not change the conclusions of the Draft EIS/SEIR; no new significant impacts were found to occur, no substantial increase in the severity of an environmental impact would result and no new mitigation was required. This information can be found in Attachment 2 of this Response to Comments document.
- An analysis of the potential for the project to result in CO concentrations at Avenida Pico and Interstate 5 (I-5) was analyzed. The analysis considered existing 2008, 2018 and 2025 "with project" conditions and found that the highest concentrations are for existing conditions. The analysis found no new significant impacts; therefore, new mitigation was not required. This information does not change the conclusions of the Draft EIS/SEIR; no new significant impacts were found to occur, no substantial increase in the severity of an environmental impact would result and no new mitigation was required. This information can be found in Attachment 3 of this Response to Comments document.
- Additional information regarding construction emissions for the CC, AIO and I-5 Alternatives was included in the Final EIS/SEIR. The haul truck emissions were added to the import/export category; the results did not have a substantial change in the total emissions for these Alternatives. The analysis found no new significant impacts; therefore, no new mitigation was required. This information does not change the conclusions of the Draft EIS/SEIR; no new significant impacts were

found to occur, no substantial increase in the severity of an environmental impact would result and no new mitigation was required. This information can be found in Attachment 4 of this Response to Comments document.

- An analysis of the potential for the project to result in CO concentrations along the Corridor and I-5 was analyzed. The analysis shows that even the CO concentrations immediately adjacent to the Corridor Alignment and I-5 (3 meters from the roadway) do not exceed the ambient air quality standards of 9 ppm for 1 hour and 20 ppm for 8 hours. Note that this is a location where a receptor would be present only in the most unusual circumstances, and even then, only momentarily. The analysis supports the conclusion that there was no underestimation of sensitive receptor exposure to CO concentrations levels as disclosed in the Draft EIS/SEIR. The analysis found no new significant impacts; therefore, no new mitigation measures are required. This information does not change the conclusions of the Draft EIS/SEIR; no new significant impacts were found to occur, no substantial increase in the severity of an environmental impact would result and no new mitigation was required. This information can be found in Attachment 5 of this Response to Comments document.
- An update of the estimated acquisition and relocation costs for SOCTIIP build Alternatives, reflecting the additional Talega Residential Displacement that could occur as a result of new residential development, is provided in the Final EIS/SEIR. There were no substantive changes to the EIS/SEIR conclusions; therefore, no new mitigation required as a result. This information does not change the conclusions of the Draft EIS/SEIR; no new significant impacts were found to occur, no substantial increase in the severity of an environmental impact would result and no new mitigation was required. This information can be found in Attachment 6 of this Response to Comments document.
- List of Water Quality Limited Segments was provided in the Final EIS/SEIR. This list was provided for information purposes and there were no changes to water quality conclusions; therefore, no new mitigation was required as a result. This information does not change the conclusions of the Draft EIS/SEIR; no new significant impacts were found to occur, no substantial increase in the severity of an environmental impact would result and no new mitigation was required. This information can be found in Attachment 7 of this Response to Comments document.
- A Sediment Transport Study was prepared to analyze the potential for the project to affect San Mateo Creek, and consequently the wave and surf action of the Pacific Ocean. The analysis found no new significant impacts; therefore no new mitigation measures are required. This information does not change the conclusions of the Draft EIS/SEIR; no new significant impacts were found to occur, no substantial increase in the severity of an environmental impact would result and no new mitigation was required. This information can be found in Attachment 8 of this Response to Comments document.
- The Donna O'Neill Nature Conservancy (The Conservancy) provided a map of trails within The Conservancy. This map can be found in Attachment 9 of the Responses to Comments document. The Draft EIS/SEIR recognizes the presence of pedestrian paths within The Conservancy, as well as the fact that The Conservancy is a private resource with trail access available on an appointment basis. Therefore, this information does not change the conclusions of the Draft EIS/SEIR; no new significant impacts were found to occur, no substantial increase in the severity of an environmental impact would result and no new mitigation was required.
- The Natural Communities Conservation Plan (NCCP)/Habitat Conservation Plan (HCP) and the Special Area Management Plan (SAMP)/Master Streambed Alteration Agreement (MSAA) Consistency Analysis and Compatibility Map was prepared to further clarify the relationship between the proposed project and the NCCP/HCP and the SAMP/MSAA. The analysis found no new significant impacts; therefore no new mitigation measures are required. This information does not change the conclusions of the Draft EIS/SEIR; no new significant impacts were found to occur, no substantial increase in the severity of an environmental impact would result and no new mitigation

was required. This information can be found in Attachment 10 of this Response to Comments document.

- An independent review of the Sediment Transport Study (in Attachment 8) was prepared by Skelly Engineering. The analysis concurred with the information in the Sediment Transport Study and the conclusions that the SOCTIIP would have an insignificant impact on the transport of sediment to the shoreline and no measurable impact on surfing resources. This review was provided for information purposes and there were no changes to water quality conclusions; therefore no new mitigation was required. This information does not change the conclusions of the Draft EIS/SEIR; no new significant impacts were found to occur, no substantial increase in the severity of an environmental impact would result and no new mitigation was required. This information can be found in Attachment 11 of this Response to Comments document.
- A Wetlands Delineation Technical Report was prepared for a number of the corridor Alternatives, including the A7C-FEC-M. A Wetlands Delineation Technical Report Addendum was prepared to address the disturbance limits of the Preferred Alternative, for which permits are being sought at this time. The analysis included in the Addendum assumes that all drainages within the disturbance limits are permanently filled, except for those that will be bridged. For bridges, the small area of impact where the support columns are pounded into the ground were included as permanent impacts, and for the other reaches, cross-culverts would be installed at the majority of drainages. The Wetlands Delineation Report and Addendum provides additional refinement of information that was included in the Draft EIS/SEIR. The analyses found no new significant impacts; therefore no new mitigation measures are required. This information does not change the conclusions of the Draft EIS/SEIR; no new significant impacts were found to occur, no substantial increase in the severity of an environmental impact would result and no new mitigation was required. This information can be found in Attachments 12 and 14 of this Response to Comments document.
- A Biological Survey Report was prepared for surveys conducted on The Conservancy. In the period since the Draft EIS/SEIR was published, The Conservancy granted access for the purpose of data collection. Additional information regarding existing plant communities was collected on and off of The Conservancy for the purpose of field verification of earlier survey work. This information can be found in Attachment 15 of this RTC document. The information from the biological resource surveys conducted on The Conservancy was consistent with the information presented in the Draft EIS/SEIR, as included in Attachment 15 of this RTC document and incorporated into the Final EIS/SEIR.
- The Final EIS/SEIR reflects the implementation of the Phased Identification and Evaluation process (Phased Approach) for cultural resources, initiated at the time the Draft EIS/SEIR was being prepared. The changes since the publication of the Draft EIS/SEIR reflect the additional information that has been made available by others (RMV) and as a result of new right-of-entry to certain properties (The Conservancy) visual surveys conducted on MCB Camp Pendleton, and identification of a Preferred Alternative. The applicability of the new information to the cultural resources analysis reflects the successful application of the Phased Identification and Evaluation process. The Office of Historic Preservation (OHP), has determined that the Phased process should transition to a project-specific analysis, as documented in Section 4.16. The information from the implementation of the Phased Identification and Evaluation process (Phased Approach) for cultural resources was consistent with the information presented in the Draft EIS/SEIR, as updated in Section 4.16 of the Final EIS/SEIR.

In addition to the information cited above, the Final SEIR reflects refinement to the Preferred Alternative. In the months since the Draft EIS/SEIR comment period concluded, the A7C-FEC-M Alternative alignment has undergone further refinement in order to minimize environmental impacts and to address engineering requirements. The shifts in the A7C-FEC-M Alternative alignment are minor refinements. The total area within the project impact area (including proposed roadway and other improvements, as

well as construction staging areas) was approximately 1,217 acres (492 hectares) for the A7C-FEC-M Alternative as presented in the Draft EIS/SEIR and approximately 1,194 acres (483 hectares) in the refined A7C-FEC-M Alternative, the locally Preferred Alternative. Specifically, the alignment refinements reflected in the Preferred Alternative are the result of the following modifications:

- Engineering refinements, including provisions for
  - geotechnical requirements,
  - construction staging,
  - improved utility relocation design,
  - improved design of access roads for utilities and agricultural operations,
  - adjustment in the location of Extended Detention Basins (EDBs),
  - adjustments to reflect the approved Ranch Plan (including a Settlement Agreement that occurred after the Ranch Plan EIR was certified), and
  - Elimination of the proposed "C" Street Interchange.
- Minimizing impacts to natural resources, particularly stream crossings.

Refer to the text and figures in Chapter 2.0 of the Final EIS/SEIR for more information regarding the areas where the alignment has been reduced and expanded to minimize impacts and accommodate more advanced engineering information.

This new and updated information provides a broader level of information regarding these topical areas, but does not result in new significant adverse impacts or new mitigation measures that might result in adverse impacts. Therefore, the Draft EIS/SEIR does not need to be recirculated based on the addition of new and updated information.

As discussed in the specific response to comments in Chapters 3 and 4 of this document, a number of potential Alternatives were suggested in the comments on the Draft EIS/SEIR. As discussed in the responses to those comments and in Common Response Alternatives-1, no new feasible Alternatives that meet the purpose and need were identified. The EIS/SEIR extensively documents that a wide range and number of potential Alternatives were considered in the planning and technical analyses and studies that led to the development of the Draft EIS/SEIR. Therefore, the Draft EIS/SEIR does not need to be recirculated based on the availability of new Alternatives.

The additional information included in the Final EIS/SEIR provides information and clarification about the proposed project, specifically the Preferred Alternative. This information does not change the conclusions of the Draft EIS/SEIR; no new significant impacts were found to occur, no substantial increase in the severity of an environmental impact would result and no new mitigation was required. Therefore, the TCA, as the local lead agency for the SEIR, conclude that the EIS/SEIR provides technical and scientific data and studies to support the conclusions documented in the Draft EIS/SEIR and that the Draft EIS/SEIR was detailed and exhaustive in the documentation of impacts mitigation measures, and alternatives to provide for meaningful public review and comment. Therefore, the Draft EIS/SEIR is adequate and does not need to be recirculated.

Summary

In summary, the TCA have reviewed the comments received on the Draft EIS/SEIR and the responses to those comments, as well as other text changes and references to the Draft EIS/SEIR. Since the release of

the Draft EIS/SEIR for public review, there have been no substantive changes to the project, no substantive changes in the environmental setting, and no significant additional data or information were added to the EIR which would deprive the public of a meaningful opportunity to comment on the project. Therefore, having reviewed the information contained in the Draft EIR/SEIR and the Responses to Comments Report, as well as the requirements under Section 15088.5 of the CEQA Guidelines and the CEQ NEPA Guidelines (40 C.F.R. Section 1502.9[c]) regarding recirculation of Draft EIRs and EIS supplements, the FHWA and the TCA determined that there is no new significant information and no need to recirculate the EIS/SEIR.

COMMON RESPONSE: TRAFFIC – 1

Summary

Two primary technical issues are addressed in this response: (1) comparing the application of a "static" set of OCTAM future trip distribution patterns without speed recycling/feedback loops to application of separate OCTAM results for each Alternative with speed recycling/feedback loops and (2) the potential for the SOCTIIP Alternatives to induce travel demand.

A sensitivity study was performed to determine the importance of including speed recycling/feedback loops into the South Orange Transportation Infrastructure Improvement Project (SOCTIIP) traffic model. Results of the study indicate that there was an insignificant difference in the traffic forecasts if speed recycling/feedback loops were incorporated in the model or excluded. The sensitivity runs performed both with and without speed recycling/feedback loops showed the following:

- A change of less than 1 percent of the peak-hour or average daily traffic (ADT) volumes forecast on I-5.
- A change of less than 1 percent of the countywide vehicle miles traveled (VMT) and vehicle hours traveled (VHT).
- A corridor build Alternative provides an alternate parallel route to I-5 but does not substantially change travel patterns in the study area.
- The traffic analysis conducted for the SOCTIIP Alternatives would not change substantially if speed recycling/feedback loops were applied.

The travel demand forecasting sensitivity analysis results summarized here, which are based on state-of-the-practice speed recycling/feedback loop procedures, indicate that with or without speed recycling, the integrated OCTAM/SCSAM modeling package produces forecasts that are consistent with the expected trends based on induced travel research when modeling scenarios with different levels of highway capacity. The expected trend is essentially that an increase in the highway supply, such as in a SOCTIIP corridor build Alternative, reduces travel times (VHT) due to enhanced accessibility, which in turn increases the demand for travel (VMT). The OCTAM/SCSAM sensitivity runs with or without speed recycling show that the changes in VMT and VHT between a corridor build Alternative and the SOCTIIP No Action Alternative are relatively small percentages of the areawide (Orange County) VMT and VHT, which is a strong indicator that a corridor build Alternative provides complementary capacity to I-5 and does not substantially change travel patterns in the study area, even though local accessibility changes. Thus, the expected trends with respect to induced travel as described in the comments are: (1) not borne out by the analysis conducted as part of the Draft EIS/SEIR, and (2) not applicable to the physical and geographical conditions in the study area.

The OCTA used the OCTAM to model the No Action Alternative and a corridor build Alternative without applying speed recycling and found that the results of the runs were within the convergence criteria applied in the OCTAM by the OCTA to determine when to apply speed recycling. Based on this finding, a "static" set of OCTAM future trip distribution patterns (i.e., results from the OCTAM trip distribution and mode choice components) without speed recycling were applied in the SCSAM for each of the SOCTIIP Alternatives rather than applying separate OCTAM results for each Alternative with speed recycling. To evaluate the effect that speed recycling would potentially have on the analysis of the SOCTIIP Alternatives, the OCTA also used the OCTAM to model the No Action Alternative and a corridor build Alternative with speed recycling. The magnitude of change in VMT and VHT for a corridor build Alternative compared to the No Action Alternative was found to be different with and

without speed recycling. As pointed out in the September 30, 2003, DKS Associates memorandum, when speed recycling is applied, a corridor build Alternative "results in a larger increase in VMT and a lower reduction in VHT," and the traffic "volume reduction (the benefit) on I-5" is "marginally dampened." However, the data summarized here indicates that the changes are relatively minor. For example, the SCSAM results presented earlier, which are also presented in the September 30, 2003, DKS Associates memorandum, indicate that the difference in the magnitude of change with and without speed recycling is less than 1 percent of the peak-hour or ADT volumes forecast on I-5, and less than 1 percent of the VMT or VHT forecast in southern Orange County, as discussed in Section 3.2.2 of the Draft EIS/SEIR. It is therefore concluded that the findings, both respect to the Purpose and Need, of the traffic analysis conducted for the SOCTIIP Alternatives would not change if multiple speed recycling feedback loops were applied when modeling each Alternative rather than applying a static set of trip distribution patterns for all the Alternatives.

Background

An issue raised in a number of comments submitted on the SOCTIIP Draft EIS/SEIR pertains to the adequacy of the travel demand forecasting model that was applied in the SOCTIIP traffic and circulation analysis addresses the potential for the SOCTIIP Alternatives to induce travel demand. This issue was the subject of extensive discussion and review during the proceedings of the SOCTIIP Collaborative, which, as mentioned in Section 3.1.5 of the Draft EIS/SEIR, included a review by an independent traffic consultant, DKS Associates, a nationally recognized firm in the area of traffic modeling and analysis. The SOCTIIP Collaborative and the independent traffic consultant were actively involved throughout the approximately 30-month process that began with the development of the South (Orange) County Sub-Area Model (SCSAM) and its application in the SOCTIIP traffic and circulation analysis.

The process of developing and applying the SCSAM in the SOCTIIP Draft EIS/SEIR also included substantial involvement from the Orange County Transportation Authority (OCTA), the agency that manages and maintains the Orange County Transportation Analysis Model (OCTAM). The OCTAM, which is a state-of-the-practice multi-modal regional travel demand forecasting model that includes accepted technical procedures to account for induced travel demand, is designed to address transportation issues and programs mandated by state and federal legislation. Some major transportation programs either directly or indirectly supported by the OCTAM include the Orange County Congestion Management Program (CMP), the Orange County Long-Range Transportation Plan (FastForward), the Orange County Master Plan of Arterial Highways (MPAH), input to the Southern California Association of Governments' (SCAG's) Regional Transportation Plan (RTP), the State Transportation Improvement Program (STIP) and transportation funding programs involving local (Orange County Measure M), state, and federal funds.

As discussed in Section 3.2.2 in the Draft EIS/SEIR, the SCSAM is a focused sub-area model that was derived from the OCTAM and was specifically designed to provide detailed traffic forecasting capability in the SOCTIIP traffic analysis study area. The SCSAM was developed according to a set of sub-area model consistency guidelines adopted by the OCTA to promote consistency in transportation modeling within Orange County. The goal of the guidelines is to ensure consistency between local sub-area models in Orange County and the OCTAM, as well as with the travel demand forecasting model for the southern California region that is maintained by SCAG for the RTP. The OCTA guidelines were also prepared to comply with requirements of state and federal legislation including the CMP, the Transportation Equity Act for the twenty-first century (TEA-21), and the state and federal Clean Air Acts (CAAs). The CMP requires consistency in databases and modeling, while the TEA-21 and CAAs require improved analytical capabilities to evaluate and monitor transportation improvements, policies, plans and programs. The SCSAM has been certified by the OCTA as being in compliance with the sub-area model consistency guidelines.

Regarding induced travel demand, as mentioned in Section 3.2.2 of the Draft EIS/SEIR, travel modelers and planners have debated the concept of induced travel for decades, both because of the difficulties in measuring it and misunderstandings about its definition and components. As noted in Comment O21-14, induced travel demand is generally defined as an increase in travel resulting from an improvement in the transportation system. This industry-accepted definition of induced travel demand is discussed in detail in the publication, Accounting for Induced Travel in Evaluation of Urban Highway Expansion (Federal Highways Administration [FHWA], date unknown), which indicates that induced travel generally comes from the following sources:

- A change in land use development (e.g., an increase or intensification in land use resulting in an associated increase in trip generation).
- A change in trip generation (e.g., either an increase in the number of person trips related to development or an increase in motorized person trips per development unit).
- A change in trip distribution (e.g., an increase in average motorized person trip distance).
- A change in mode choice (e.g., an increase in share of person travel by private motorized vehicles).
- A change in route choice (e.g., a shift in vehicle travel to new or improved facilities from unimproved facilities within a corridor, or to an improved corridor due to diversion of traffic from other corridors).

It is generally accepted that an integrated land use/transportation model is required to account for the first source of induced travel listed above (a change in land use due to a transportation system improvement). Various case studies of integrated land use/transportation models have been recently conducted, such as the development of the Sacramento MEPLAN model, which, as discussed in the traffic report included as Attachment A in Comment Letter O21, is an unofficial planning model developed as part of a model comparison project at the University of California at Davis (none of the other travel demand models cited as case studies in the Attachment A traffic report include an integrated land use model component). However, in the engineering profession, there currently are no nationally accepted "best practices" to account for this aspect of induced travel demand, and consequently, current regional travel demand models, such as the SCAG RTP model and the OCTA OCTAM, do not include a linked or integrated land use model. Regarding the second source of induced travel listed above (a change in the level of trip generation for a given unit of land use due to a transportation system improvement), demonstrating differences in trip generation due to transportation system improvements is difficult to assess without an integrated land use/transportation model, and consequently, as pointed out in Comment O21-203, current forecasting technology is unable to reliably estimate induced traffic due to new highway facilities at the trip generation level of the model.

As indicated in Section 3.2.2 of the Draft EIS/SEIR, a travel demand model that follows best practices in the engineering profession should be capable of forecasting differences in trip distribution, mode choice and route choice between transportation Alternatives (i.e., the third, fourth and fifth sources of induced travel listed above). It is widely accepted that travel demand patterns do change with major new transportation facilities. The amount of change depends on the degree to which new facilities simply provide complementary capacity on the circulation system or capacity that creates substantially different geographic accessibility. The SOCTIIP study area, for example, is located adjacent to the I-5 corridor, and the SOCTIIP Build Alternatives involve new or improved facilities that primarily provide parallel complementary capacity to the I-5 corridor for regional traffic but also change accessibility for local traffic in the study area.

In a travel demand model such as the OCTAM and SCSAM, changes in travel demand patterns are typically estimated using "feedback loops" in which congested roadway speeds from a traffic assignment are looped back to the trip distribution and mode choice components of the travel demand model. This feedback process is sometimes referred to as "speed recycling" because it uses an iterative procedure to derive congested speeds for use in determining trip distribution and mode choice. The primary objective of this process is to ensure that consistent speeds and travel times are applied in each component (trip distribution, mode choice and traffic assignment) of the model. The number of speed recycling iterations to apply in a model is typically determined as the point at which the differences between input and output elements of the model, such as average speeds on the roadway system, assigned roadway volumes, and/or trip distribution flows, are within a specified minimum tolerance. This is referred to as the point of convergence, and is generally viewed as the point at which the system is at equilibrium with a balance between network supply and traveler demand, and after which performing additional feedback loop iterations does not provide a meaningful change in the model results.

The SCAG RTP model and the OCTA OCTAM provide the capability to apply feedback loops by recycling congested speeds from highway assignment to the trip distribution and mode choice components of each model. Both models apply a technique to improve the rate of system convergence in which synthesized congested speeds that are approximately 60 to 80 percent of free-flow speeds are applied in the initial model run that is performed before applying the speed recycling process. For the OCTAM, the synthesized congested speeds were estimated based on actual observed congested speeds for the different roadway area type classifications (e.g., urban, suburban, rural) that are applied in the model. As mentioned in Section 3.2.2 of the Draft EIS/SEIR, the convergence criteria applied in the OCTAM by the OCTA is to apply feedback loops until the speeds that are input to the trip distribution and mode choice components of the model are within 5 percent of the speeds that are output from traffic assignment.

The SCSAM is a sub-area derivative of the OCTAM that is dependent on the OCTAM for trip distribution and mode choice results, but applies a refined (more detailed) traffic assignment component than the OCTAM to determine vehicle route choice between Alternatives. Therefore, SCSAM traffic forecasts represent an integrated travel demand forecasting process combining the OCTAM regional model with a sub-area model that provides a more refined traffic assignment capability in the SOCTIIP study area than the OCTAM. The OCTAM and SCSAM traffic assignment results, such as roadway traffic volumes, output congested roadway speeds and vehicle miles of travel (VMT)/vehicle hours of travel (VHT) statistics, are inherently different for various reasons, including (1) the more detailed study area highway network and zone structure in the SCSAM compared to the OCTAM, (2) the study area land use trip generation and truck traffic adjustments that are applied in the SCSAM and (3) the refined traffic assignment procedures that are applied in the SCSAM. Nonetheless, the integrated design of the SCSAM with the OCTAM ensures that key results, including trip distribution, mode choice and speed recycling, from the OCTAM regional model are directly reflected in traffic forecasts produced by the SCSAM. A thorough description of the SCSAM, including the refined traffic assignment aspects discussed here, is provided in the SOCTIIP Traffic and Circulation Technical Report—Traffic Model Description and Validation (Austin-Foust Associates, Inc., October 2002).

Use of Static Trip Distribution Patterns in the Analysis of the SOCTIIP Alternatives. Since the SCSAM trip distribution and mode choice components are dependent on the OCTAM regional model, early in the process of developing the SCSAM, it was recognized that it was important to understand the sensitivity of the OCTAM trip distribution and mode choice procedures with respect to the SOCTIIP Alternatives. As mentioned in Section 3.2.2 of the Draft EIS/SEIR, the OCTA used the OCTAM to model various SOCTIIP Alternatives and found that, in every case that was tested, the input and output speeds after the initial model run (i.e., without applying additional speed recycling iterations) were within 5 percent of each other, which is within the convergence criteria applied in the OCTAM by the OCTA.

Based on this finding, a "static" set of OCTAM future trip distribution patterns (i.e., results from the OCTAM trip distribution and mode choice components) without speed recycling iterations were applied in the SCSAM for each of the SOCTIIP Alternatives rather than applying separate OCTAM results for each Alternative with additional speed recycling iterations. As discussed in Section 5.3 (Speed Recycling Based on SOCTIIP Alternatives) in the SOCTIIP Traffic and Circulation Technical Report—Traffic Model Description and Validation, for this process, the OCTA used the OCTAM to model the following three scenarios:

Scenario 1. 2025 conditions based on build out of the Orange County MPAH, including the southerly extension of the Foothill Transportation Corridor (FTC) (i.e., a Corridor Build Alternative).

Scenario 2. 2025 conditions based on MPAH build out without the southerly extension of the FTC (i.e., the No Action Alternative).

Scenario 3. 2025 conditions based on MPAH build out without the southerly extension of the FTC, and with the I-5 improvements that are proposed in the I-5 Widening Alternative.

Table 1(at the end of this common response Traffic 1) (from Table 5-3 in the SOCTIIP Traffic and Circulation Technical Report—Traffic Model Description and Validation) summarizes the countywide (Orange County) AM and PM congested speeds without speed recycling for each of the three OCTAM (Version 3.1) sensitivity runs, together with the input speeds to the OCTAM trip distribution and mode choice components, which, as discussed earlier, are synthesized congested speeds that were estimated based on actual observed congested speeds. For each scenario, separate speeds are listed for Orange County freeways, divided arterial roads and undivided arterial roads. A systemwide weighted average speed that is based on the amount of VMT and VHT on the various components of the circulation system (i.e., freeways, divided arterial roads and undivided arterial roads) is also shown for each scenario and is the basis for the application of the OCTAM convergence criteria previously described. The results indicate that the average output congested speeds in each of the three cases are well within 5 percent of the average input speeds, with the maximum difference being 2.4 percent in Scenario 2 during the AM peak. Also, the average output congested speeds vary from scenario to scenario by no more than 1.2 percent (e.g., the variation between Scenario 1 and Scenario 2 during the AM peak hour).

OCTAM Sensitivity Runs With Speed Recycling. The three OCTAM runs, summarized in the previous discussion regarding the use of a static set of trip distribution patterns in the analysis of the SOCTIIP Alternatives, applied a single pass of the OCTAM trip distribution, mode choice and traffic assignment components without additional iterations of speed recycling. As discussed in Section 3.2.2 of the Draft EIS/SEIR, to evaluate the effect that additional speed recycling iterations would potentially have on the analysis of the SOCTIIP Alternatives, the OCTA was asked to use the OCTAM to perform five iterations of speed recycling on the following two scenarios:

Scenario 1. 2025 conditions based on build out of the Orange County MPAH, but without the southerly extension of the FTC (i.e., the No Action Alternative).

Scenario 2. 2025 conditions based on MPAH build out, including the southerly extension of the FTC (i.e., a Corridor Build Alternative).

These scenarios, which represent substantially different SOCTIIP Alternatives, are the same as two of the three scenarios summarized earlier in the discussion regarding the use of a static set of trip distribution patterns in the SOCTIIP analysis. As summarized earlier, the average output congested speeds (after traffic assignment) in the third scenario (I-5 Widening Alternative) were found to be virtually identical to those of the first scenario (a corridor build Alternative). Therefore, the third scenario was not included as

a five-iteration speed recycling OCTAM sensitivity run because the results would likely be similar to those of the second scenario (a corridor build Alternative).

Table 2 summarizes the countywide (Orange County) AM and PM congested speeds that were output from the initial model run and each of the five speed recycling iterations for the two scenarios that were modeled using the OCTAM. The summary indicates that the average output congested speeds are within 5 percent of the average input speeds (i.e., the output speeds from the previous iteration) in every case, with the exception of the 5.2 percent difference in the PM peak speeds after the first iteration for the scenario that is based on MPAH build out without the FTC extension. The summary also indicates that, in each scenario, the difference in the average congested speeds (AM and PM) from one iteration to the next reduces to less than 1 percent after the third iteration, which is an indication that the transportation system generally reaches convergence (i.e., equilibrium) by the third iteration. The average congested speeds in the two scenarios (the No Action Alternative versus a corridor build Alternative) differ by 1 percent or less during the speed recycling iterations and show signs of slight oscillation in the later (fourth and fifth) iterations (i.e., the increase or decrease in congested speeds from one iteration to another is higher than in earlier iterations), which is fairly common when additional iterations are performed beyond the point at which the system has reached equilibrium.

For the two scenarios that were modeled (the No Action Alternative and a corridor build Alternative), additional statistics for the initial run and each iteration of the OCTAM speed recycling sensitivity runs are summarized in Table 3, which includes countywide (Orange County) VMT and VHT by time period and roadway classification, and total lane miles by roadway classification. Table 4 summarizes the differences in daily VMT, daily VHT and roadway lane miles between the two scenarios (a corridor build Alternative versus the No Action Alternative) for the initial run and each iteration of speed recycling, as well as the elasticity of VMT with respect to roadway lane miles (the percent change in daily VMT divided by the percent change in roadway lane miles between the No Action Alternative and a corridor build Alternative) and the elasticity of VMT with respect to VHT (the percent change in daily VMT divided by the percent change in daily VHT between the No Action Alternative and a corridor build Alternative).

Similar to the congested speed summary discussed earlier, the results shown in Table 4 indicate that the difference in VMT and VHT under a corridor build Alternative versus the No Action Alternative generally levels off after the third iteration of speed recycling, although signs of oscillation appear in the later iterations (three through five). It should be noted that the differences in VMT and VHT from the initial run to the fifth iteration of speed recycling fall within a fairly narrow range with respect to the forecasted countywide (Orange County) VMT and VHT (0.06 to 0.51 percent of the countywide VMT and 0.04 to 0.98 percent of the countywide VHT) and the differences represent fairly small percentages (i.e., less than 1 percent) of the countywide daily VMT and VHT.

Comment O21-159 in the traffic report, included as Attachment A to Comment Letter O21, indicates that research on induced travel has found that the long-range elasticity of VMT with respect to roadway lane miles can range from 0.3 to 1.0, and that the long-range elasticity of VMT with respect to travel time (VHT) can range from -0.4 to 11.0. These fairly broad ranges of elasticity, which are based on four case studies that are discussed in the Attachment A report, are an indication that these types of statistics can vary a great deal depending on the physical characteristics of a project study area and the type of circulation system improvement project that is being studied. As Table 4 indicates, the elasticity of VMT with respect to added roadway lane miles (a corridor build Alternative versus the No Action Alternative) based on the results of the OCTAM speed recycling sensitivity runs ranges from 0.08 to 0.68, which is generally within the expected range. The elasticity of VMT with respect to VHT based on the OCTAM speed recycling runs is within the expected range after the initial run and after the third and fourth iterations of speed recycling (-0.06 to 10.25), but is outside of the range after the first, second and fifth

iterations (-3.40 to -0.62). This is not unusual considering that, as discussed previously, the broad range cited in the Attachment A report for the elasticity of VMT with respect to VHT indicates that this statistic can vary a great deal based on the type of project and the characteristics of the project study area. These types of variations are also not unusual considering that, as discussed earlier, the differences in VMT and VHT with and without a corridor build Alternative involve relatively small percentages of the total VMT and VHT that are forecast in Orange County.

SCSAM Results with and without Speed Recycling. To evaluate the potential effect of the OCTAM speed recycling sensitivity runs on the SCSAM traffic forecast results applied in the SOCTIIP traffic analysis, the OCTAM trip distribution/mode choice results (in the form of vehicle trip tables) with and without the FTC-South (FTC-S) from the initial runs (i.e., without speed recycling) and from the fifth iteration speed recycling runs were incorporated into the SCSAM. Corresponding SCSAM traffic forecasts were prepared and used to compare specific traffic statistics in the SOCTIIP study area (i.e., south Orange County) with and without speed recycling. For such an evaluation, traffic forecast data from the SCSAM is better suited than data from the OCTAM because of the SCSAM's finer level of detail in the SOCTIIP study area in terms of zone structure and roadway network and due to the refined traffic assignment procedures that are applied in the SCSAM.

The SCSAM results with and without speed recycling were summarized by DKS Associates in a memorandum, dated September 30, 2003, that was distributed for review by the SOCTIIP Collaborative. A copy of the memorandum is attached at the end of the traffic report that is included as Attachment B to Comment Letter O21. Various statistical summaries are provided in the memorandum to show the difference between the No Action Alternative and a corridor build Alternative (i.e., with the FTC-S) traffic forecast data with and without speed recycling. In acknowledgment of the SOCTIIP Statement of Purpose and Need, which focuses on the benefit that a SOCTIIP Alternative would have on I-5 in south Orange County, comparative statistics are summarized in the DKS Associates memorandum for PM peak-hour and average daily traffic (ADT) volumes at various locations along I-5 in the traffic analysis study area. Also, VMT and VHT statistics for south Orange County (the traffic analysis study area and nearby adjacent areas) are provided in the DKS Associates memorandum to give a general indication of the effect that the differences in traffic forecasts with and without speed recycling would potentially have on the air quality and noise impacts of a corridor build Alternative.

Table 5 summarizes PM peak-hour volumes for various locations on I-5 in the study area under 2025 No Action Alternative conditions based on the build out circulation system with the proposed Rancho Mission Viejo (RMV) development plan (from Table D-6 in the SOCTIIP Traffic and Circulation Technical Report) and the traffic volume differences between a corridor build Alternative and the No Action Alternative that are provided in Table 1 of the September 30, 2003, DKS Associates memorandum for SCSAM runs with and without speed recycling. As Table 5 indicates, the amount of PM peak-hour volume reduction on an individual I-5 segment with and without speed recycling differs by a maximum of 125 vehicles (or 1.2 percent of the PM peak-hour traffic under the No Action Alternative) on I-5 south of Avenida Pico in the northbound direction. On average, the amount of PM peak-hour volume change with speed recycling is 38 vehicles more in the northbound direction and 52 vehicles less in the southbound direction, which are differences of 0.5 percent or less of the average northbound and southbound PM peak-hour traffic volumes on I-5 under the No Action Alternative.

Table 6 summarizes SCSAM ADT data for various locations on I-5 in the study area from Table 3A of the September 30, 2003, DKS Associates memorandum, including 2025 No Action Alternative ADT volumes with and without speed recycling and the ADT differences between a Corridor Build Alternative and the No Action Alternative with and without speed recycling. The amount of ADT volume reduction on an individual I-5 segment with and without speed recycling differs by a maximum of 2,725 vehicles (or 0.9 percent of the ADT under the No Action Alternative without speed recycling) on I-5 north of

Ortega Highway. On average, the amount of ADT reduction under a corridor build Alternative is 961 vehicles less with speed recycling than without speed recycling, which is 0.3 percent of the average ADT volume on I-5 under the No Action Alternative without speed recycling.

Table 7 summarizes SCSAM daily VMT and VHT data for south Orange County taken from Table 2a, which is attached with the September 30, 2003, DKS Associates memorandum at the end of the Attachment B report submitted with Comment Letter O21. The data in Table 7 include the daily VMT and VHT under 2025 No Action Alternative conditions with and without speed recycling and the VMT and VHT differences between a corridor build Alternative and the No Action Alternative with and without speed recycling. The increases in VMT under a corridor build Alternative with and without speed recycling differ by 168,401 (or 0.8 percent of the VMT under the No Action Alternative without speed recycling). The decreases in VHT under a corridor build Alternative with and without speed recycling differ by 4,544 (or 0.8 percent of the VHT under the No Action Alternative without speed recycling).

The VMT and VHT results summarized here are consistent with the economic law of supply and demand and induced travel as discussed in Comment O21-170, which states that "...a new project will increase the supply of highways, reduce the time cost of travel (VHT), and thus increase the demand for travel (VMT), all else being equal." While this trend (i.e., increased VMT and decreased VHT under a corridor build Alternative) is evident in the results summarized here with or without speed recycling, it should be emphasized that the differences, particularly in the case of VMT, represent fairly small percentages of the forecast daily VMT in south Orange County (VMT increases with and without feedback loops of 0.9 and 0.1 percent, respectively), and even smaller percentages in terms of countywide (Orange County) or regionwide VMT. These relatively small changes in VMT compared to the No Action Alternative are a strong indicator that an Alternative such as a corridor build Alternative provides complementary capacity to I-5, and even though accessibility for local traffic changes, the net effect is that travel patterns in and around the traffic analysis study area do not change substantially.

As noted in Comments O21-15 and O21-170, Table 4-41 in the SOCTIIP Traffic and Circulation Technical Report indicates that the VMT is actually forecast to nominally decrease (no more than approximately 0.3 percent of the daily VMT in south Orange County) in the Build Alternatives under certain scenarios. The largest decreases occur in scenarios that assume the 21,000-dwelling unit Orange County Projections-2000 (OCP-2000) development plan in the RMV area, which is the highest intensification plan that was analyzed for areas surrounding Alternatives such as a corridor build Alternative. This indicates that, under such conditions, the changes in local accessibility provided by a corridor build Alternative reduces travel distances in the area (in this case, between the OCP-2000 level of development in the RMV area and the surrounding development areas in south Orange County), and that the reduction in VMT associated with the reduced travel distance more than offsets the increase in VMT (i.e., induced VMT) attributed to the added highway supply provided by a corridor build Alternative.

Table 1
OCTAM 3.1—2025 Congested Speed Summary

Scenarios[1] and Facilities	AM Peak Congested Speeds (MPH)			PM Peak Congested Speeds (mph)		
	Input	Output	Difference	Input	Output	Difference
SCENARIO 1						
Freeways	40.0	37.7	-5.8%	40.0	38.9	-2.8%
Divided Arterials	30.0	30.4	1.3%	30.0	31.0	3.3%
Undivided Arterials	27.5	31.0	12.7%	27.5	31.0	12.7%
Average[2]	33.8	33.4	-1.2%	33.8	34.1	0.9%
SCENARIO 2						
Freeways	40.0	37.7	-5.8%	40.0	38.9	-2.8%
Divided Arterials	30.0	29.7	-1.0%	30.0	30.3	1.0%
Undivided Arterials	27.5	30.7	11.6%	27.5	30.7	11.6%
Average[2]	33.8	33.0	-2.4%	33.8	33.8	0.0%
SCENARIO 3						
Freeways	40.0	38.4	-4.0%	40.0	39.6	-1.0%
Divided Arterials	30.0	29.9	-0.3%	30.0	30.4	1.3%
Undivided Arterials	27.5	30.6	11.3%	27.5	30.7	11.6%
Average[2]	33.8	33.4	-1.2%	33.8	34.1	0.9%

Source: The Orange County Transportation Authority (OCTA) and the Orange County Transportation Analysis Model, Version 3.1 (OCTAM 3.1)

[1]OCTAM 3.1 scenarios are as follows:

Scenario 1: 2025 conditions based on MPAH build out, including the southerly extension of the Foothill Transportation Corridor (i.e., a corridor build Alternative).
Scenario 2: 2025 conditions based on MPAH build out without the southerly extension of the Foothill Transportation Corridor (i.e., the No Action Alternative).
Scenario 3: 2025 conditions based on MPAH build out without the southerly extension of the Foothill Transportation Corridor and with the I-5 improvements that are proposed in the I-5 Widening Alternative.

[2]Countywide (Orange County) weighted average based on the amount of vehicle miles and vehicle hours of travel on the various components of the circulation system (freeways, divided arterials, and undivided arterials).

Table 2
OCTAM 3.1—2025 Congested Speed Summary with Speed Recycling

Facilities	AM Peak							PM Peak						
	Initial Input Speeds (mph)	Output Speeds by Iteration (mph)						Initial Input Speeds (mph)	Output Speeds by Iteration (mph)					
		Initial Run	1	2	3	4	5		Initial Run	1	2	3	4	5
MPAH BUILD OUT WITHOUT FTC-S														
Congested Speeds Countywide (Orange County)														
Freeways	40.0	37.7	35.6	37.0	37.2	37.5	37.2	40.0	38.9	35.2	37.0	37.0	37.0	37.1
Divided Arterials	30.0	29.7	30.3	30.5	30.4	30.5	30.4	30.0	30.3	30.1	30.6	30.6	30.6	30.6
Undivided Arterials	27.5	30.7	30.7	31.0	30.9	31.1	31.0	27.5	30.7	30.6	31.0	30.9	30.9	30.9
Average[1]	33.8	33.0	32.5	33.2	33.2	33.4	33.2	33.8	33.8	32.2	33.2	33.2	33.2	33.2
Percent Change in Congested Speeds Compared to the Previous Iteration														
Freeways	--	-5.7%	-5.5%	3.9%	0.4%	0.8%	-0.8%	--	-2.8%	-9.6%	5.3%	0.0%	-0.2%	0.4%
Divided Arterials	--	-1.0%	1.9%	0.7%	-0.3%	0.3%	-0.4%	--	1.1%	-0.8%	1.6%	0.1%	0.0%	-0.1%
Undivided Arterials	--	11.6%	0.1%	1.0%	-0.3%	0.5%	-0.4%	--	11.5%	-0.2%	1.2%	-0.4%	0.2%	-0.1%
Average[1]	--	-2.3%	-1.7%	2.3%	0.0%	0.5%	-0.6%	--	-0.1%	-4.8%	3.3%	0.0%	-0.1%	0.1%
MPAH BUILD OUT WITH FTC-S														
Congested Speeds Countywide (Orange County)														
Freeways	40.0	37.7	36.0	37.2	36.9	37.0	37.7	40.0	38.9	35.4	37.0	36.9	37.2	37.1
Divided Arterials	30.0	30.4	30.3	30.7	30.6	30.5	30.6	30.0	31.0	30.3	30.8	30.8	30.8	30.8
Undivided Arterials	27.5	31.0	30.8	31.2	31.0	30.9	31.0	27.5	31.0	30.6	30.9	31.1	31.1	31.0
Average[1]	33.8	33.4	32.7	33.4	33.2	33.2	33.5	33.8	34.1	32.4	33.3	33.3	33.4	33.4
Percent Change in Congested Speeds Compared to the Previous Iteration														
Freeways	--	-5.8%	-4.3%	3.3%	-1.0%	0.5%	1.7%	--	-2.8%	-9.0%	4.5%	-0.4%	0.8%	-0.1%
Divided Arterials	--	1.3%	-0.2%	1.4%	-0.5%	-0.2%	0.3%	--	3.2%	-2.2%	1.6%	0.0%	0.1%	0.0%
Undivided Arterials	--	12.7%	-0.7%	1.2%	-0.6%	-0.2%	0.3%	--	12.7%	-1.4%	1.1%	0.6%	0.2%	-0.3%
Average[1]	--	-1.2%	-2.2%	2.4%	-0.7%	0.1%	0.8%	--	1.0%	-5.2%	3.0%	-0.2%	0.4%	-0.1%

Table 2 (continued)
OCTAM 3.1—2025 Congested Speed Summary with Speed Recycling

Facilities	AM Peak							PM Peak						
	Initial Input Speeds (mph)	Output Speeds by Iteration (mph)						Initial Input Speeds (mph)	Output Speeds by Iteration (mph)					
		Initial Run	1	2	3	4	5		Initial Run	1	2	3	4	5
DIFFERENCE WITHOUT AND WITH FTC-S														
Difference in Congested Speeds Countywide (Orange County)														
Freeways	0.0	0.0	0.4	0.2	-0.3	-0.4	0.5	0.0	0.0	0.2	0.0	-0.2	0.2	0.0
Divided Arterials	0.0	0.7	0.1	0.3	0.2	0.1	0.3	0.0	0.6	0.2	0.2	0.2	0.2	0.2
Undivided Arterials	0.0	0.3	0.1	0.1	0.0	-0.2	0.0	0.0	0.3	-0.1	-0.1	0.2	0.2	0.1
Average[1]	0.0	0.4	0.2	0.2	0.0	-0.1	0.3	0.0	0.4	0.2	0.1	0.0	0.2	0.1
Percent Difference in Congested Speeds														
Freeways	0.0%	-0.1%	1.1%	0.6%	-0.8%	-1.1%	1.3%	0.0%	0.0%	0.7%	0.0%	-0.4%	0.5%	0.0%
Divided Arterials	0.0%	2.4%	0.2%	0.9%	0.7%	0.2%	0.9%	0.0%	2.1%	0.6%	0.6%	0.5%	0.7%	0.7%
Undivided Arterials	0.0%	0.9%	0.2%	0.4%	0.1%	-0.7%	0.0%	0.0%	1.0%	-0.2%	-0.3%	0.6%	0.6%	0.4%
Average[1]	0.0%	1.2%	0.6%	0.7%	0.0%	-0.4%	1.0%	0.0%	1.1%	0.6%	0.3%	0.1%	0.6%	0.4%

Abbreviations: FTC-S=Foothill Transportation Corridor South
MPAH=Orange County Master Plan of Arterial Highways

[1]Countywide (Orange County) weighted average based on the amount of vehicle miles and vehicle hours of travel on the various components of the circulation system (freeways, divided arterials, and undivided arterials).

Table 3
OCTAM 3.1—2025 Roadway Lane Miles and VMT/VHT Statistics with Speed Recycling

Time Period	MPAH Build Out without FTC-S						MPAH Build Out with FTC-S					
	Freeway	Tollway	Divided Arterial	Undivided Arterial	Centroids	Total	Freeway	Tollway	Divided Arterial	Undivided Arterial	Centroids	Total
COUNTYWIDE (ORANGE COUNTY) ROADWAY LANE MILES												
Lane Miles	1,805.7	484.4	6,239.8	1,254.4	2,013.9	11,798.2	1,808.5	570.4	6,239.8	1,254.4	2,013.9	11,887.0
VEHICLE MILES OF TRAVEL (VMT) AND VEHICLE HOURS OF TRAVEL (VHT)												
After Initial Run (No Speed Recycling)												
VMT												
AM	7,635,363	1,173,247	7,853,364	854,497	1,053,543	18,570,014	7,484,616	1,330,969	7,842,240	881,946	1,052,575	18,592,346
PM	10,523,906	1,498,660	11,165,541	1,212,833	1,660,718	26,061,658	10,346,882	1,734,011	11,108,128	1,247,217	1,659,417	26,095,655
Midday	10,923,616	962,719	8,764,767	898,962	1,676,964	23,227,028	10,867,368	1,108,651	8,669,428	908,119	1,675,830	23,229,396
Nighttime	7,514,750	644,917	4,650,781	463,959	853,368	14,127,775	7,483,585	716,934	4,596,367	472,083	852,742	14,121,711
Daily Total	36,597,635	4,279,543	32,434,453	3,430,251	5,244,593	81,986,474	36,182,451	4,890,565	32,216,163	3,509,365	5,240,564	82,039,108
VHT												
AM	202,440	21,283	264,510	27,841	35,118	551,192	198,683	23,597	258,067	28,466	35,086	543,899
PM	270,565	26,369	368,151	39,562	55,357	760,004	266,089	29,924	358,627	40,261	55,314	750,215
Midday	200,068	15,047	247,451	26,469	55,899	544,934	197,540	17,293	244,526	26,811	55,861	542,031
Nighttime	124,558	10,077	129,181	13,482	28,446	305,744	123,665	11,181	127,625	13,737	28,425	304,633
Daily Total	797,631	72,776	1,009,293	107,354	174,820	2,161,874	785,977	81,995	988,845	109,275	174,686	2,140,778
After First Iteration of Speed Recycling												
VMT												
AM	7,633,188	902,036	8,462,852	990,695	1,053,961	19,042,731	7,613,212	1,060,509	8,447,491	985,137	1,054,953	19,161,302
PM	10,723,279	1,122,662	12,304,809	1,442,313	1,662,502	27,255,565	10,702,117	1,342,898	12,252,254	1,441,006	1,663,674	27,401,948
Midday	12,077,606	791,809	9,254,563	948,155	1,682,123	24,754,256	12,045,956	930,156	9,242,897	946,675	1,683,218	24,848,902
Nighttime	8,422,972	517,225	4,657,903	467,151	853,195	14,918,448	8,410,311	606,039	4,656,456	467,062	853,950	14,993,818
Daily Total	38,857,045	3,333,733	34,680,127	3,848,314	5,251,781	85,970,999	38,771,595	3,939,601	34,599,098	3,839,879	5,255,796	86,405,969
VHT												
AM	214,205	14,872	279,714	32,264	35,132	576,186	211,271	17,444	278,607	32,020	35,165	574,508
PM	305,023	17,870	408,784	47,118	55,417	834,212	302,302	21,391	404,664	47,155	55,456	830,967
Midday	236,993	12,367	261,016	27,854	56,071	594,300	235,630	14,508	260,691	27,806	56,107	594,743
Nighttime	141,020	8,074	129,551	13,573	28,440	320,659	140,708	9,448	129,497	13,570	28,465	321,688
Daily Total	897,240	53,183	1,079,065	120,809	175,059	2,325,357	889,911	62,791	1,073,459	120,552	175,193	2,321,906

Table 3 (continued)
OCTAM 3.1—2025 Roadway Lane Miles and VMT/VHT Statistics with Speed Recycling

Time Period	MPAH Build Out without FTC-S						MPAH Build Out with FTC-S					
	Freeway	Tollway	Divided Arterial	Undivided Arterial	Centroids	Total	Freeway	Tollway	Divided Arterial	Undivided Arterial	Centroids	Total
VEHICLE MILES OF TRAVEL (VMT) AND VEHICLE HOURS OF TRAVEL (VHT) (cont)												
After Second Iteration of Speed Recycling												
VMT												
AM	7,791,503	988,470	8,150,825	935,239	1,053,941	18,919,977	7,738,585	1,151,822	8,119,995	926,882	1,054,723	18,992,007
PM	10,895,017	1,238,165	11,758,202	1,358,793	1,662,220	26,912,397	10,797,344	1,449,493	11,764,826	1,363,346	1,663,460	27,038,469
Midday	11,905,979	827,001	9,008,015	926,096	1,680,893	24,347,984	11,834,883	980,888	8,996,696	927,700	1,681,961	24,422,127
Nighttime	8,228,664	540,728	4,647,706	467,228	853,495	14,737,821	8,187,331	630,085	4,646,162	466,966	854,172	14,784,716
Daily Total	38,821,162	3,594,365	33,564,748	3,687,355	5,250,548	84,918,179	38,558,143	4,212,288	33,527,678	3,684,894	5,254,316	85,237,319
VHT												
AM	210,451	16,763	267,621	30,148	35,131	560,114	207,879	19,415	264,271	29,755	35,157	556,477
PM	294,273	20,023	384,606	43,866	55,407	798,174	291,756	23,387	382,472	44,141	55,449	797,205
Midday	225,458	12,916	253,947	27,197	56,030	575,548	223,758	15,297	253,490	27,250	56,065	575,860
Nighttime	136,892	8,440	129,279	13,577	28,450	316,637	136,213	9,822	129,200	13,567	28,472	317,275
Daily Total	867,074	58,141	1,035,452	114,788	175,018	2,250,474	859,606	67,922	1,029,433	114,712	175,144	2,246,817
After Third Iteration of Speed Recycling												
VMT												
AM	7,729,478	989,414	8,165,919	937,152	1,054,119	18,876,082	7,652,311	1,132,653	8,176,814	940,829	1,054,488	18,957,096
PM	10,834,865	1,239,318	11,752,520	1,349,999	1,662,210	26,838,912	10,732,818	1,450,646	11,763,397	1,349,471	1,662,755	26,959,087
Midday	11,866,654	834,109	9,003,040	921,524	1,680,949	24,306,276	11,775,684	980,582	9,006,920	927,317	1,681,644	24,372,146
Nighttime	8,199,624	544,186	4,644,545	466,355	853,467	14,708,177	8,146,221	630,427	4,644,580	466,813	853,805	14,741,846
Daily Total	38,630,622	3,607,026	33,566,023	3,675,030	5,250,746	84,729,446	38,307,033	4,194,309	33,591,712	3,684,430	5,252,691	85,030,174
VHT												
AM	207,963	16,687	268,753	30,290	35,137	558,831	207,532	18,924	267,317	30,382	35,150	559,304
PM	292,786	19,998	383,948	43,747	55,407	795,885	291,282	23,384	382,318	43,452	55,425	795,862
Midday	225,106	13,029	253,803	27,062	56,032	575,031	222,811	15,293	253,794	27,238	56,055	575,191
Nighttime	136,612	8,495	129,178	13,550	28,449	316,283	135,622	9,829	129,145	13,565	28,460	316,620
Daily Total	862,467	58,209	1,035,681	114,649	175,025	2,246,030	857,248	67,430	1,032,573	114,637	175,090	2,246,977

Table 3 (continued)
OCTAM 3.1—2025 Roadway Lane Miles and VMT/VHT Statistics with Speed Recycling

Time Period	MPAH Build Out without FTC-S						MPAH Build Out with FTC-S					
	Freeway	Tollway	Divided Arterial	Undivided Arterial	Centroids	Total	Freeway	Tollway	Divided Arterial	Undivided Arterial	Centroids	Total
VEHICLE MILES OF TRAVEL (VMT) AND VEHICLE HOURS OF TRAVEL (VHT) (cont)												
After Fourth Iteration of Speed Recycling												
VMT												
AM	7,708,080	1,005,402	8,143,765	933,561	1,053,630	18,844,438	7,645,490	1,142,366	8,186,892	940,612	1,054,699	18,970,060
PM	10,795,582	1,243,063	11,781,988	1,355,412	1,661,608	26,837,652	10,717,373	1,470,009	11,740,888	1,350,467	1,662,911	26,941,648
Midday	11,823,513	838,149	9,020,612	927,376	1,680,461	24,290,112	11,762,391	985,912	9,009,314	926,975	1,681,518	24,366,110
Nighttime	8,180,072	549,534	4,648,534	466,859	853,173	14,698,172	8,142,614	634,020	4,645,908	466,972	853,891	14,743,406
Daily Total	38,507,247	3,636,148	33,594,898	3,683,208	5,248,872	84,670,373	38,267,868	4,232,308	33,583,003	3,685,026	5,253,020	85,021,224
VHT												
AM	205,711	17,072	267,243	30,004	35,121	555,150	206,401	19,142	268,130	30,445	35,157	559,274
PM	292,197	20,071	385,025	43,821	55,387	796,501	288,466	23,768	381,212	43,411	55,430	792,287
Midday	224,179	13,092	254,280	27,244	56,015	574,810	222,695	15,375	253,866	27,240	56,051	575,227
Nighttime	136,136	8,580	129,288	13,565	28,439	316,007	135,548	9,884	129,183	13,568	28,463	316,646
Daily Total	858,222	58,815	1,035,836	114,633	174,962	2,242,468	853,111	68,168	1,032,391	114,663	175,101	2,243,433
After Fifth Iteration of Speed Recycling												
VMT												
AM	7,700,770	996,630	8,184,765	937,049	1,053,538	18,872,752	7,628,379	1,160,362	8,143,256	934,166	1,053,914	18,920,076
PM	10,796,161	1,246,615	11,763,708	1,361,745	1,661,879	26,830,108	10,683,165	1,454,765	11,766,110	1,351,983	1,662,454	26,918,477
Midday	11,815,159	842,865	9,024,437	927,381	1,680,676	24,290,518	11,741,086	987,494	8,999,743	926,265	1,681,322	24,335,909
Nighttime	8,173,763	552,629	4,650,719	466,790	853,287	14,697,188	8,120,570	635,964	4,645,617	466,926	853,591	14,722,669
Daily Total	38,485,853	3,638,739	33,623,629	3,692,965	5,249,380	84,690,566	38,173,200	4,238,585	33,554,726	3,679,340	5,251,282	84,897,132
VHT												
AM	207,135	16,870	269,723	30,228	35,118	559,074	202,541	19,552	265,975	30,143	35,131	553,341
PM	290,897	20,097	384,832	44,071	55,397	795,294	287,839	23,423	382,185	43,572	55,415	792,433
Midday	223,981	13,166	254,389	27,242	56,022	574,800	222,072	15,402	253,590	27,216	56,044	574,324
Nighttime	136,086	8,628	129,356	13,562	28,442	316,074	135,169	9,916	129,179	13,568	28,453	316,285
Daily Total	858,099	58,761	1,038,300	115,103	174,979	2,245,242	847,621	68,292	1,030,929	114,499	175,043	2,236,383

Abbreviations: FTC-S=Foothill Transportation Corridor South
MPAH=Orange County Master Plan of Arterial Highway

Table 4
OCTAM 3.1—2025 Differences in Countywide (Orange County) Roadway Lane Miles and VMT/VHT with and without the FTC-S

Roadway Lane Miles		Vehicle Miles of Travel (VMT)		Vehicle Hours of Travel (VHT)		Elasticity of VMT to Roadway Lane Miles	Elasticity of VMT to VHT
Difference	% Difference	Difference	% Difference	Difference	% Difference		
After Initial Run (No Speed Recycling)							
88.8	0.75%	52,634	0.06%	-21,096	-0.98%	0.08	-0.06
After First Iteration Of Speed Recycling							
88.8	0.75%	434,970	0.51%	-3,450	-0.15%	0.68	-3.40
After Second Iteration Of Speed Recycling							
88.8	0.75%	319,140	0.38%	-3,657	-0.16%	0.51	-2.38
After Third Iteration Of Speed Recycling							
88.8	0.75%	300,728	0.35%	947	0.04%	0.47	8.75
After Fourth Iteration Of Speed Recycling							
88.8	0.75%	350,851	0.41%	965	0.04%	0.55	10.25
After Fifth Iteration Of Speed Recycling							
88.8	0.75%	206,566	0.24%	-8,859	-0.39%	0.32	-0.62

Abbreviations: FTC-S=Foothill Transportation Corridor South

Note: Differences listed in this table are for a corridor build Alternative (i.e., with the FTC-S) compared to the No Action Alternative (i.e., without the FTC-S), and the percent difference is with respect to the No Action Alternative.

Table 5
SCSAM—2025 PM Peak-Hour Volumes on I-5 with and without Speed Recycling

Freeway Segment	Direction	No Action Alternative[a]	Change in Volume with a Corridor Build Alternative			
			Without Speed Recycling[b]	With Speed Recycling[b]	Difference	% Difference[c]
I-5 north of Alicia Parkway	Northbound	10,620	-582	-632	-50	-0.5%
	Southbound	12,740	-787	-727	60	0.5%
I-5 north of Oso Parkway	Northbound	9,620	-682	-730	-48	-0.5%
	Southbound	10,130	-895	-818	77	0.8%
I-5 north of Ortega Highway	Northbound	10,900	-1,065	-993	72	0.7%
	Southbound	12,170	-1,111	-1,057	54	0.4%
I-5 south of Avenida Pico	Northbound	10,080	-1,745	-1,870	-125	-1.2%
	Southbound	10,790	-2,366	-2,349	17	0.2%
Average	**Northbound**	**10,305**	**-1,019**	**-1,056**	**-38**	**-0.4%**
	Southbound	**11,458**	**-1,290**	**-1,238**	**52**	**0.5%**

[a]Source: Table D-6 in the SOCTIIP Traffic and Circulation Technical Report.
[b]Source: Table 1 in the memorandum "Expanded Discussion on Induced Travel Demand", DKS Associates, April 30, 2003.
[c]Compared to the PM peak-hour volume in the No Action Alternative.

Table 6
SCSAM—2025 ADT Volumes on I-5 with and without Speed Recycling

Freeway Segment	No Action Alternative		Change in Volume with a Corridor Build Alternative			
	Without Speed Recycling[a]	With Speed Recycling[a]	Without Speed Recycling[a]	With Speed Recycling[a]	Difference	% Difference[b]
I-5 south of Avenida Pico	261,132	261,736	-25,787	-25,887	-100	0.0%
I-5 north of Avenida Pico	279,047	284,301	-19,724	-17,391	2,333	0.8%
I-5 north of Ortega Highway	316,936	322,801	-16,763	-14,038	2,725	0.9%
I-5 north of Alicia Parkway	350,347	352,478	-7,426	-6,973	453	0.1%
I-5 south of I-405	424,110	429,497	-7,001	-7,609	-608	-0.1%
Average	**326,314**	**330,163**	**-15,340**	**-14,380**	**961**	**0.3%**

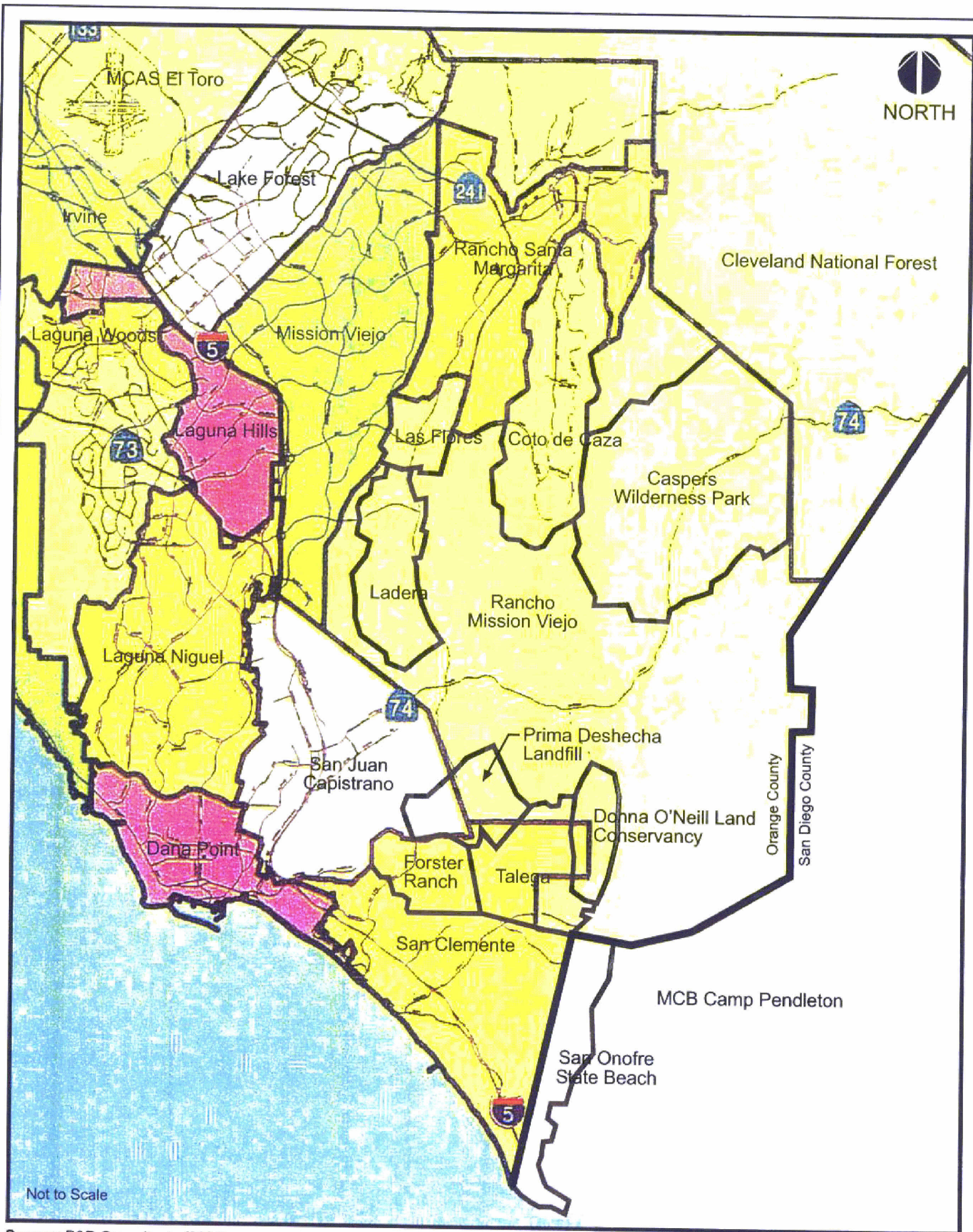
Abbreviations: ADT=Average Daily Traffic

[a]Source: Table 3A in the memorandum "Expanded Discussion on Induced Travel Demand", DKS Associates, April 30, 2003.
[b]Compared to the ADT volume in the No Action Alternative without speed recycling.

Table 7
SCSAM—2025 Daily VMT and VHT in South Orange County with and without Speed Recycling

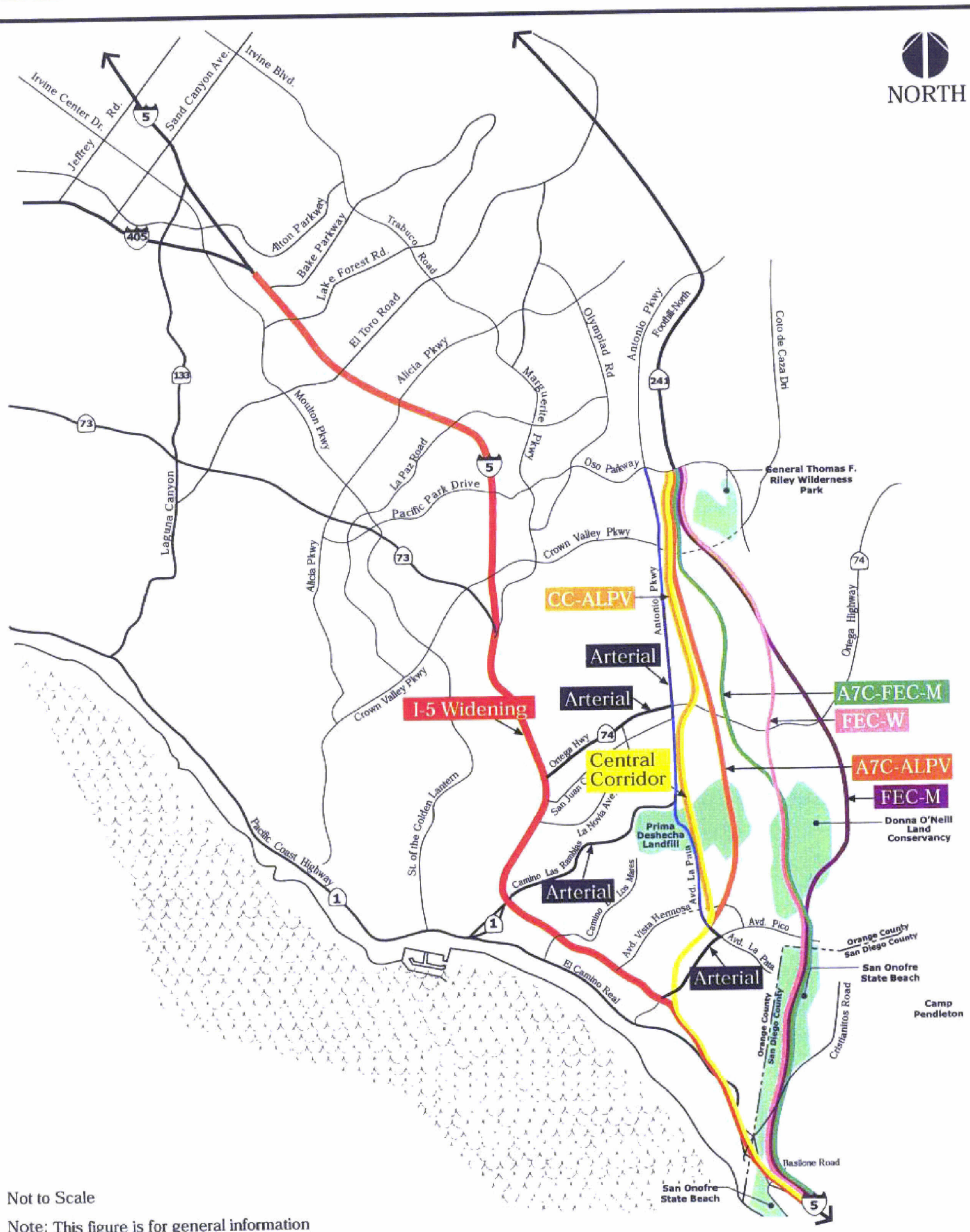
	No Action Alternative		Change in Volume with a Corridor Build Alternative			
	Without Speed Recycling[a]	With Speed Recycling[a]	Without Speed Recycling[a]	With Speed Recycling[a]	Difference	% Difference[b]
Vehicle Miles of Travel (VMT)	21,481,421	21,610,933	22,614	191,015	168,401	0.8%
Vehicle Hours of Travel (VHT)	602,621	602,929	-18,402	-13,858	4,544	0.8%

[a]Source: Table 2a in the memorandum "Expanded Discussion on Induced Travel Demand," DKS Associates, April 30, 2003.
[b]Compared to the VMT or VHT in the No Action Alternative without speed recycling.



Source: P&D Consultants (2001).

Local Jurisdictions, Communities and Major Land Uses in the SOCTIIP Study Area



Not to Scale

Note: This figure is for general information purposes only. For more detailed information, refer to the figures of the SOCTIIP Alternatives in Appendix A.1 of this EIS/SEIR.

Source: P&D Consultants (2003).

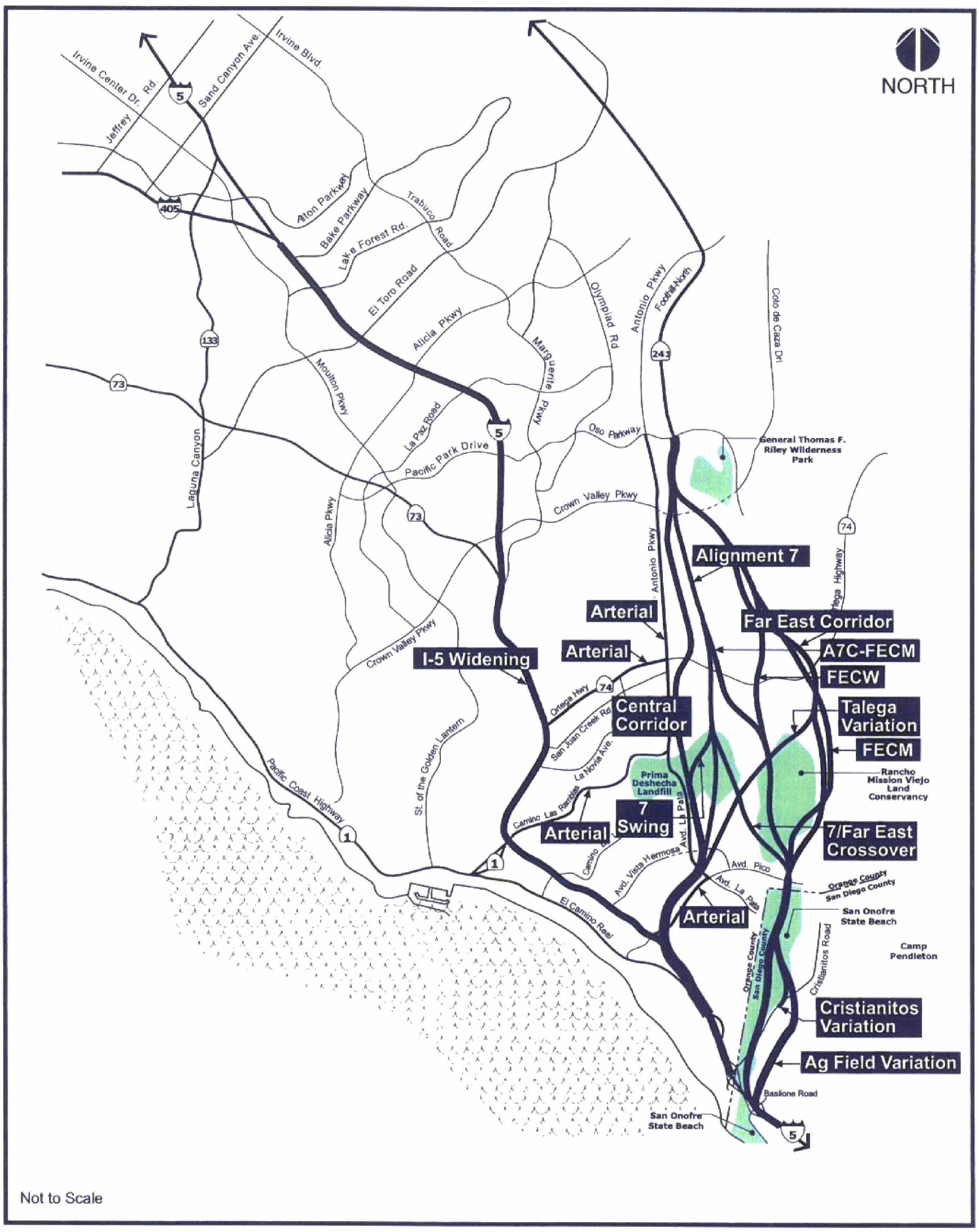
Alignments of the Build Alternatives

Preferred Alternative

SOCTIIP EIS/SEIR

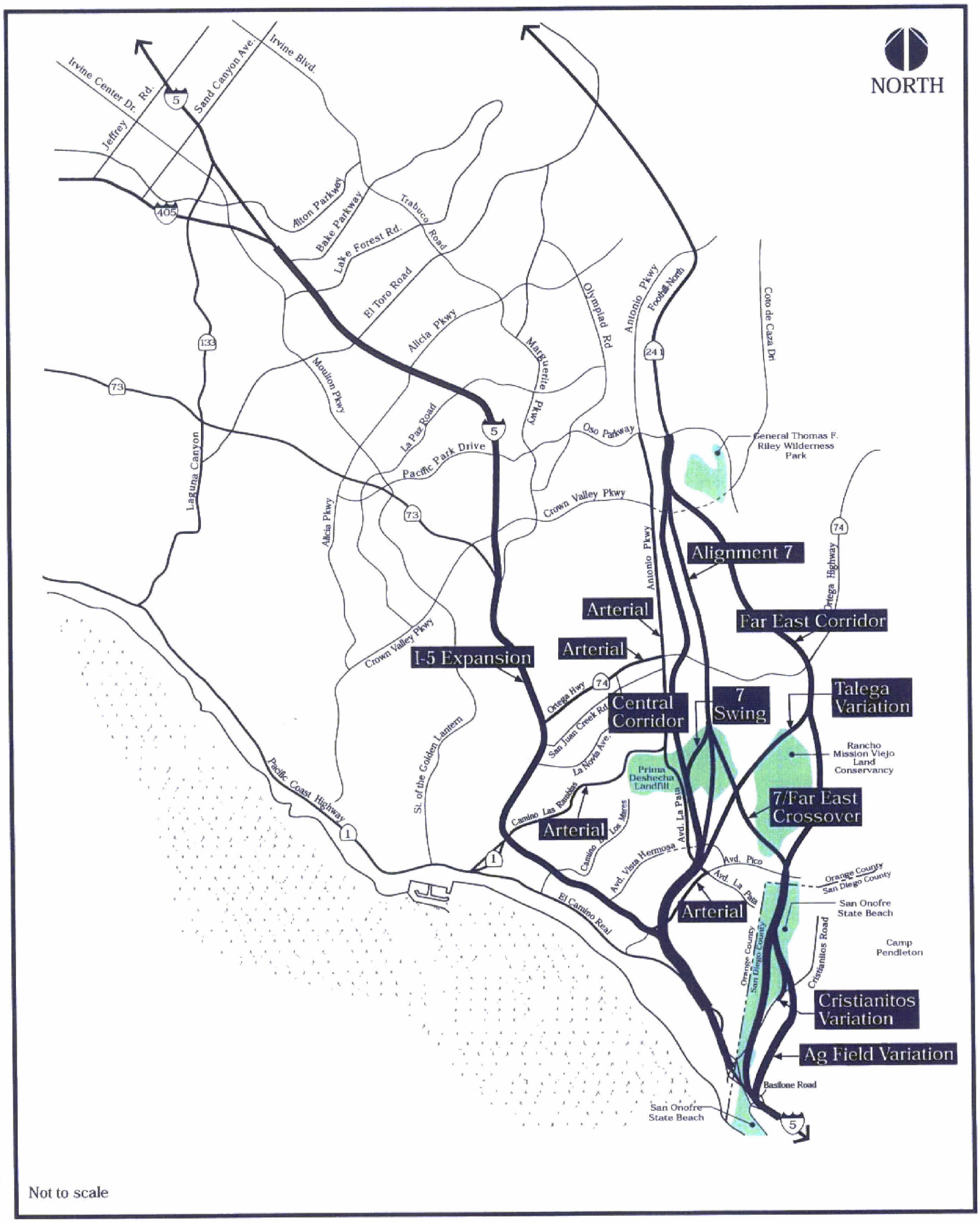
Figure ES.1-2A

(11/29/05) i:\tca430\gis\E_PreferredAlt.mxd



Source: P&D Consultants (2003).

Alignments Considered by the Phase II SOCTIIP Collaborative



Source: P&D Consultants (2002).

Alignments Developed by the Phase I SOCTIIP Collaborative

Table ES.6-1
Summary of Adverse Impacts before Mitigation

Impacts	FEC-M	FEC-W	CC	CC-ALPV	A7C-FEC-M/ Preferred	A7C-ALPV	AIO	I-5	No Action
SUMMARY OF TRAFFIC IMPACTS									
Operations: intersections, freeway segments and ramps which experience peak hour beneficial effects.[1]	33 locations (21 intersections, six freeway segments and six ramps).	33 locations (21 intersections, six freeway segments and six ramps).	32 locations (20 intersections, six freeway segments and six ramps).	18 locations (12 intersections, three freeway segments and three ramps).	32 locations (20 intersections, six freeway segments and six ramps).	18 locations (12 intersections, three freeway segments and three ramps).	Six locations (five intersections and one ramp).	38 locations (19 intersections, 10 freeway segments and nine ramps).	Not applicable.
Operations: direct adverse peak hour impacts to intersections and ramps.[1]	None.	None.	One intersection and two ramps.	Seven intersections and three ramps.	None.	Seven intersections and three ramps.	15 intersections and nine ramps.	12 intersections and seven ramps.	Not applicable.
Operations: indirect adverse peak hour impacts to I-5 ramps and intersections.[1]	One I-5 ramp intersection and five I-5 ramps.	One I-5 ramp intersection and five I-5 ramps.	One I-5 ramp intersection and four I-5 ramps.	One I-5 ramp intersection and three I-5 ramps.	One I-5 ramp intersection and five I-5 ramps.	One I-5 ramp intersection and three I-5 ramps.	One I-5 ramp.	None.	NA
Construction: short term adverse construction impacts on the circulation system.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	No.
SUMMARY OF IMPACTS RELATED TO WETLANDS AND WATERS OF THE UNITED STATES									
Construction: filling of WoUS and wetlands	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Not applicable.
Construction: direct and indirect: indirect impacts (water quality, changes in runoff volumes/velocity).	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Not applicable.
Operations: impacts (water quality, changes in runoff volume/velocity).	No.	No.	No.	No.	No.	No.	No.	No.	No.
SUMMARY OF IMPACTS RELATED TO WILDLIFE, FISHERIES AND VEGETATION[2]									
Temporary and permanent loss of plant communities.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Not applicable.
Loss of sensitive plant species.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Not applicable.
Wildlife habitat loss and fragmentation.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Not applicable.
Impacts to wildlife corridors.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Not applicable.
Construction: indirect impacts on plant communities.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Not applicable.
Construction and operations: indirect impacts on wildlife.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Not applicable.

Table ES.6-1 (continued)
Summary of Adverse Impacts before Mitigation

Impacts	FEC-M	FEC-W	CC	CC-ALPV	A7C-FEC-M/ Preferred	A7C-ALPV	AIO	I-5	No Action
SUMMARY OF IMPACTS RELATED TO THREATENED AND ENDANGERED SPECIES[3]									
Direct and indirect impacts to thread leaved brodiaea, San Diego fairy shrimp, Riverside fairy shrimp, tidewater goby, southern steelhead trout, arroyo toad, least Bell's vireo, California gnatcatcher and pacific pocket mouse.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Not applicable.
SUMMARY OF IMPACTS RELATED TO WATER QUALITY									
Construction Impacts	With implementation of the Storm Water Management Plan (SWMP) and Storm Water Pollution Prevention Plan (SWPPP) there is minimal potential for substantive adverse impacts during construction.	With the implementation of the SWMP and SWPPP there is minimal potential for substantive adverse impacts during construction.	With the implementation of the SWMP and SWPPP there is minimal potential for substantive adverse impacts during construction.	With the implementation of the SWMP and SWPPP there is minimal potential for substantive adverse impacts during construction.	With the implementation of the SWMP and SWPPP there is minimal potential for substantive adverse impacts during construction.	With the implementation of the SWMP and SWPPP there is minimal potential for substantive adverse impacts during construction.	With the implementation of the SWMP and SWPPP there is minimal potential for substantive adverse impacts during construction.	With the implementation of the SWMP and SWPPP there is minimal potential for substantive adverse impacts during construction.	No adverse impacts assuming other projects developed include similar water quality protection assurance.
Erosion/Sedimentation	No adverse impacts.	No adverse impacts.	Adverse impact at Cañada Chiquita and Segunda Deshecha Cañada.	Adverse impact at Cañada Chiquita and Segunda Deshecha Cañada.	No adverse impacts.	Adverse impact at Cañada Chiquita.	No adverse impacts.	No adverse impacts.	No adverse impacts assuming other projects developed include similar water quality protection assurances.
Surface Water Quality	No adverse impacts with full implementation of Project Design Features (PDFs).	No adverse impacts with full implementation of PDFs.	No adverse impacts with full implementation of PDFs.	No adverse impacts with full implementation of PDFs.	No adverse impacts with full implementation of PDFs.	No adverse impacts with full implementation of PDFs.	No adverse impacts with full implementation of PDFs.	No adverse impacts with full implementation of PDFs.	No adverse impacts assuming other projects developed include similar water quality protection assurances.
Groundwater Quality	No adverse impacts.	No adverse impacts.	No adverse impacts.	No adverse impacts.	No adverse impacts.	No adverse impacts.	No adverse impacts.	No adverse impacts.	No adverse impacts.
SUMMARY OF IMPACTS RELATED TO SOCIOECONOMICS, ENVIRONMENTAL JUSTICE AND GROWTH INDUCEMENT									
Congestion relief and economic benefits.	Long term congestion relief (20,000 hours of vehicle travel time per day in 2025) resulting in economic benefits in terms of the value of time saved and increased economic activity from improved mobility for people, goods and services. Beneficial.	Long term congestion relief (20,000 hours of vehicle travel time per day in 2025) resulting in economic benefits in terms of the value of time saved and increased economic activity from improved mobility for people, goods and services. Beneficial.	Long term congestion relief (18,000 hours of vehicle travel time per day in 2025) resulting in economic benefits in terms of the value of time saved and increased economic activity from improved mobility for people, goods and services. Beneficial.	Long term congestion relief (8,000 hours of vehicle travel time per day in 2025) resulting in economic benefits in terms of the value of time saved and increased economic activity from improved mobility for people, goods and services. Beneficial.	Long term congestion relief (21,000 hours of vehicle travel time per day in 2025) resulting in economic benefits in terms of the value of time saved and increased economic activity from improved mobility for people, goods and services. Beneficial.	Long term congestion relief (8,000 hours of vehicle travel time per day in 2025) resulting in economic benefits in terms of the value of time saved and increased economic activity from improved mobility for people, goods and services. Beneficial.	Long term congestion relief (5,000 hours of vehicle travel time per day in 2025) resulting in economic benefits in terms of the value of time saved and increased economic activity from improved mobility for people, goods and services. Beneficial.	Long term congestion relief (20,000 hours of vehicle travel time per day in 2025) resulting in economic benefits in terms of the value of time saved and increased economic activity from improved mobility for people, goods and services. Beneficial.	Foregone long term congestion relief (ranging from 5,000 to 21,000 hours of vehicle travel time per day in 2025 compared to Build Alternatives) and resulting economic benefits in terms of the value of time saved and increased economic activity from improved mobility for people, goods and services. Adverse.

Table ES.6-1 (continued)
Summary of Adverse Impacts before Mitigation

Impacts	FEC-M	FEC-W	CC	CC-ALPV	A7C-FEC-M/ Preferred	A7C-ALPV	AIO	I-5	No Action
Agricultural operations displaced.	Two	One	Three	Three	0	0	Two	0	0
Residential units displaced.	0	0	593 (I) 602 (U)	2 (I) 14 (U)	0	80 (I) 92 (U)	263	838	0
Residents displaced.	0	0	1,380 (I) 1,405 (U)	7 (I) 44 (U)	0	256 (I) 293 (U)	827	1,970	0
Businesses, institutional and non-profit uses displaced.	0	0	106 (I and U)	0	0	0	17	382	0
Employees displaced.	0	0	1,100	0	0	0	200	4,150	0
Reduction in tax revenues.	Yes. Minor impact.	Yes. Minor impact.	Yes. Substantial adverse impact in San Clemente.	Yes. Minor impact.	Yes. Minor impact.	Yes. Minor impact.	Yes. Minor impact.	Yes. Substantial adverse impact in Mission Viejo, San Juan Capistrano and San Clemente.	NA
Construction jobs.	19,000 (I) 23,000 (U)	17,000 (I) 21,000 (U)	23,000 (I) 31,000 (U)	15,000 (I) 18,000 (U)	17,000 (I) 21,000 (U)	28,000 (I) 30,000 (U)	11,000	43,000	0
Impacts environmental justice population.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Affects community cohesion/division.	No.	No.	Yes; Talega Planned Community and San Clemente.	No.	No.	Yes; Talega Planned Community	No.	Yes; Dana Point, Laguna Hills, Laguna Niguel, Lake Forest, San Clemente, San Juan Capistrano.	No.
Capacity impacts at Prima Deshecha landfill.	No.	No.	Yes.	Yes.	No.	Yes.	Yes.	No.	No.
Potential to induce or facilitate growth.	Yes; relatively greater potential to facilitate growth because alignment passes through undeveloped areas.	Yes; relatively greater potential to facilitate growth because alignment passes through undeveloped areas.	Yes; relatively greater potential to facilitate growth because alignment passes through undeveloped areas.	Yes; relatively greater potential to facilitate growth because alignment passes through undeveloped areas.	Yes; relatively greater potential to facilitate growth because alignment passes through undeveloped areas.	Yes; relatively greater potential to facilitate growth because alignment passes through undeveloped areas.	Yes; relatively greater potential to facilitate growth because alignment passes through undeveloped areas.	Yes; relatively lower potential to facilitate growth because alignment passes primarily through developed areas.	Yes; relatively lower potential to facilitate growth because alignments of existing and MPAH roads pass primarily through developed areas.
SUMMARY OF IMPACTS RELATED TO AIR QUALITY									
Operations: exceedences of SCAQMD thresholds.	Yes: NO_x.	Yes: NO_x.	Yes: NO_x.	Yes: NO_x.	Yes: NO_x.	Yes: NO_x.	Yes: NO_x.	Yes: NO_x.	Yes: ROG, CO
Construction: exceedences of SCAQMD thresholds.	Yes: CO, HC, NO_x and PM_{10}.	Yes: CO, HC, NO_x and PM_{10}.	Yes: CO, HC, NO_x and PM_{10}.	Yes: CO, HC, NO_x and PM_{10}.	Yes: CO, HC, NO_x and PM_{10}.	Yes: CO, HC, NO_x and PM_{10}.	Yes: CO, HC, NO_x and PM_{10}.	Yes: CO, HC, NO_x and PM_{10}.	No applicable.
SUMMARY OF IMPACTS RELATED TO NOISE[5]									
Operations: number of residences impacted before and after mitigation. (x/x)	50/1	50/1	290/0	30/0	120/1	65/0	0/0	775/225	585/Not applicable.
Operations: number of businesses impacted before and after mitigation. (x/x)	0/0	0/0	1/0	0/0	0/0	0/0	0/0	5/0	8/not applicable.
Operations: number of schools impacted before and after mitigation. (x/x)	2/0	2/0	4/0	1/0	2/0	1/0	1/0	8/0	9/not applicable.
Operations: number of	2/0	2/0	0/0	0/0	2/0	0/0	0/0	4/1	2/not applicable.

Table ES.6-1 (continued)
Summary of Adverse Impacts before Mitigation

Impacts	FEC-M	FEC-W	CC	CC-ALPV	A7C-FEC-M/ Preferred	A7C-ALPV	AIO	I-5	No Action
parks impacted before and after mitigation. (x/x)									
Construction: pile driving at night.	Yes.	Yes.	Yes.	No.	Yes.	No.	No.	Yes.	Not applicable.
Construction: general construction noise.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Not applicable.
Construction: haul route traffic noise.	Possible.	Possible.	Possible.	Possible.	Possible.	Possible.	Possible.	Possible.	Not applicable.
Construction: nighttime demolition.	No.	No.	No.	No.	No.	No.	No.	Yes.	Not applicable.
SUMMARY OF IMPACTS RELATED MILITARY USES AND CAMP PENDLETON									
Construction: special use airspace.	Yes.	Yes.	Yes.	Not applicable.	Yes.	Not applicable.	Not applicable.	Yes.	Not applicable.
Construction: aviation training activities.	Yes.	Yes.	Yes.	Not applicable.	Yes.	Not applicable.	Not applicable.	Yes.	Not applicable.
Construction: ground and amphibious training.	Yes.	Yes.	No.	Not applicable.	Yes.	Not applicable.	Not applicable.	No.	Not applicable.
Construction: land use.	Yes.	Yes.	No.	Not applicable.	Yes.	Not applicable.	Not applicable.	No.	Not applicable.
Construction: security.	Yes.	Yes.	Yes.	Not applicable.	Yes.	Not applicable.	Not applicable.	Yes.	Not applicable.
Operations: special use airspace.	No.	No.	No.	Not applicable.	No.	Not applicable.	Not applicable.	No.	Not applicable.
Operations: aviation training activities.	Yes.	Yes.	No.	Not applicable.	Yes.	Not applicable.	Not applicable.	No.	Not applicable.
Operations: ground and amphibious training.	Yes.	Yes.	No.	Not applicable.	Yes.	Not applicable.	Not applicable.	No.	Not applicable.
Operations: land use.	Yes.	Yes.	No.	Not applicable.	Yes.	Not applicable.	Not applicable.	No.	Not applicable.
Operations: security.	Yes.	Yes.	No.	Not applicable.	Yes.	Not applicable.	Not applicable.	Yes.	Not applicable.
SUMMARY OF IMPACTS RELATED TO VISUAL RESOURCES									
Construction: short-term adverse visual impacts during construction.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Light and Glare: increase in light and glare.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Visual Quality: reduction in visual quality.	17 locations	18 locations	15 locations	12 locations	18 locations	15 locations	3 locations	Blockage of some ocean views by soundwalls.	No
View Quality: reduction in quality of regionally outstanding views.	1 view	2 views	1 view	1 view	3 views	3 views (Positive impact on 1 view)	No	No	No
Community Character: removal of community elements/landmarks or conflict with community goals and policies or physical division of a community.	Conflicts with policies of three jurisdictions	Conflicts with policies of four jurisdictions	Conflicts with policies of two jurisdictions. Divides two communities.	Conflicts with policies of one jurisdiction. Divides one community.	Conflicts with policies of four jurisdictions.	Conflicts with policies of one jurisdiction. Partially eliminates one community element. Physically divides one community.	Conflicts with policies of one jurisdiction.	No	No
SUMMARY OF LAND USE IMPACTS									
Impacts on existing and planned land uses.	Yes – County of Orange, RMV and SOSB.	Yes – County of Orange, RMV and SOSB.	Yes – County of Orange and San Clemente.	Yes – County of Orange and San Clemente.	Yes – County of Orange, RMV and SOSB.	Yes – County of Orange and San Clemente.	Yes – County of Orange and San Clemente.	Yes – County of Orange, Irvine, Lake Forest, Laguna Hills,	No.

Table ES.6-1 (continued)
Summary of Adverse Impacts before Mitigation

Impacts	FEC-M	FEC-W	CC	CC-ALPV	A7C-FEC-M/ Preferred	A7C-ALPV	AIO	I-5	No Action
								Laguna Woods, Mission Viejo, Laguna Niguel, San Juan Capistrano, Dana Point and San Clemente.	
Divides existing communities.	No	No	Yes	Yes	No	Yes	Yes	No	NA
Total hectares (acres) of land permanently used for Alternative.	I: 417 (1,031) U: 467 (1,156)	I: 427 (1,056) U 443 (1,097)	I: 395 (976) U: 460 (1,138)	I: 244 (597) U: 310 (764)	I: 432 (1,067) U: 487 (1,207)	I: 351 (867) U: 398 (983)	177 (436)	506 (1,247)	0 (0)
Total hectares (acres) of land temporarily occupied during construction.	I: 488 (1,206) U: 519 (1,282)	I: 467 (1,155) U: 489 (1,208)	I: 488 (1,206) U: 527 (1,305)	I: 329 (813) U: 371 (919)	I: 511 (263) U: 531 (1,314)	I: 374 (918) U: 429 (1,061)	255 (630)	506 (1,250)	0 (0)
Consistent with adopted land use plans.	Yes.	No.	No.	No.	No.	No.	No.	No.	No
SUMMARY OF IMPACTS RELATED TO RECREATION RESOURCES									
Construction: number of resources affected by construction noise impacts.	Nine existing.	Nine existing.	12 existing.	Three existing.	Nine existing.	Four existing.	Two existing.	44 existing.	0
Construction: number of resources affected by construction air quality impacts.	Three existing. One proposed.	Three existing. One proposed.	Five existing. Three proposed.	One existing. Two proposed.	Three existing. One proposed.	Two existing. Two proposed.	Four existing. Three proposed.	14 existing. Four proposed.	0
Construction: number of resources affected by short term occupancy of property.	Three existing. One proposed.	Three existing. One proposed.	Five existing. Two proposed.	One existing. Two proposed.	Three existing. One proposed.	Three existing. One proposed.	Three existing. Three proposed.	12 existing. One proposed.	0
Construction: number of resources affected by short term traffic impacts.	One existing.	One existing.	0	0	One existing.	0	0	0	0
Operations: number of resources affected by long term noise impacts.	Three existing.	Three existing.	Four existing.	One existing.	Three existing.	Two existing.	0	12 existing.	0
Operations: number of resources affected by long term air quality impacts.	0	0	0	0	0	0	0	0	0
Operations Construction: number of resources affected by permanent acquisition of property.	Three existing. One proposed.	Three existing. One proposed.	Five existing. Two proposed.	One existing. Two proposed.	Three existing. One proposed.	One existing. Two proposed.	Three existing. Three proposed.	12 existing. One proposed.	0
Operations: number of resources affected by long term traffic impacts.	0	0	0	0	0	0	0	0	0
Operations: number of resources affected by long term visual impacts.	Two existing. One proposed.	Two existing. One proposed.	Three proposed.	Three proposed.	Two existing One proposed.	One existing. Three proposed.	0	0	0
SUMMARY OF IMPACTS RELATED TO FLOODPLAINS, WATERWAYS AND HYDROLOGIC SYSTEMS									
Floodplain Encroachment	Temporary adverse impacts due to	Temporary adverse impacts due to	Adverse impacts at the Cañada Chiquita and	Adverse impacts at the Cañada Chiquita	Temporary adverse impacts due to	Adverse impacts occur at the east-west	Temporary adverse impacts due to	Temporary adverse impacts due to	No impacts.

Table ES.6-1 (continued)
Summary of Adverse Impacts before Mitigation

Impacts	FEC-M	FEC-W	CC	CC-ALPV	A7C-FEC-M/ Preferred	A7C-ALPV	AIO	I-5	No Action
	construction will be minimized through implementation of a SWPPP.	construction will be minimized through implementation of a SWPPP.	Segunda Deshecha Cañada crossings are likely; however the culverts at these locations have not been designed. It is anticipated that the design will include PDFs to minimize adverse impacts. Severe encroachment on Cañada Chiquita just north of the San Juan Creek confluence results in adverse impacts that could only be avoided by major re-design. Temporary adverse impacts due to construction will be minimized through implementation of a SWPPP.	crossing are likely; however, the culvert at this location has not been designed. It is anticipated that the design will include PDFs to minimize adverse impacts. Severe encroachment on Cañada Chiquita just north of the San Juan Creek confluence results in adverse impacts that could only be avoided by major re-design. Temporary adverse impacts due to construction will be minimized through implementation of a SWPPP.	construction will be minimized through implementation of a SWPPP.	connector crossing at Cañada Chiquita due to the highway embankment fill encroaching onto the easterly floodplain of the creek. The culvert at the Segunda Deshecha Cañada crossing has not been designed; however it is anticipated that the design will not result in adverse impacts.	construction will be minimized through implementation of a SWPPP.	construction will be minimized through implementation of a SWPPP.	
Impacts to Residential, Non-Residential and Cropland	No adverse impacts to Cañada Gobernadora, San Juan Creek and Cristianitos Creek. San Mateo Creek: minor impacts to agricultural buildings, potable water wells and cropland which are in the existing floodplain. San Onofre Creek: minor impacts to the existing access road under I-5 which is in the existing floodplain.	No adverse impacts to Cañada Gobernadora and San Juan Creek. San Mateo Creek: minor impacts to agricultural buildings, potable water wells and cropland which are in the existing floodplain. San Onofre Creek: minor impacts to the existing access road under I-5 which is in the existing floodplain.	No adverse impacts.	No adverse impacts.	No adverse impacts to San Juan Creek. San Mateo Creek: minor impacts to agricultural buildings, potable water wells and cropland which are in the existing floodplain. San Onofre Creek: minor impacts to the existing access road under I-5 which is in the existing floodplain.	No adverse impacts.	No adverse impacts.	No adverse impacts.	No impacts.
Impacts Due to Scouring	No adverse impacts. Any minor impacts due to localized bridge scour are addressed by PDFs.	No adverse impacts. Any minor impacts due to localized bridge scour are addressed by PDFs.	It is anticipated that the crossings at Cañada Chiquita and Segunda Deshecha Cañada will include specific PDFs (such as energy dissipater structures) to minimize local scour.	It is anticipated that the crossing at Cañada Chiquita will include specific PDFs (such as energy dissipater structures) to minimize local scour. Severe encroachment on	No adverse impacts. Any minor impacts due to localized bridge scour are addressed by PDFs.	No adverse impacts to velocity at the east-west connector at Cañada Chiquita; however, scour may be a concern as the alternative encroaches severely onto a low flow channel in Cañada Chiquita.	No adverse impacts. Any minor impacts due to localized bridge scour are addressed by PDFs.	No adverse impacts. Any minor impacts due to localized bridge scour are addressed by PDFs.	No impacts.

Table ES.6-1 (continued)
Summary of Adverse Impacts before Mitigation

Impacts	FEC-M	FEC-W	CC	CC-ALPV	A7C-FEC-M/ Preferred	A7C-ALPV	AIO	I-5	No Action
			Severe encroachment on Cañada Chiquita just north of the San Juan Creek confluence results in adverse impacts that could only be avoided by major re-design.	Cañada Chiquita just north of the San Juan Creek confluence results in adverse impacts that could only be avoided by major re-design.					
Impacts to Traffic during Flood Events	Minor impact to flood potential of the Beach Club Road crossing at San Onofre Creek.	Minor impact to flood potential of the Beach Club Road crossing at San Onofre Creek.	No adverse impacts.	No adverse impacts.	Minor impact to flood potential of the Beach Club Road crossing at San Onofre Creek.	No adverse impacts.	No adverse impacts.	No adverse impacts.	No impacts.
Risk Associated with Implementation	Low risk associated with the crossings.	Low risk associated with the crossings.	Low risk associated with the crossings.	Low risk associated with the crossings.	Low risk associated with the crossings.	Low risk associated with the crossings.	Moderate risk for Segunda Deshecha Cañada.	Low risk associated with the crossings.	No impacts.
Impacts on Natural and Beneficial Floodplain Values	PDFs minimize scour potential from erosive velocities and maintain beneficial floodplain values.	PDFs minimize scour potential from erosive velocities and maintain beneficial floodplain values.	Potential adverse impacts at the Cañada Chiquita and Segunda Deshecha Cañada crossings could be minimized with PDFs. Severe encroachment on Cañada Chiquita just north of the San Juan Creek confluence results in adverse impacts that could only be avoided by major re-design.	Potential adverse impacts at the Cañada Chiquita crossing could be minimized with PDFs. Severe encroachment on Cañada Chiquita just north of the San Juan Creek confluence results in adverse impacts that could only be avoided by major re-design.	PDFs minimize scour potential from erosive velocities and maintain beneficial floodplain values.	Adverse impacts due to the east-west connector crossing at Cañada Chiquita could be minimized by re-designing the highway embankment fill such that it did not encroach onto the easterly floodplain of the creek.	PDFs minimize scour potential from erosive velocities and maintain beneficial floodplain values.	PDFs minimize scour potential from erosive velocities and maintain beneficial floodplain values.	No impacts.
Support of Probable Incompatible Floodplain Development	No potential incompatible floodplain development.	No potential incompatible floodplain development.	No potential incompatible floodplain development.	No potential incompatible floodplain development.	No potential incompatible floodplain development.	No potential incompatible floodplain development.	No potential incompatible floodplain development.	No potential incompatible floodplain development.	No impacts.
Practicability of Alternative to Any Significant Encroachment	No significant encroachment to floodplain; therefore, no alternatives need to be addressed.	No significant encroachment to floodplain; therefore, no alternatives need to be addressed.	Site constraints limit the practicability of alternatives at the Cañada Chiquita and Segunda Deshecha Cañada crossings. A bridge alternative would require a minimum of four bridge structures and extensive retaining walls. The feasibility of alternatives to reduce the extent of the culvert and channels will continue to be evaluated in final design if this Alternative is selected.	Site constraints limit the practicability of alternatives at the Cañada Chiquita crossing. A bridge alternative would require a minimum of four bridge structures and extensive retaining walls. The feasibility of alternatives to reduce the extent of the culvert and channels will continue to be evaluated in final design if this Alternative is selected.	No significant encroachment to floodplain; therefore, no alternatives need to be addressed.	The east-west connector crossing at Cañada Chiquita could be refined to minimize the encroachment of the highway embankment fill onto the easterly floodplain.	No significant encroachment to floodplain; therefore, no alternatives need to be addressed.	No significant encroachment to floodplain; therefore, no alternatives need to be addressed.	No impacts.
Practicability of Alternative to Longitudinal	No longitudinal encroachments;	No longitudinal encroachments;	Results in a severe longitudinal encroachment	Results in a severe longitudinal	No longitudinal encroachments;	No longitudinal encroachments;	No longitudinal encroachments;	No longitudinal encroachments;	No impacts.

Table ES.6-1 (continued)
Summary of Adverse Impacts before Mitigation

Impacts	FEC-M	FEC-W	CC	CC-ALPV	A7C-FEC-M/ Preferred	A7C-ALPV	AIO	I-5	No Action
Encroachments	therefore, no alternatives need to be addressed.	therefore, no alternatives need to be addressed.	north of the confluence of Cañada Chiquita and San Juan Creek. An alternative would be shifting the horizontal alignment to the west, away from Cañada Chiquita.	encroachment north of the confluence of Cañada Chiquita and San Juan Creek. An alternative would be shifting the horizontal alignment to the west, away from Cañada Chiquita.	therefore, no alternatives need to be addressed.	therefore, no alternatives need to be addressed.	therefore, no alternatives need to be addressed.	therefore, no alternatives need to be addressed.	
Impact to Groundwater	Impacts to groundwater are negligible.	Impacts to groundwater are negligible.	Impacts to groundwater are negligible.	Impacts to groundwater are negligible.	Impacts to groundwater are negligible.	Impacts to groundwater are negligible.	Impacts to groundwater are negligible.	Impacts to groundwater are negligible.	No impacts.
SUMMARY OF IMPACTS RELATED TO HAZARDOUS MATERIALS AND HAZARDOUS WASTE SITES									
Construction: impacts related to military sites (USTs, other releases).	Yes.	Yes.	No.	No.	Yes.	No.	No.	No.	No.
Construction: impacts related to past pesticide and herbicide use on agricultural land.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	No.
Construction: impacts related to existing USTs, LUST sites, auto service stations, dry cleaners.	No.	No.	Yes.	No.	No.	No.	No.	Yes.	No.
Construction: impacts related to existing utilities, waste water treatment facilities, electrical substations.	Yes.	Yes.	No.	No.	Yes.	No.	No.	Yes.	No.
Construction: impacts related to petroleum pipelines.	Yes.	Yes.	No.	No.	Yes.	Yes.	No.	No.	No.
Construction: impacts related to asbestos in existing bridge structures.	Potentially.	Potentially.	Potentially.	Potentially.	Potentially.	Potentially.	Potentially.	Potentially.	No.
Construction: impacts related to aerially deposited lead.	None known; potentially could occur.	None known; potentially could occur.	Possible.	None known; potentially could occur.	None known; potentially could occur.	None known; potentially could occur.	None known; potentially could occur.	Possible.	No.
Construction: potentially undocumented abandoned oil wells or test borings.	None known; potentially could occur.	None known; potentially could occur.	None known; potentially could occur.	None known; potentially could occur.	None known; potentially could occur.	None known; potentially could occur.	None known; potentially could occur.	No.	No.
Construction: impacts related to asbestos in existing buildings.	Potentially.	Potentially.	Potentially.	No	Potentially.	No.	No.	Potentially.	No.
Construction: potential for releases and use of hazardous materials.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	No.
Construction: impacts related to Prima Deshecha Landfill.	No.	No.	Yes.	Yes.	No.	Yes.	Yes.	No.	No.

Table ES.6-1 (continued)
Summary of Adverse Impacts before Mitigation

Impacts	FEC-M	FEC-W	CC	CC-ALPV	A7C-FEC-M/ Preferred	A7C-ALPV	AIO	I-5	No Action
Operations: impacts related to transport of hazards associated through areas not presently subject to this risk.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	No.	No.	No.
SUMMARY OF IMPACTS RELATED TO PUBLIC SERVICES AND UTILITIES									
Increased risk of wildfire.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No
Blocked access to fire road grid.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No
Reduced access for medical emergencies during construction.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No
Increased fire protection, law enforcement and emergency response times.	No	No	Yes	No	No	No	No	Yes	No
Need for non-federal law enforcement on corridor through MCB Camp Pendleton.	Yes	Yes	No	No	Yes	No	No	No	No
Reduced capacity and lifespan of the Prima Deshecha Landfill.	No	No	Yes	Yes	No	Yes	Yes	No	No
Blocked access in Prima Deshecha Sanitary Landfill.	No	No	During construction.	During construction.	No	During construction.	During construction and operations.	No	No
Generation of excess soil and rock material.	No	No	Initial: No Ultimate: Yes	No	No	No	No	Yes	No
Relocation of part of the existing Prima Deshecha Landfill operations facilities.	No	No	Yes	Yes	No	No	Yes	No	No
Temporary loss of use and permanent acquisition of public services facilities and utilities properties.	Parts of two electric substation properties.	Parts of two electric substation properties.	Parts of three school properties; one public service facility property; one water treatment access road.	One school property.	Part of one electric substation property.	One school property and part of one water treatment facility and access road. U only: part of one substation property.	Parts of one school property and one proposed school property; one water treatment access road and one substation property.	Parts of six school properties; three public services facilities properties; two electric substation properties and one sports field.	No
Short term potential damage or interruption of service during construction.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Relocation /addition of high voltage electrical towers and large utility poles.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No
Temporary use and permanent acquisition of	Yes	Yes	No	No	No	Yes	No	No	No

Table ES.6-1 (continued)
Summary of Adverse Impacts before Mitigation

Impacts	FEC-M	FEC-W	CC	CC-ALPV	A7C-FEC-M/ Preferred	A7C-ALPV	AIO	I-5	No Action
part of a percolation basin on MCB Camp Pendleton.									
Reduced capacity for emergency evacuation.	No	No	No	No	No	No	No	No	No
SUMMARY OF IMPACTS RELATED TO EARTH RESOURCES									
Impacts related to geologic and geotechnical conditions.	No.	No.	No.	No.	No.	No.	No.	No.	Not applicable.
Construction: temporary lowering of groundwater.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Not applicable.
Construction: increased disposal of waste material.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Not applicable.
Reduction in natural ground surface.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Not applicable.
Construction: estimated cut in 1000s of cubic meters (cubic yards)	I: -14,307 (-18,714) U: -16,732 (-21,885)	I: -12,771 (-16,704) U: -14,993 (-19,610)	I: -11,600 (-15,173) U: -19,400 (-25,375)	I: -6,700 (8,764) U: -10,500 (-13,734)	I: -12,149 (-15,891)[6] U: -14,192 (-18,563)	I: -33,300 (-43,556) U: -41,000 (-53,628)	-4, 800 (-6,278)	-6,600 (-8,633)	0
Construction: estimated fill in 1000s of cubic meters (cubic yards)	I: 11,008 (14,398) U: 13,712 (17,935)	I: 13,062 (17,085) U: 15,864 (20,750)	I: 8,900 (11,641) U: 14,600 (19,097)	I: 7,000 (9,156) U: 10,800 (14,126)	I: 13,530 (17,697)[7] U: 16,503 (21,586)	I: 33,800 (44,210) U: 42,700 (55,851)	3,700 (4,840)	2,300 (3,008)	0
Total net in 1000s of cubic meters (cubic yards)	I: -3,299 (-4,315) U: -3,019 (-3,949)	I: +292 (+382) U: +871 (+1,139)	I: -2,700 (-3,532) U: -4,800 (-6,278)	I & U:+300 (+392)	I: +1,380 (+1,805)[8] U: +2,310 (+3,021)	I: +500 (+654) U: +1,700 (+2,224)	-1,100 (1,439)	-4,300 (5,624)	0
SUMMARY OF IMPACTS RELATED TO PALEONTOLOGICAL RESOURCES									
Number of paleontologically sensitive formations impacted during construction.									
High sensitivity.	6	6	7	7	5	5	4	4	Not applicable.
Moderate sensitivity.	0	1	0	0	0	0	0	0	Not applicable.
Low sensitivity.	0	0	1	1	0	1	1	0	Not applicable.
Low to no sensitivity.	1	1	1	1	1	1	1	1	Not applicable.
Indeterminate sensitivity.	1	1	1	1	1	1	1	1	Not applicable.
Operations:	Indirect impacts associated with the provision of access to currently inaccessible areas.	Indirect impacts associated with the provision of access to currently inaccessible areas.	Indirect impacts associated with the provision of access to currently inaccessible areas.	Indirect impacts associated with the provision of access to currently inaccessible areas.	Indirect impacts associated with the provision of access to currently inaccessible areas.	Indirect impacts associated with the provision of access to currently inaccessible areas.	Indirect impacts associated with the provision of access to currently inaccessible areas.	Indirect impacts associated with the provision of access to currently inaccessible areas.	Not applicable.
Beneficial effects: availability of new information.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	No.
SUMMARY OF IMPACTS RELATED TO HISTORIC AND ARCHEOLOGICAL RESOURCES[2]									
Total recorded archeological resources potentially impacted.	20	21	19	15	19	13 (I) 14 (U)	13	18	0
Total recorded historic resources potentially impacted.	0	0	8	0	0	0	0	12	0
Use of Parts of Section 4(f) Resources	Yes; one existing State Park, one proposed regional park, two proposed trails, one NRHP eligible resource	Yes; one existing State Park, one proposed regional park, two proposed trails, one NRHP eligible resource	Yes; one existing Open Space, two existing school sports fields, two existing State Beaches, one proposed regional park,	Yes; one existing Open Space, one proposed regional park, three proposed trails and four potentially NRHP	Yes; one existing State Park, one proposed regional park, two proposed trails, one NRHP eligible resource	Yes; one proposed regional park, two proposed trails and four potentially NRHP eligible archeological	Yes; one existing school sports field, one existing Open Space, one proposed regional park, two proposed	Yes; four existing school sports fields, three existing parks, one existing public golf course, two existing	No.

Table ES.6-1 (continued)
Summary of Adverse Impacts before Mitigation

Impacts	FEC-M	FEC-W	CC	CC-ALPV	A7C-FEC-M/ Preferred	A7C-ALPV	AIO	I-5	No Action
	and four potentially NRHP eligible archeological resources.	and four potentially NRHP eligible archeological resources.	three proposed trails, one NRHP listed historic resource and four potentially NRHP eligible archeological resources.	eligible archeological resources.	and four potentially NRHP eligible archeological resources.	resources.	trails, one proposed school sports field and three potentially NRHP eligible archeological sites.	State Parks, five proposed parks, one proposed trail, one NRHP listed historic resource, seven NRHP eligible historic resources and one potentially NRHP eligible archeological site.	
SUMMARY OF IMPACTS RELATED TO FARMLAND									
Total hectares (acres) of farmland permanently used for the Alternative.	I: 23 (56) U: 25 (60))	I: 34 (83) U: 34 (85)	I: 18 (45) U: 22 (55)	I: 18 (45) U: 22 (55)	I: 3 (7) U: 3 (7)	I: 3 (8) U: 4 (9)	I: 7 (16) U: 9 (22)	I: 0 (0) U: 0 (0)	0 (0)
Total hectares (acres) of agricultural preserves used for the Alternative.	I: 124 (307)) U: 134 (332))	I: 111 (275) U: 114 (281)	I: 87 (214) U: 112 (276)	I: 87 (214) U: 112 (276)	I: 90 (224)[10] U: 94 (231)	I: 168 (415) U: 178 (441)	15 (37)	1 (<1)	0 (0)
Other impacts to agricultural resources.	Impacts existing access and operations and Camp Pendleton.	Impacts existing access and operations and Camp Pendleton.	None.	None.	Impacts existing access operations on RMV and Camp Pendleton.	None.	None.	None.	None.
SUMMARY OF IMPACTS RELATED TO PEDESTRIAN AND BICYCLE FACILITIES									
Construction: number of temporary trail and bikeway closures.	One proposed trail and two bikeways.	Two proposed trails and three bikeways.	Two proposed trails and 15 bikeways.	Two proposed trails and five bikeways.	Two proposed trails and three bikeways.[11]	Two proposed trails and five bikeways.	Two proposed trails and eight bikeways.	Three existing and two proposed trails and 41 bikeways.	None.
Construction: temporary sidewalk closures.	Yes; multiple.	Yes; multiple.	Yes; multiple.	Yes; multiple.	Yes; multiple.	Yes; multiple.	Yes; multiple.	Yes; multiple.	None.
Construction: air quality impacts.	One proposed trail and two proposed bikeways.	Two proposed trails and three proposed bikeways.	Two proposed trails, 11 proposed bikeways and four existing bikeways.	Two proposed trails, four proposed bikeways and one existing bikeway.	Two proposed trails and three proposed bikeways.	Two proposed trails, four proposed bikeways and one existing bikeway.	Two proposed trails and one existing trail.	Three existing trails and one proposed trail.	None.
Permanent acquisition of part of a trail.	One proposed trail.	Two proposed trails.	Two proposed trails.	Two proposed trails.	Two proposed trails.[11]	Two proposed trails.	Two proposed trails.	Three existing trails and two proposed trails.	None.
Operations: permanent visual impacts on trails.	One proposed trail.	Two proposed trails.	Two proposed trails.	Two proposed trails.	Two proposed trails.	Two proposed trails.	None.	None.	None.
SUMMARY OF IMPACTS RELATED TO WILD AND SCENIC RIVERS									
Affects on wild and scenic rivers.	None.	None.	None.	None.	None.	None.	None.	None.	None.
SUMMARY OF IMPACTS RELATED TO COASTAL BARRIERS									
Affects on coastal barriers.	None.	None.	None.	None.	None.	None.	None.	None.	None.
SUMMARY OF IMPACTS RELATED TO THE COASTAL ZONE									
Project lies in Coastal Zone requiring a coastal development permit and a federal consistency finding.	Yes.	Yes.	Yes.	No. Not in Coastal Zone therefore CDP is not required. Coastal Consistency certification may be required.	Yes.	No. Not in Coastal Zone therefore CDP is not required. Coastal Consistency certification may be required.	No. Not in Coastal Zone therefore CDP is not required. Coastal Consistency certification may be required.	Yes.	No. Not in Coastal Zone therefore CDP is not required. Coastal Consistency certification may be required.

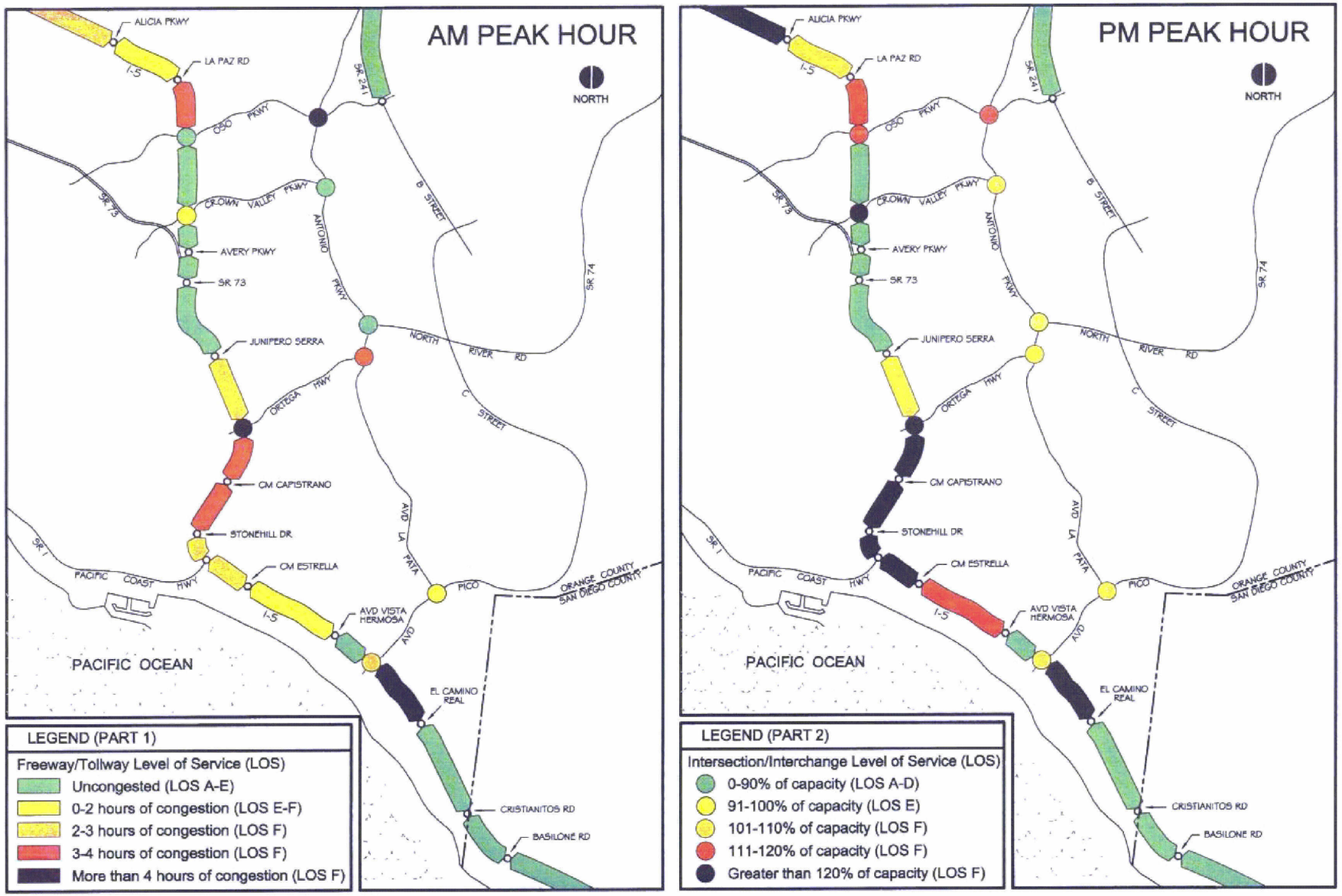
Table ES.6-1 (continued)
Summary of Adverse Impacts before Mitigation

Impacts	FEC-M	FEC-W	CC	CC-ALPV	A7C-FEC-M/ Preferred	A7C-ALPV	AIO	I-5	No Action
SUMMARY OF IMPACTS RELATED TO ENERGY									
Construction: substantial short term increase in demand for energy.	No.	No.	No.	No.	No.	No.	No.	No.	Not applicable.
Operations: substantial change in energy demand [4].	No.	No.	No.	No.	No.	No.	No.	No.	Not applicable.
SUMMARY OF IMPACTS RELATED TO MINERAL RESOURCES									
Reduction in availability of or ability to extract mineral resources.	Yes, slight reduction in area where resources can be obtained.	Yes, slight reduction in area where resources can be obtained.	Yes, slight reduction in area where resources can be obtained.	Yes, slight reduction in area where resources can be obtained.	No impact to nearby quarry operations.	Yes, slight reduction in area where resources can be obtained.	No.	No.	No.

[1] Compared to the No Action Alternatives.
[2] Refer also to Tables ES.6-9 to ES.6-13.
[3] Refer also to Table ES.7-14.
[4] Compared to the No Action Alternatives.
[5] See Section 4.6 for more information regarding the potential for the SOCTIIP build Alternatives to affect new residential units in the Talega community.
[6] The estimated cut in 1,000s of cubic meters (cubic yards) for the Preferred Alternative is 17,000.
[7] The estimated fill in 1,000s of cubic meters (cubic yards) for the Preferred Alternative is 14,700.
[8] The total net in 1,000s of cubic meters (cubic yards) for the Preferred Alternative is 2,300.
[9] See Section 4.16 of this Final EIS/SEIR for updated information for the Preferred Alternative.
[10] See Section 4.3 of the Final EIS/SEIR for more information regarding Farmlands impacts of the Preferred Alternative. All of the existing Williamson Act contractor have been noticed by RMV for non-renewal.
[11] In addition, there are five trails and two dirt roads in The Donna O'Neill Land Conservancy that could be adversely affected by the Preferred Alternative. See Section 4.5 for more information.

I: Initial.
U: Ultimate.
NA: Not applicable.
LOS: Level, levels of service.
RMV: Rancho Mission Viejo.
SOSB: San Onofre State Beach.
SCAQMD: South Coast Air Quality Management District.
WoUS Waters of the United States
SWMP Storm Water Management Plan.
SWPPP Storm Water Pollution Prevention Plan
PDFS Project Design Features
CO: Carbon Monoxide
NO_x: Nitrogen oxides.
HC: Hydrocarbons.
PM_{10}: Particulate matters.

Note: The Preferred Alternative is the A7C-FEC-M-Initial Alternative with design refinements.



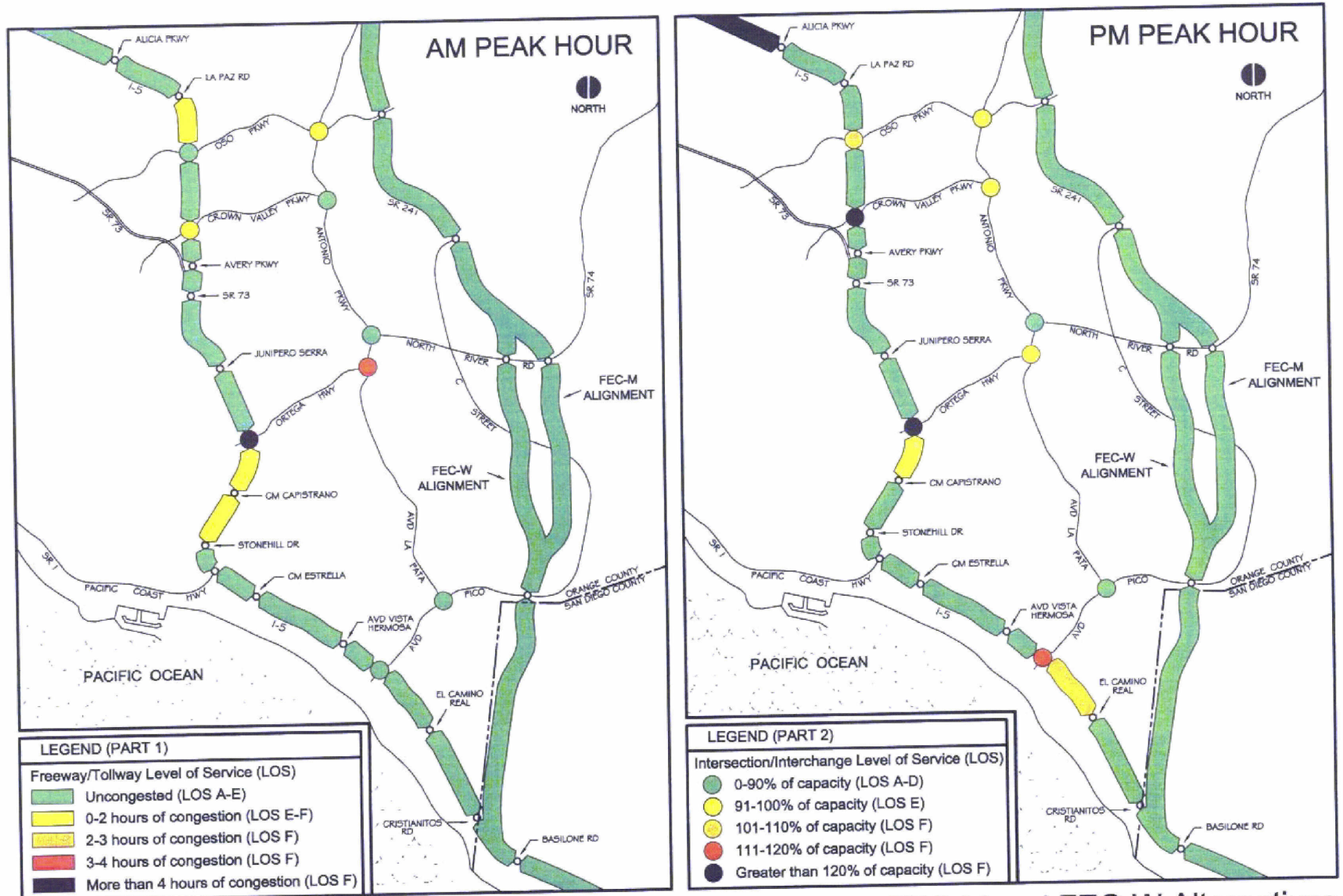
2025 Weekday Peak Hour Traffic Conditions - No Action Alternative
(Buildout Circulation System with Proposed RMV Plan)

Source: Austin-Foust Associates, Inc. (2003)

SOCTIIP EIS/SEIR

Figure ES.6-1

176010Section3.0Fig3.4-5.dwg
November 25, 2003



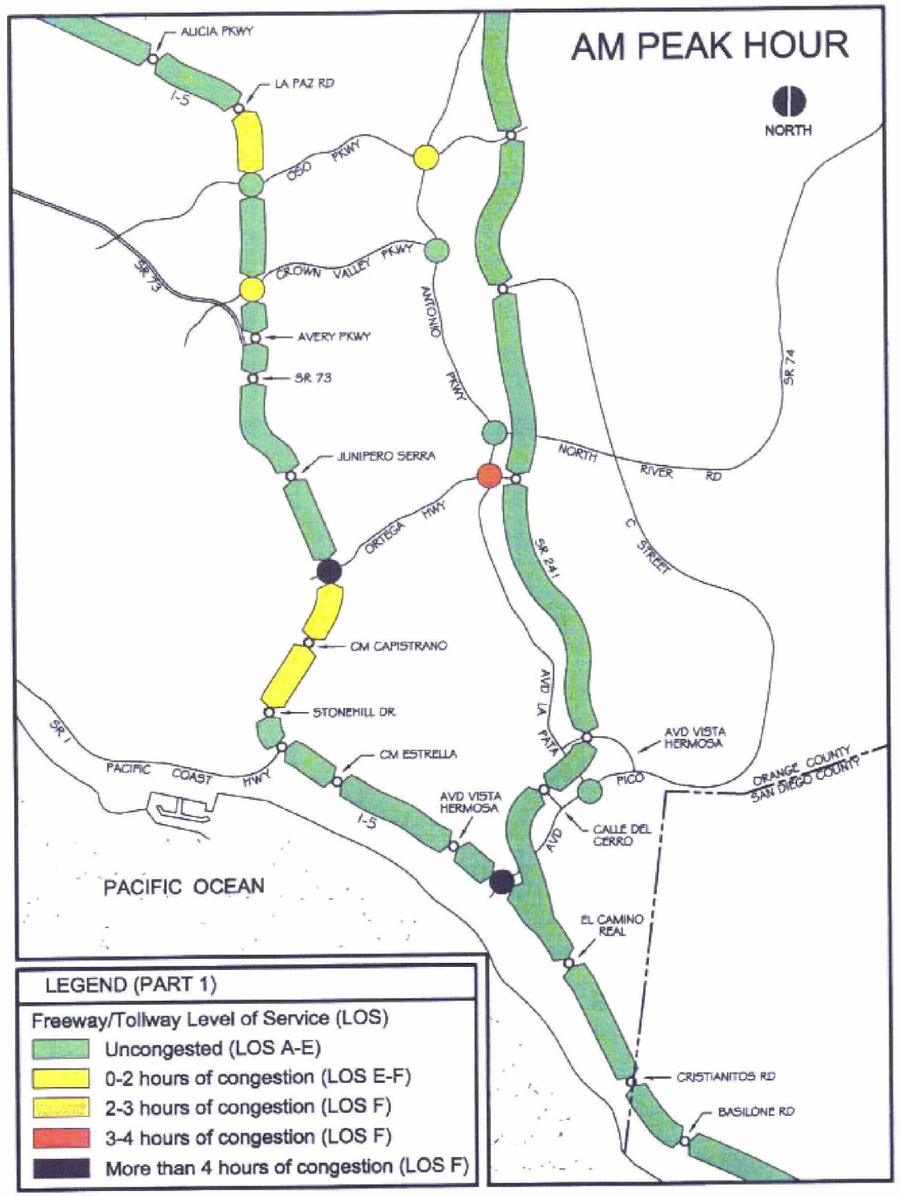
2025 Weekday Peak Hour Traffic Conditions - FEC-M and FEC-W Alternatives
(Buildout Circulation System with Proposed RMV Plan)

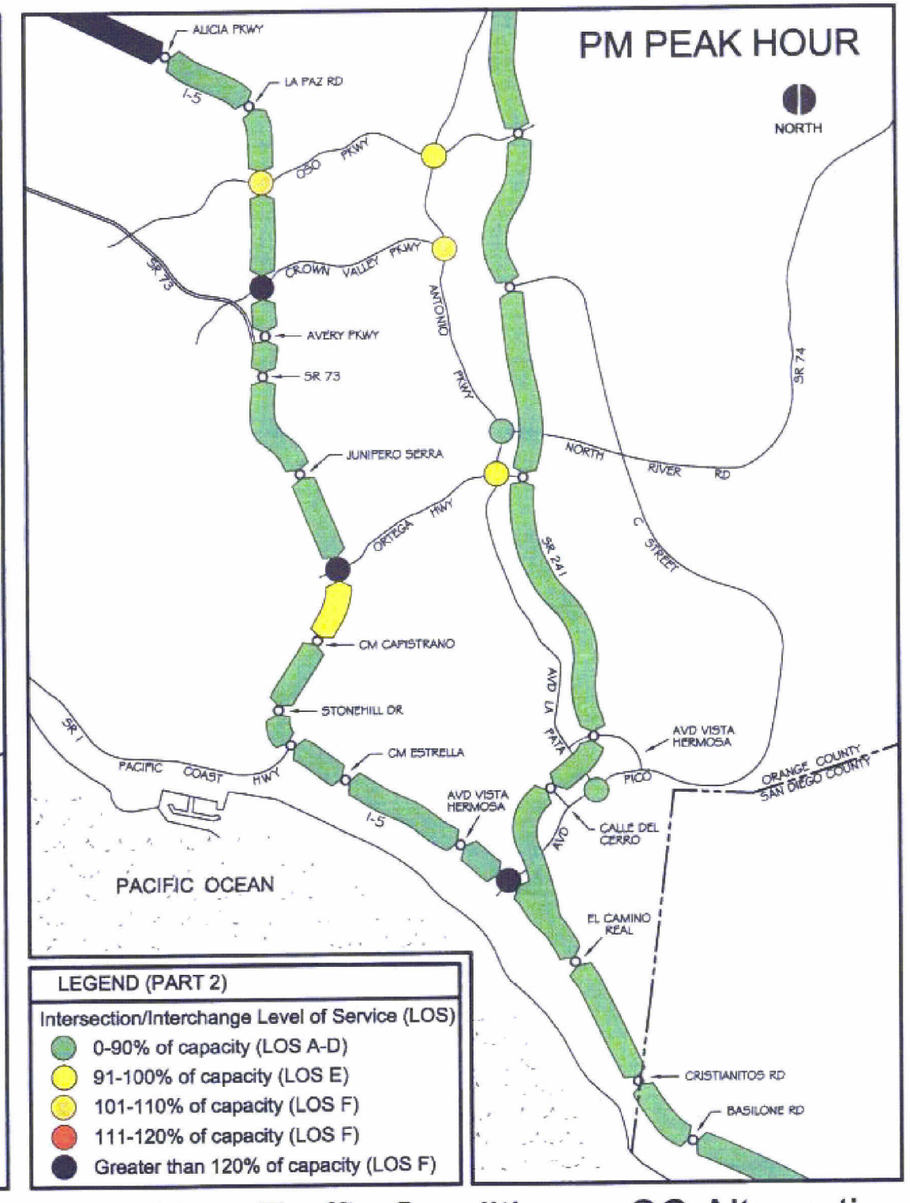
Source: Austin-Foust Associates, Inc. (2003)

Figure ES.6-2

SOCTIIP EIS/SEIR

176010Section3.0Fig3.4-6.dwg
November 25, 2003





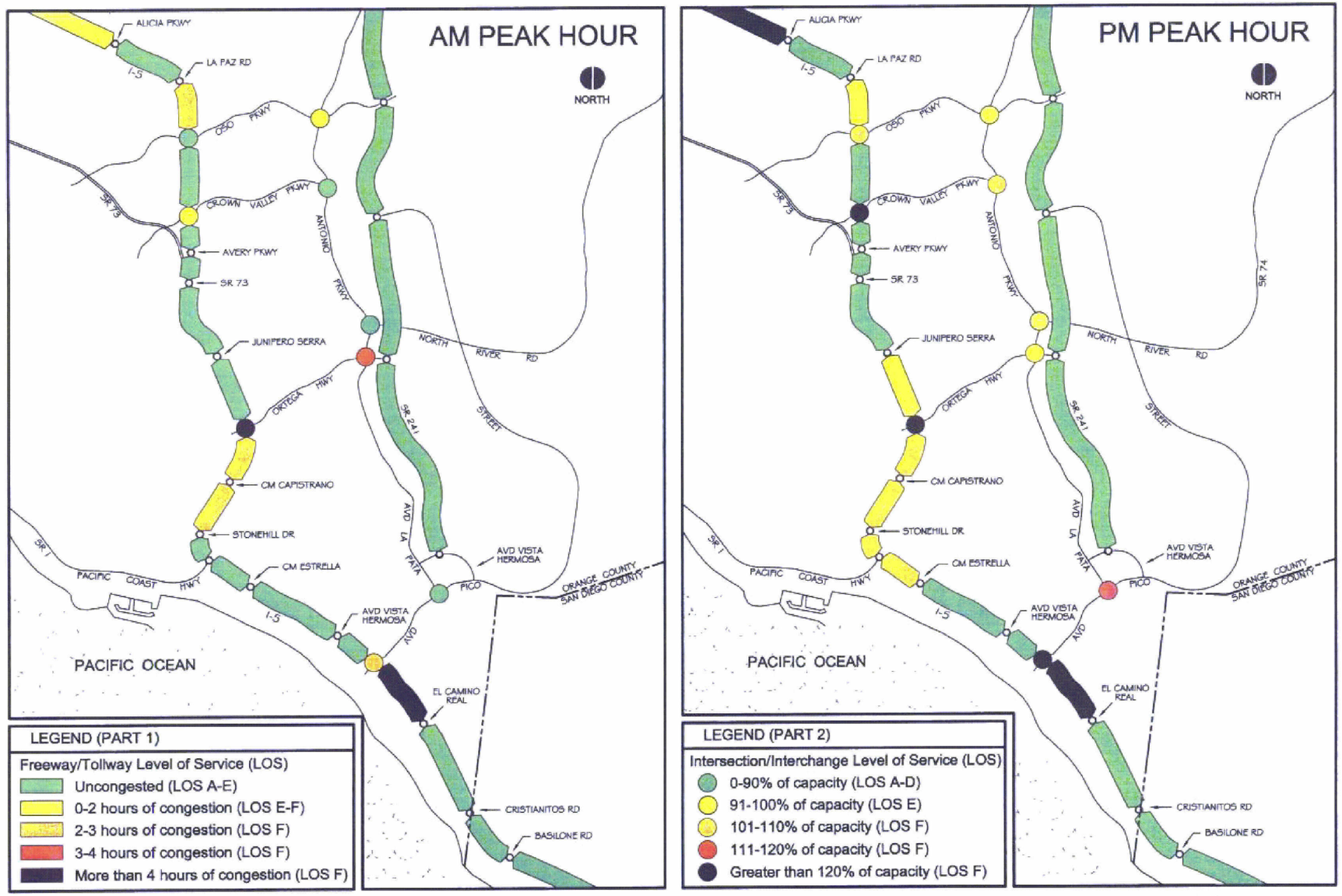
2025 Weekday Peak Hour Traffic Conditions - CC Alternative (Buildout Circulation System with Proposed RMV Plan)

Source: Austin-Foust Associates, Inc. (2003)

SOCTIIP EIS/SEIR

Figure ES.6-3

176010Section3.0Fig3.4-7.dwg
November 25, 2003



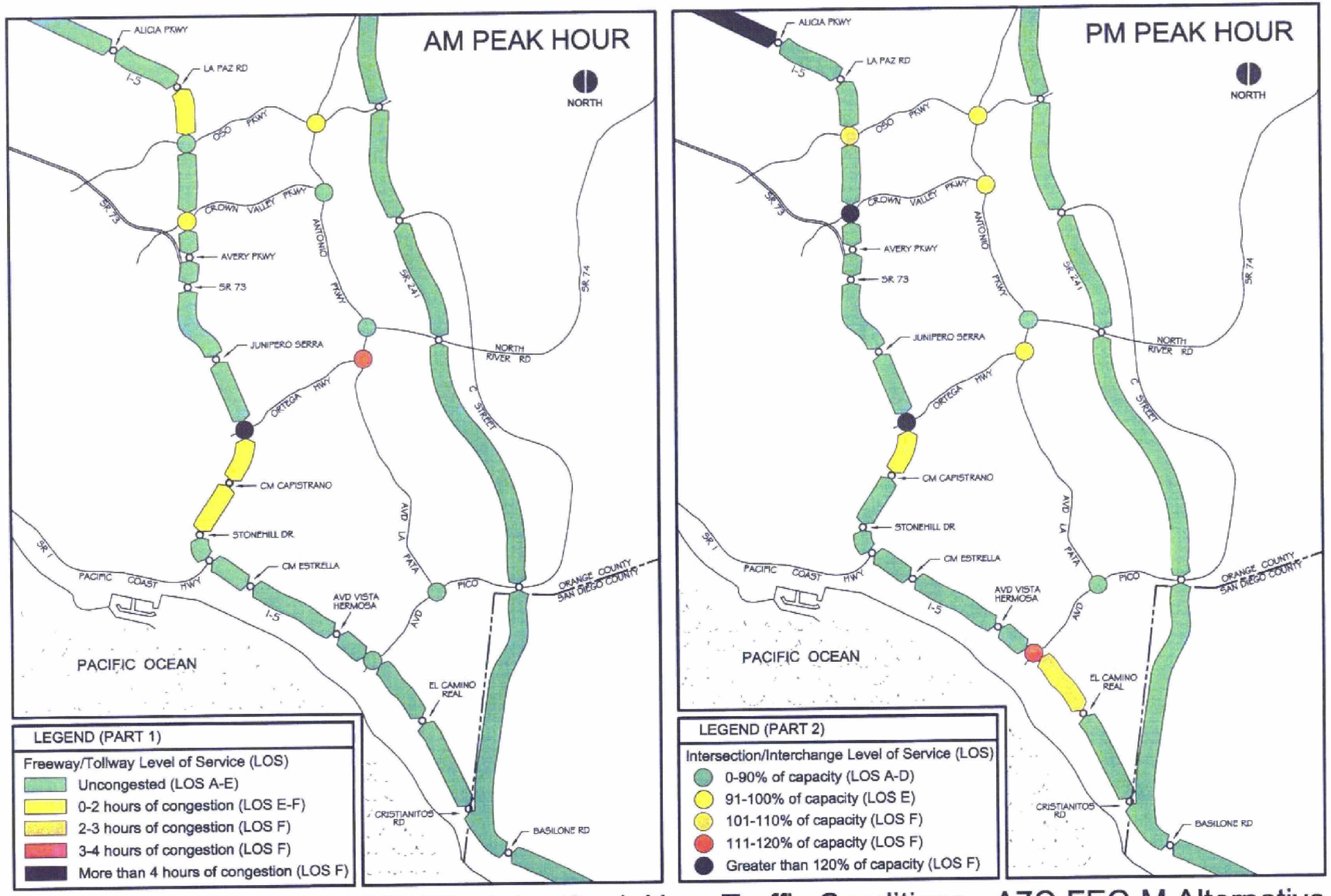
2025 Weekday Peak Hour Traffic Conditions - CC-ALPV Alternative (Buildout Circulation System with Proposed RMV Plan)

Source: Austin-Foust Associates, Inc. (2003)

SOCTIIP EIS/SEIR

Figure ES.6-4

176010Section3.0Fig3.4-8.dwg
November 25, 2003



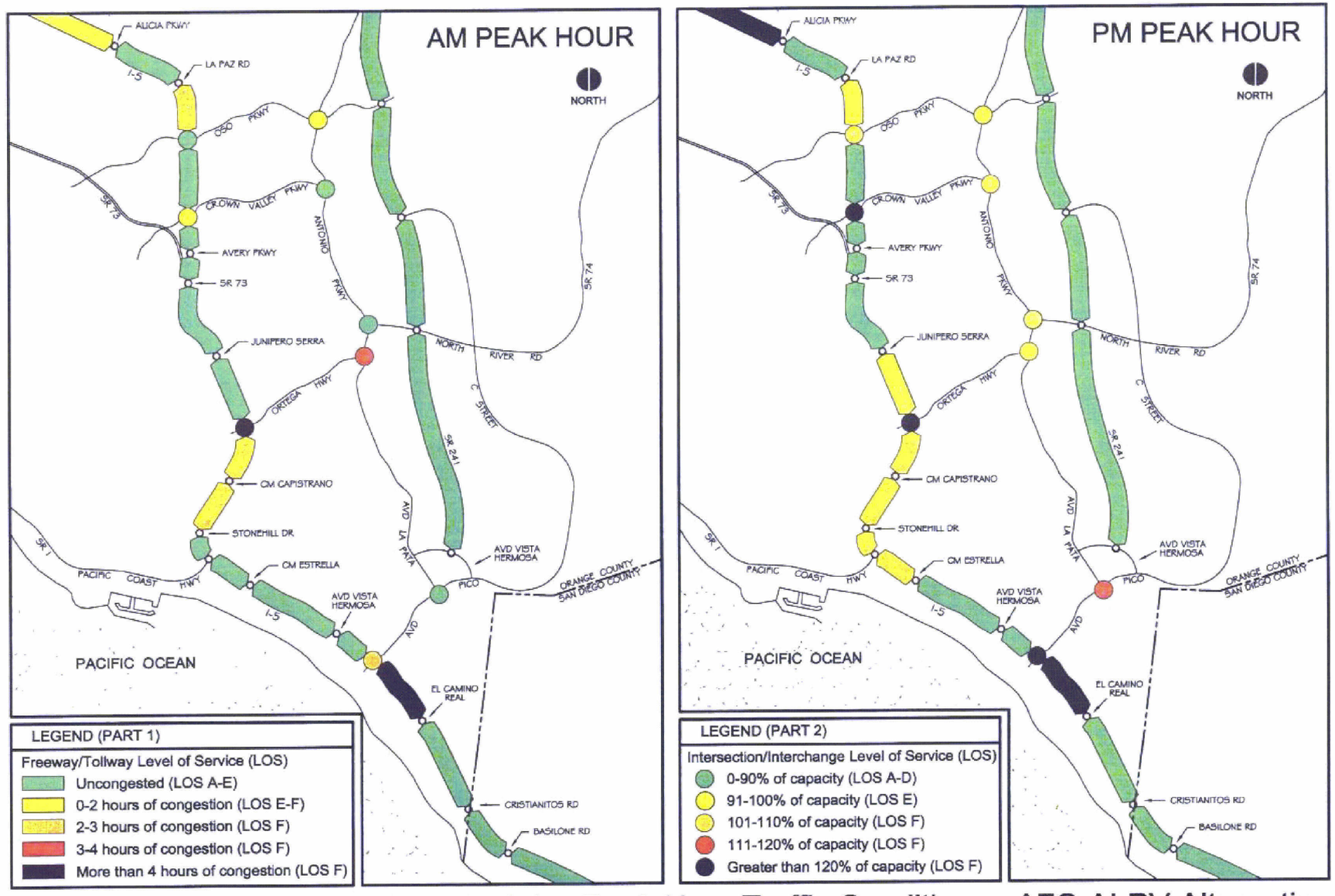
2025 Weekday Peak Hour Traffic Conditions - A7C-FEC-M Alternative
(Buildout Circulation System with Proposed RMV Plan)

Source: Austin-Foust Associates, Inc. (2003)

SOCTIIP EIS/SEIR

Figure ES.6-5

176010Section3.0Fig3.4-9.dwg
November 25, 2003



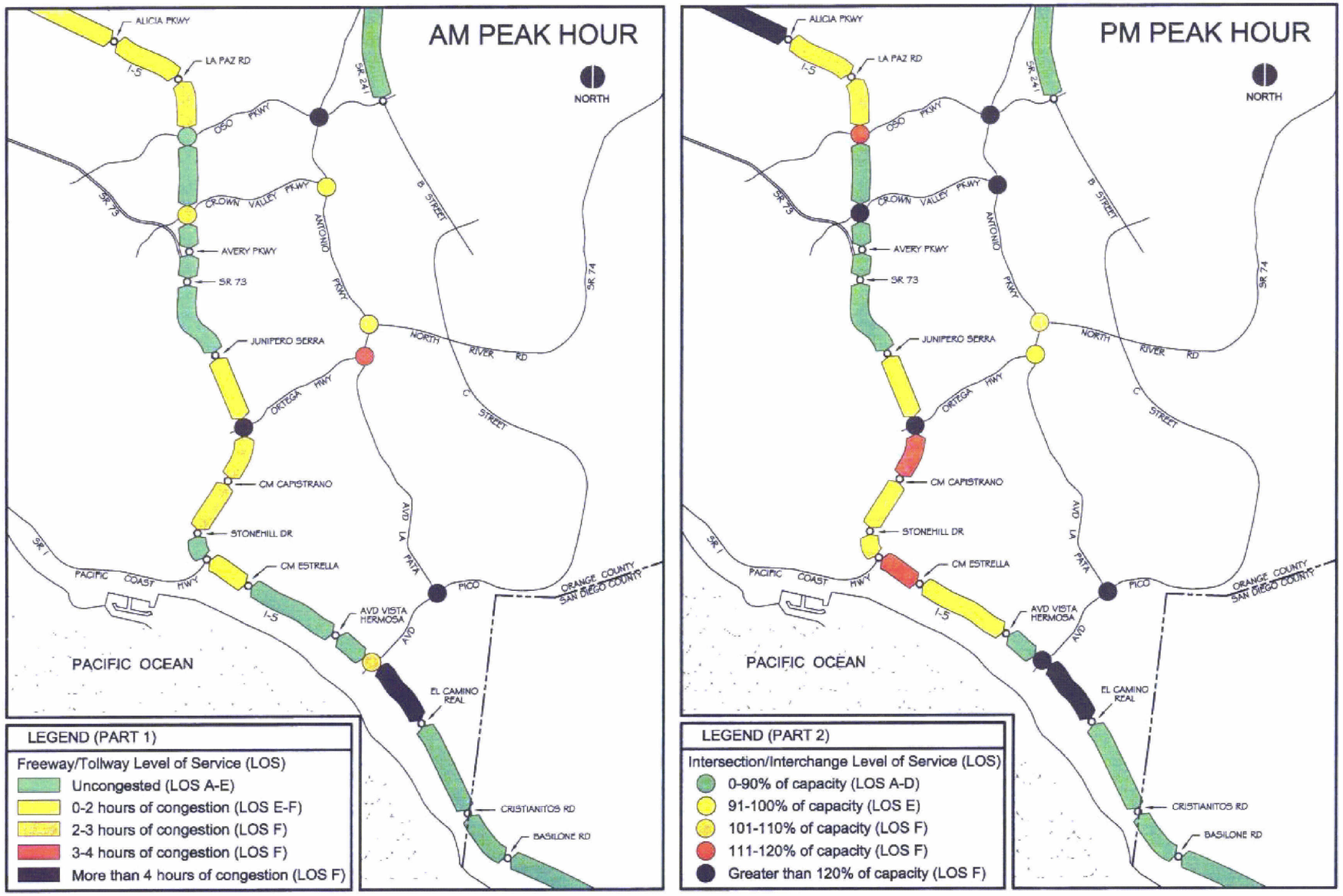
2025 Weekday Peak Hour Traffic Conditions - A7C-ALPV Alternative
(Buildout Circulation System with Proposed RMV Plan)

Source: Austin-Foust Associates, Inc. (2003)

SOCTIIP EIS/SEIR

Figure ES.6-6

176010Section3.0Fig3.4-10.dwg
November 25, 2003



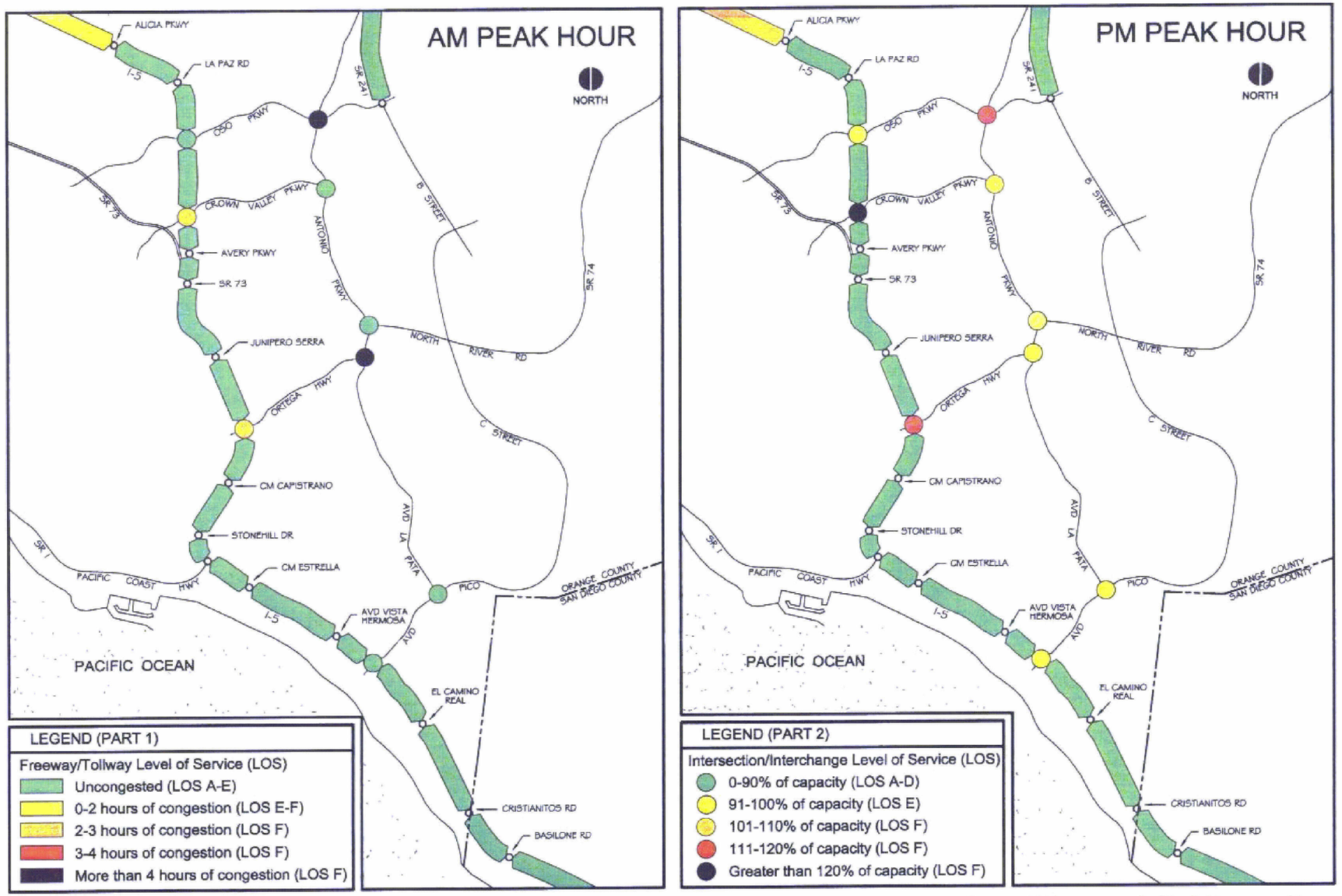
2025 Weekday Peak Hour Traffic Conditions - AIO Alternative (Buildout Circulation System with Proposed RMV Plan)

Source: Austin-Foust Associates, Inc. (2003)

SOCTIIP EIS/SEIR

Figure ES.6-7

176010Section3.0Fig3.4-11.dwg
November 25, 2003



2025 Weekday Peak Hour Traffic Conditions - I-5 Alternative
(Buildout Circulation System with Proposed RMV Plan)

Source: Austin-Foust Associates, Inc. (2003)

SOCTIIP EIS/SEIR

Figure ES.6-8

176010Section3.0Fig3.4-12.dwg
November 25, 2003

Table ES.6-2
Summary of the Beneficial Effects of the SOCTIIP Build Alternatives for Operations

Locations Where Beneficial Effects Occur Compared to the No Action Alternative	Jurisdiction	*Analysis Scenarios[a] in which Beneficial Effects Occur Under the Build Alternatives*					
		FEC-M & FEC-W	CC	A7C-FEC-M/ Preferred	CC-ALPV & A7C-ALPV	AIO	I-5
INTERSECTIONS							
Antonio Parkway & North River Road	County	3	3	3	None	None	None
Avenida Empresa & Avenida de Las Banderas	Rancho Santa Margarita	1,3	1,3	1,3	1,3	None	3,4
Avenida La Pata & Avenida Pico	San Clemente	3,4	3,4	3,4	None	None	None
Avenida La Pata & Avenida Vista Hermosa	San Clemente	1,3,4	1,3,4	1,3,4	None	None	None
Avenida La Pata & Camino del Rio	San Clemente	3,4	3,4	3,4	3	None	3,4
Cabot Road & Crown Valley Parkway	Laguna Niguel	3	3	None	None	3	3,4
Camino Capistrano & I-5 southbound ramps	Caltrans/San Juan Capistrano	4	4	4	None	4	4
Camino Capistrano & Junipero Serra Road	San Juan Capistrano	1,3,4	1,3,4	3,4	3	3,4	1,3,4
Camino Vera Cruz & Avenida Vista Hermosa	San Clemente	None	1	None	None	None	None
I-5 northbound ramps & Avenida Pico	Caltrans/San Clemente	1,3,4	None	1,3,4	None	None	1,3,4
I-5 southbound ramps & Avenida Pico	Caltrans/San Clemente	3	None	3	None	None	1,3,4
I-5 southbound ramps & Avery Parkway	Caltrans/Mission Viejo	None	None	None	None	None	1
I-5 northbound ramps & Avery Parkway	Caltrans/Mission Viejo	None	None	None	None	None	1
I-5 southbound ramps & Crown Valley Parkway	Caltrans/Mission Viejo	None	None	None	None	None	4
I-5 southbound ramps & Camino Estrella	Caltrans/San Clemente/Dana Point	1	1	1	1	None	None
I-5 southbound ramps & Ortega Highway	Caltrans/San Juan Capistrano	None	None	None	None	None	1
I-5 northbound ramps & Ortega Highway	Caltrans/San Juan Capistrano	None	None	None	None	None	1
I-5 northbound ramps & Oso Parkway	Caltrans/Mission Viejo	4	4	4	None	None	4
La Novia Avenue & Ortega Highway	San Juan Capistrano	1	1	1	None	None	None
La Pata Avenue & San Juan Creek Road	County	3	3,4	3	3	3,4	3
Marguerite Parkway & Avery Parkway	Mission Viejo	1	1	1	1	None	1
Marguerite Parkway & Jeronimo Road	Mission Viejo	1	1	1	1	None	1
Marguerite Parkway & La Paz Road	Mission Viejo	1,3	1	1,3	1,3	None	1,3
Pacific Coast Highway & Camino Capistrano	San Clemente/Dana Point	1	1	1	1	None	1
SR 241 northbound ramps & Oso Parkway	Caltrans/Rancho Santa Margarita	1,3,4	1,3,4	1,3,4	1,3	None	None
SR 241 southbound ramps & Oso Parkway	Caltrans/Rancho Santa Margarita	1,3	1,3	1,3	1,3	None	None
Valle Road & La Novia Avenue/I-5 northbound ramps	Caltrans/San Juan Capistrano	1,3	1,3	1,3	1,3	3	3
FREEWAY (I-5) MAINLINE SEGMENTS							
I-5 (Alicia Parkway to La Paz Road)	Caltrans/Laguna Hills/Mission Viejo	1,3,4	1,3,4	1,3,4	1,3	None	1,3,4
I-5 (Avenida Pico to El Camino Real)	Caltrans/San Clemente	None	None	None	None	None	1,3,4
I-5 (Avenida Vista Hermosa to Avenida Pico)	Caltrans/San Clemente	1	1	1	None	None	1
I-5 (Camino Capistrano to Stonehill Drive)	Caltrans/San Juan Capistrano	None	None	None	None	None	1,3,4
I-5 (Camino Estrella to Avenida Vista Hermosa)	Caltrans/San Clemente	3,4	3,4	3,4	3	None	1,3,4
I-5 (Junipero Serra Road to Ortega Highway)	Caltrans/San Juan Capistrano	1,3,4	1,3,4	1,3,4	1,3	None	1,3,4
I-5 (La Paz Road to Oso Parkway)	Caltrans/Mission Viejo	None	None	None	None	None	1,3,4
I-5 (Ortega Highway to Camino Capistrano)	Caltrans/San Juan Capistrano	None	None	None	None	None	1,3,4
I-5 (SR 1/Camino Las Ramblas to Camino Estrella)	Caltrans/Dana Point	3,4	3,4	3,4	None	None	1,3,4
I-5 (Stonehill Drive to SR 1/Camino Las Ramblas)	Caltrans/San Juan Capistrano	1,3,4	1,3,4	1,3,4	None	None	1,3,4
FREEWAY/TOLLWAY RAMPS							
I-5 northbound direct on-ramp at Alicia Parkway	Caltrans/Mission Viejo	None	None	None	None	None	None
I-5 northbound on-ramp at Avenida Pico	Caltrans/San Clemente	None	None	None	None	4	3,4
I-5 southbound on-ramp at Avenida Pico	Caltrans/San Clemente	1	1	1	None	None	1

Table ES.6-2 (continued)
Summary of the Beneficial Effects of the SOCTIIP Build Alternatives for Operations

Locations where Beneficial Effects Occur Compared to the No Action Alternative	Jurisdiction	*Analysis Scenarios[a] in which Beneficial Effects Occur Under the Build Alternatives*					
		FEC-M & FEC-W	CC	A7C-FEC-M/ Preferred	CC-ALPV & A7C-ALPV	AIO	I-5
FREEWAY/TOLLWAY RAMPS (cont)							
I-5 northbound direct on-ramp at Avd Vista Hermosa	Caltrans/San Clemente	1	1	1	1	None	None
I-5 southbound off-ramp at Camino Estrella	Caltrans/San Clemente/Dana Point	1	1	1	1	None	1
I-5 northbound on-ramp at Junipero Serra Road	Caltrans/San Juan Capistrano	None	None	None	None	None	1,3,4
I-5 northbound on-ramp at Ortega Highway	Caltrans/San Juan Capistrano	None	None	None	None	None	1
I-5 southbound off-ramp at Ortega Highway	Caltrans/San Juan Capistrano	None	None	None	None	None	1
I-5 southbound off-ramp at Oso Parkway	Caltrans/Mission Viejo	None	None	None	None	None	1,3
I-5 southbound direct on-ramp at SR-1/Cm Las Ramblas	Caltrans/Dana Point	None	None	None	None	None	1,3,4
SR 241 southbound off-ramp at Antonio Parkway	Caltrans/Rancho Santa Margarita	4	4	4	None	None	None
SR 241 northbound on-ramp at Oso Parkway	Caltrans/Rancho Santa Margarita	1,3,4	1,3,4	1,3,4	1,3	None	1,3
SR 241 southbound off-ramp at Oso Parkway	Caltrans/Rancho Santa Margarita	4	1,3	1,3	None	None	None

Source: Austin-Foust Associates, Inc. (2003).
[a] The assumptions for each scenario are as follows:
Scenario 1: Committed circulation system with 14,000 du proposed RMV plan.
Scenario 3: Build out circulation system with 14,000 du proposed RMV plan.
Scenario 4: Build out circulation system with 21,000 du OCP-2000 plan for RMV.
Note: The Preferred Alternative is A7C-FEC-M-Initial with refinements.

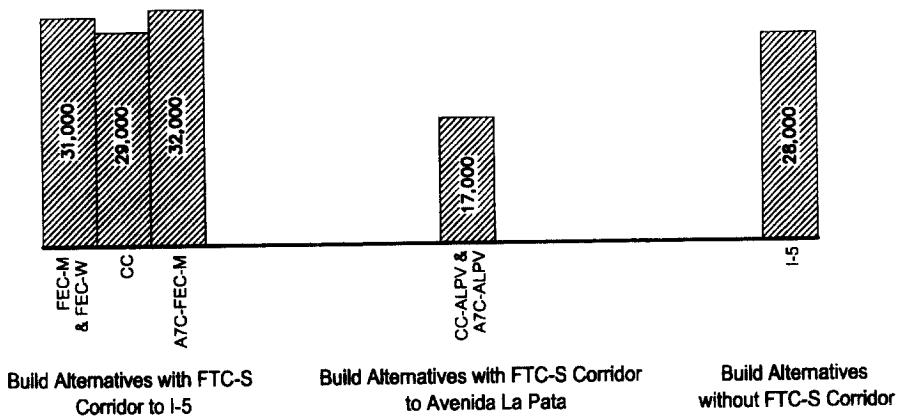
Table ES.6-3
Summary of Build Alternative Systemwide Travel Time Savings

Alternatives and Scenarios[a]	Total Hours of Vehicle Travel Time Savings Per Day[b]
***2025 SCENARIO 1**	
Build Alternatives with FTC-S Toll Road from Oso Parkway to I-5	
FEC-M and FEC-W Alternatives	31,000
CC Alternative	29,000
A7C-FEC-M Alternative	32,000
Build Alternatives with FTC-S Toll Road from Oso Parkway to Avenida La Pata	
CC-ALPV and A7C-ALPV Alternatives	17,000
Build Alternatives without the FTC-S Toll Road	
I-5 Alternative	28,000
2025 SCENARIO 3	
Build Alternatives with FTC-S Toll Road from Oso Parkway to I-5	
FEC-M and FEC-W Alternatives	20,000
CC Alternative	18,000
A7C-FEC-M Alternative	21,000
Build Alternatives with FTC-S Toll Road from Oso Parkway to Avenida La Pata	
CC-ALPV and A7C-ALPV Alternative	8,000
Build Alternatives without the FTC-S Toll Road	
AIO Alternative	5,000
I-5 Alternative	20,000
2025 SCENARIO 4	
Build Alternatives with FTC-S Toll Road from Oso Parkway to I-5	
FEC-M and FEC-W Alternatives	34,000
CC Alternative	26,000
A7C-FEC-M Alternative	25,000
Build Alternatives without the FTC-S Toll Road	
AIO Alternative	8,000
I-5 Alternative	22,000

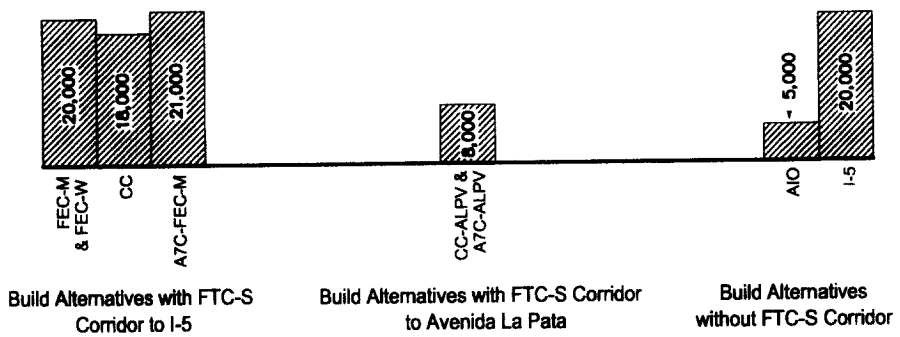
Source: Austin-Foust Associates (2003).

[a] The assumptions for each scenario are as follows:
Scenario 1: Committed circulation system with 14,000 du proposed RMV plan.
Scenario 3: Build out circulation system with 14,000 du proposed RMV plan.
Scenario 4: Build out circulation system with 21,000 du OCP-2000 plan for RMV.

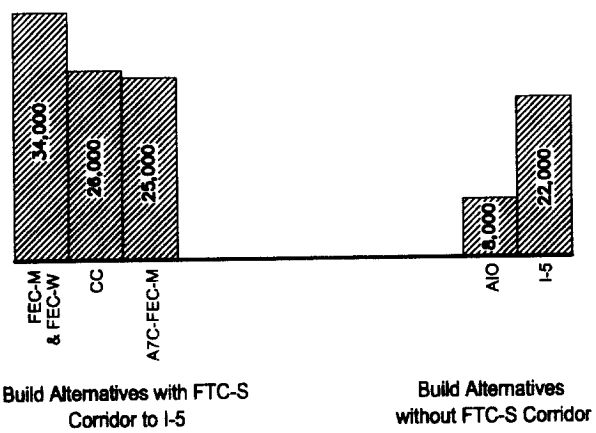
[b] Compared to the No Action Alternative



2025 Scenario 1



2025 Scenario 3



2025 Scenario 4

LEGEND

X,XXX = Systemwide total hours of vehicle travel time savings per day compared to the No Action Alternative

Scenario 1: Committed circulation system with 14,000 du proposed RMV plan.
Scenario 3: Buildout circulation system with 14,000 du proposed RMV plan.
Scenario 4: Buildout circulation system with 21,000 du OCP-2000 plan for RMV.

Summary of Build Alternative Systemwide Travel Time Savings

Source: Austin-Foust Associates, Inc. (2003)

SOCTIIP EIS/SEIR

Figure ES.6-9

176010Section3.0Fig3.4-13.dwg
November 25, 2003

Table ES.6-4
Summary of I-5 Congestion in the SOCTIIP Study Area

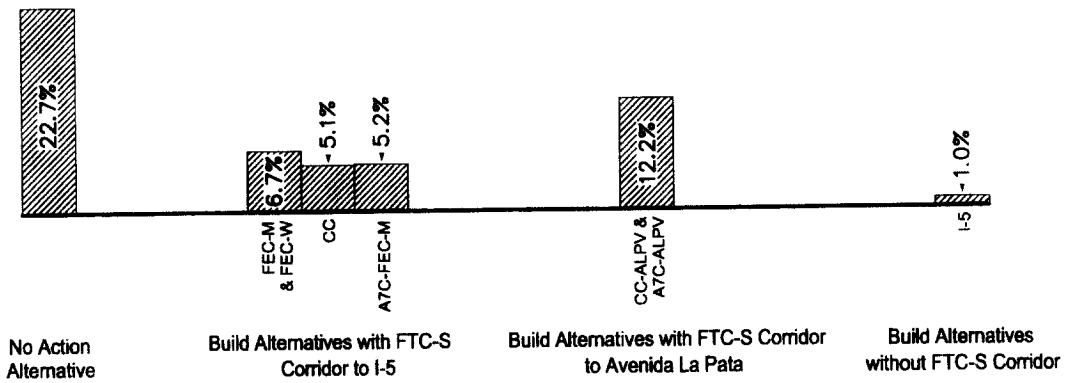
Alternatives and Scenarios[a]	Congested Percentage of Daily Traffic on I-5[b]
2025 SCENARIO 1	
No Action Alternative	22.7%
Build Alternatives with FTC-S Toll Road from Oso Parkway to I-5	
FEC-M and FEC-W Alternatives	6.7%
CC Alternative	5.1%
A7C-FEC-M Alternative	5.2%
Build Alternatives with FTC-S Toll Road from Oso Parkway to Avenida La Pata	
CC-ALPV and A7C-ALPV Alternatives	12.2%
Build Alternatives without the FTC-S Toll Road	
I-5 Alternative	1.0%
2025 SCENARIO 2	
No Action Alternative	28.6%
2025 SCENARIO 3	
No Action Alternative	15.9%
Build Alternatives with FTC-S Toll Road from Oso Parkway to I-5	
FEC-M and FEC-W Alternatives	3.4%
CC Alternative	2.4%
A7C-FEC-M Alternative	3.2%
Build Alternatives with FTC-S Toll Road from Oso Parkway to Avenida La Pata	
CC-ALPV and A7C-ALPV Alternatives	7.8%
Build Alternatives without the FTC-S Toll Road	
AIO Alternative	11.3%
I-5 Alternative	1.0%
2025 SCENARIO 4	
No Action Alternative	19.2%
Build Alternatives with FTC-S Toll Road from Oso Parkway to I-5	
FEC-M and FEC-W Alternatives	4.3%
CC Alternative	3.2%
A7C-FEC-M Alternative	4.0%
Build Alternatives without the FTC-S Toll Road	
AIO Alternative	13.3%
I-5 Alternative	1.2%

Source: Austin-Foust Associates, Inc. (2003).

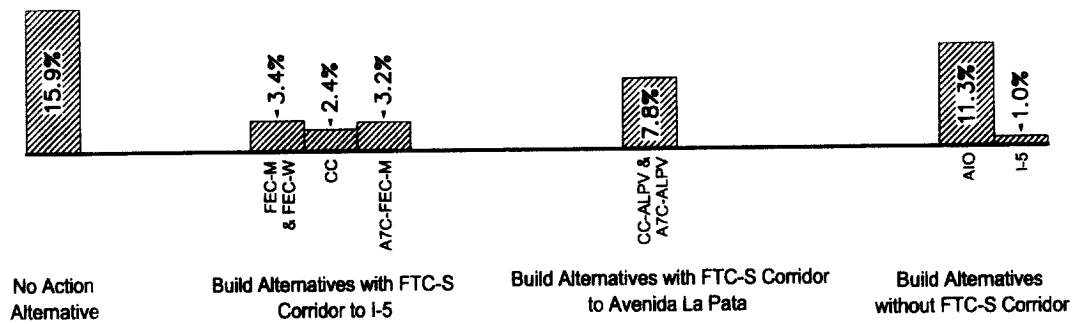
[a] The assumptions for each scenario are as follows:
Scenario 1: Committed circulation system with 14,000 du proposed RMV plan.
Scenario 2: Committed circulation system with 21,000 du OCP-2000 plan for RMV.
Scenario 3: Build out circulation system with 14,000 du proposed RMV plan.
Scenario 4: Build out circulation system with 21,000 du OCP-2000 plan for RMV.

[b] Expressed as percent of daily vehicle miles of travel (VMT) on I-5 in the study area that is forecast to occur under congested conditions.

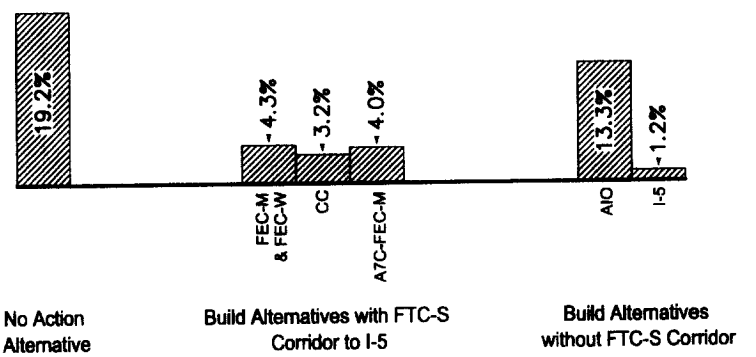
Note: The A7C-FEC-M-Initial Alternative, with refinements, was selected as the Preferred Alternative.



2025 Scenario 1



2025 Scenario 3



2025 Scenario 4

LEGEND

X.X% = Percent of daily vehicle miles of travel (VMT) on I-5 in the study area that is forecast to occur under congested conditions

Scenario 1: Committed circulation system with 14,000 DU proposed RMV plan.
Scenario 3: Buildout circulation system with 14,000 DU proposed RMV plan.
Scenario 4: Buildout circulation system with 21,000 DU OCP-2000 plan for RMV.

Summary of I-5 Congestion in the SOCTIIP Study Area

Source: Austin-Foust Associates, Inc. (2003)

SOCTIIP EIS/SEIR

Figure ES.6-10

176010Section3.0Fig3.4-14.dwg
November 25, 2003

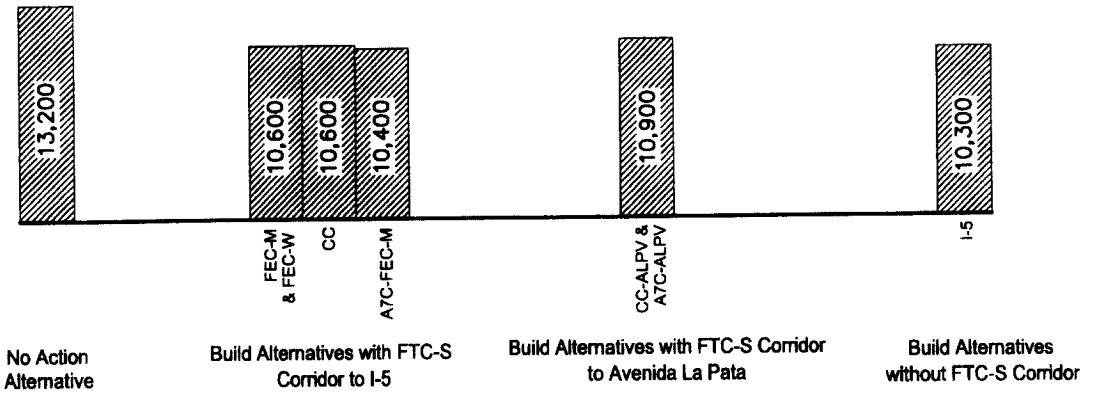
Table ES.6-5
Summary of Arterial System Congestion in the SOCTIIP Study Area

Alternatives and Scenarios[a]	Total Hours of Vehicle Delay on the Arterial System[b]
2025 SCENARIO 1	
No Action Alternative	13,200
Build Alternatives with FTC-S Toll Road from Oso Parkway to I-5	
FEC-M and FEC-W Alternatives	10,600
CC Alternative	10,600
A7C-FEC-M Alternative	10,400
Build Alternatives with FTC-S Toll Road from Oso Parkway to Avenida La Pata	
CC-ALPV and A7C-ALPV Alternatives	10,900
Build Alternatives without the FTC-S Toll Road	
I-5 Alternative	10,300
2025 SCENARIO 2	
No Action Alternative	17,300
2025 SCENARIO 3	
No Action Alternative	9,900
Build Alternatives with FTC-S Toll Road from Oso Parkway to I-5	
FEC-M and FEC-W Alternatives	7,700
CC Alternative	7,900
A7C-FEC-M Alternative	7,700
Build Alternatives with FTC-S Toll Road from Oso Parkway to Avenida La Pata	
CC-ALPV and A7C-ALPV Alternatives	8,200
Build Alternatives without the FTC-S Toll Road	
AIO Alternative	7,900
I-5 Alternative	8,300
2025 SCENARIO 4	
No Action Alternative	12,500
Build Alternatives with FTC-S Toll Road from Oso Parkway to I-5	
FEC-M and FEC-W Alternatives	9,500
CC Alternative	9,400
A7C-FEC-M Alternative	10,100
Build Alternatives without the FTC-S Toll Road	
AIO Alternative	9,700
I-5 Alternative	10,500

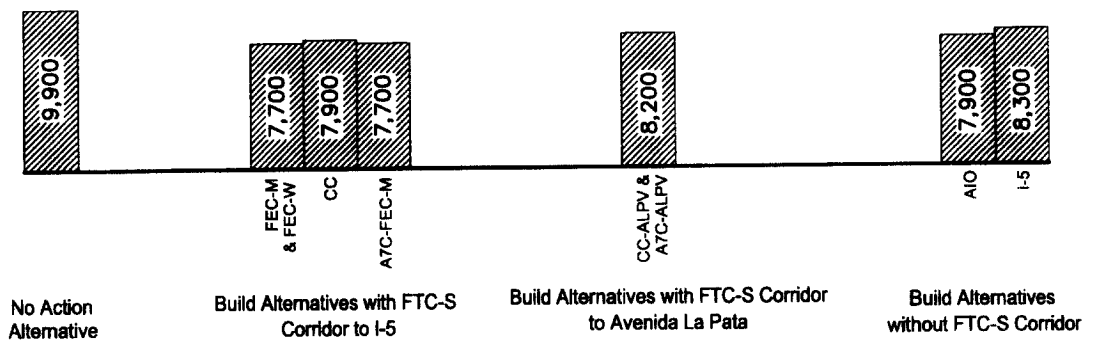
Source: Austin-Foust Associates, Inc. (2003).

[a] The assumptions for each scenario are as follows:
Scenario 1: Committed circulation system with 14,000 du proposed RMV plan.
Scenario 2: Committed circulation system with 21,000 du OCP-2000 plan for RMV.
Scenario 3: Build out circulation system with 14,000 du proposed RMV plan.
Scenario 4: Build out circulation system with 21,000 du OCP-2000 plan for RMV.

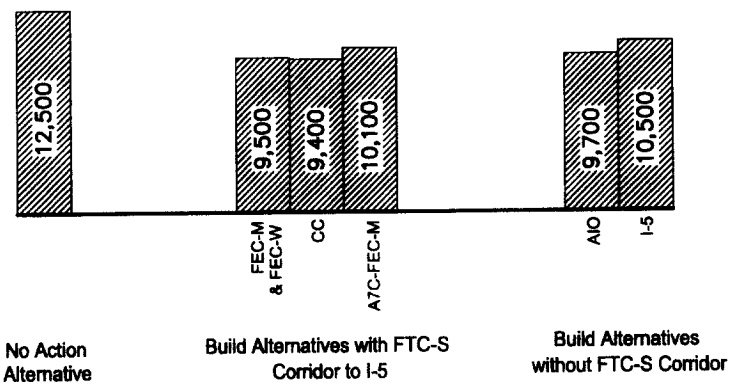
[b] Expressed as total hours of vehicle delay during the AM and PM peak at signalized arterial intersections in the study area.



2025 Scenario 1



2025 Scenario 3



2025 Scenario 4

LEGEND

X,XXX = Total hours of vehicle delay at signalized arterial intersections in the study area during the AM and PM peak hours

Scenario 1: Committed circulation system with 14,000 DU proposed RMV plan.
Scenario 3: Buildout circulation system with 14,000 DU proposed RMV plan.
Scenario 4: Buildout circulation system with 21,000 DU OCP-2000 plan for RMV.

Summary of Arterial System Congestion in the SOCTIIP Study Area

Source: Austin-Foust Associates, Inc. (2003)

SOCTIIP EIS/SEIR

Figure ES.6-11

176010Section3.0Fig3.4-15.dwg
November 25, 2003

Table ES.6-6
Summary of Build Alternative Point to Point Travel Time Savings

Alternative	Average Travel Times[b]					
	South Orange		North Orange		Non-North Orange[d]	
No Action Alternative[a]	28-38		57-81		121-233	
	Reduction in Peak Travel Times[c]					
	South Orange		North Orange		Non-North Orange[d]	
Alternative	Minute	Percent	Minute	Percent	Minute	Percent
Build Alternatives with FTC-S Toll Road from Oso Parkway to I-5 [a]						
FEC-M and FEC-W Alternatives	5-10	18%-26%	8-12	10%-16%	11-17	5%-13%
CC Alternative	3-7	11%-19%	5-10	6%-13%	7-11	3%-9%
A7C-FEC-M Alternative	5-10	18%-27%	8-12	10%-16%	11-15	5%-12%
Build Alternatives with FTC-S Toll Road from Oso Parkway to Avenida La Pata [a]						
CC-ALPV and A7C-ALPV Alternatives	2-4	5%-11%	2-6	2%-9%	3-7	2%-5%
Build Alternatives without the FTC-S Toll Road [a]						
AIO Alternative	1-3	4%-8%	1-4	1%-5%	2-5	1%-4%
I-5 Alternative	7-11	25%-32%	13-16	17%-25%	13-18	7%-14%

Source: Austin-Foust Associates, Inc. (2003).

[a] The travel time information summarized here is based on Scenario 3: Build out circulation system with 14,000 du proposed RMV plan.

[b] Expressed as the average 2025 point to point travel time in minutes during the AM and PM peak between I-5 at the Orange/San Diego County border and three geographic areas to the north. The travel times are listed in ranges because the travel times vary between AM and PM and also between smaller geographic areas within the three areas that are summarized here.

[c] Expressed as the reduction in terms of minutes and percentages compared to the No Action Alternative in 2025 point to point AM and PM peak travel times between I-5 at the Orange/San Diego County border and three geographic areas to the north. The travel time savings are listed in ranges because the travel times vary between AM and PM and also between smaller geographic areas within the three areas that are summarized here.

[d] Los Angeles, Riverside, San Bernardino and Ventura Counties.

Note: The A7C-FEC-M-Initial Alternative, with refinements, was selected as the Preferred Alternative.

Table ES.6-7
Summary of the Direct and Indirect Adverse Impacts of the SOCTIIP Build Alternatives for Operations

Locations Where Adverse Impacts Occur Compared to the No Action Alternative[b]	Jurisdiction	*Analysis Scenarios[a] in which Adverse Impacts Occur Under the Build Alternatives*					
		FEC-M & FEC-W	CC	A7C-FEC-M/ Preferred	CC-ALPV & A7C-ALPV	AIO	I-5
DIRECT ADVERSE IMPACTS							
Intersections							
Antonio Parkway & Crown Valley Parkway	County of Orange	None	None	None	None	3,4	3
Antonio Parkway-La Pata Avenue & Ortega Highway	County of Orange	None	None	None	None	4	1,3,4
Antonio Parkway & North River Road	County of Orange	None	None	None	None	3	None
Antonio Parkway & Oso Parkway	County of Orange	None	None	None	None	3,4	None
Avenida Empresa & Avenida De Las Banderas	Rancho Santa Margarita	None	None	None	None	3,4	None
Avenida Empresa & Santa Margarita Parkway	Rancho Santa Margarita	None	None	None	None	3,4	None
Avenida La Pata & Avenida Pico	San Clemente	None	None	None	1,3	3,4	None
Avenida La Pata & Avenida Vista Hermosa	San Clemente	None	None	None	1,3	3,4	None
Avenida Talega & Avenida Vista Hermosa	San Clemente	None	None	None	1	None	None
Avenida Vista Hermosa & Avenida Pico	San Clemente	None	None	None	1	None	None
Camino Capistrano & San Juan Creek Road	San Juan Capistrano	None	None	None	None	None	4
Camino Capistrano & Stonehill Drive	San Juan Capistrano	None	None	None	None	None	1
Camino Vera Cruz & Avenida Vista Hermosa	San Clemente	None	None	None	1	None	None
Felipe Road & Oso Parkway	Mission Viejo	None	None	None	None	3,4	4
I-5 northbound ramps & Avenida Pico	San Clemente	None	1,3,4	None	1,3	3,4	None
I-5 southbound ramps & Avenida Pico	San Clemente	None	None	None	1,3	3,4	None
I-5 northbound ramps & Crown Valley Parkway	Mission Viejo	None	None	None	None	None	4
I-5 northbound ramps & Oso Parkway	Mission Viejo	None	None	None	None	None	1
Los Altos & Crown Valley Parkway	Mission Viejo	None	None	None	None	None	4
Marguerite Parkway & Avery Parkway	Mission Viejo	None	None	None	None	None	4
Marguerite Parkway & Crown Valley Parkway	Mission Viejo	None	None	None	None	None	1
Marguerite Parkway & Jeronimo Road	Mission Viejo	None	None	None	None	4	None
Puerta Real & Crown Valley Parkway	Mission Viejo	None	None	None	None	None	4
Rancho Viejo Road & Ortega Highway	San Juan Capistrano	None	None	None	None	None	1
SR 241 northbound ramps & Antonio Parkway	Rancho Santa Margarita	None	None	None	None	3	None
SR 241 northbound ramps & Oso Parkway	Rancho Santa Margarita	None	None	None	None	3,4	None
SR 241 southbound ramps & Oso Parkway	Rancho Santa Margarita	None	None	None	None	4	None
Freeway (I-5) Mainline Segments							
None	--	--	--	--	--	--	--
Freeway/Tollway Ramps							
I-5 northbound off-ramp at Avenida Pico	Caltrans/San Clemente	None	None	None	1,3	None	None
I-5 northbound on-ramp at Avenida Pico	Caltrans/San Clemente	Indirect	1,3,4	Indirect	1,3	None	1
I-5 southbound off-ramp at Avenida Pico	Caltrans/San Clemente	None	1,3,4	None	None	None	None
I-5 southbound on-ramp at Avenida Pico	Caltrans/San Clemente	None	None	None	1,3	3,4	None
I-5 northbound direct on-ramp at Avd Vista Hermosa	Caltrans/San Clemente	None	None	None	None	None	1
I-5 southbound off-ramp at Avenida Vista Hermosa	Caltrans/San Clemente	None	None	None	None	None	1
I-5 northbound direct on-ramp at Crown Valley Parkway	Caltrans/Mission Viejo	None	None	None	None	3	1,3,4
I-5 southbound off-ramp at Crown Valley Parkway	Caltrans/Mission Viejo	None	None	None	None	3	3,4
I-5 northbound on-ramp at Ortega Highway	Caltrans/San Juan Capistrano	Indirect	Indirect	Indirect	Indirect	4	None
I-5 southbound off-ramp at Ortega Highway	Caltrans/San Juan Capistrano	Indirect	Indirect	Indirect	None	None	1,3,4
I-5 southbound off-ramp at Oso Parkway	Caltrans/Mission Viejo	None	None	None	None	3	None

Table ES.6-7 (continued)
Summary of the Direct and Indirect Adverse Impacts of the SOCTIIP Build Alternatives for Operations

Locations Where Adverse Impacts Occur Compared to the No Action Alternative[b]	Jurisdiction	*Analysis Scenarios[a] In Which Adverse Impacts Occur Under The Build Alternatives*					
		FEC-M & FEC-W	CC	A7C-FEC-M/ Preferred	CC-ALPV & A7C-ALPV	AIO	I-5
DIRECT ADVERSE IMPACTS (cont)							
Freeway/Tollway Ramps (cont)							
I-5 northbound on-ramp at Stonehill Drive	Caltrans/San Juan Capistrano	Indirect	Indirect	Indirect	Indirect	Indirect	1,3,4
SR 241 northbound on-ramp at Antonio Parkway	Caltrans/Rancho Santa Margarita	None	None	None	None	3	None
SR 241 southbound off-ramp at Antonio Parkway	Caltrans/Rancho Santa Margarita	None	None	None	None	3,4	None
SR 241 northbound on-ramp at Oso Parkway	Caltrans/Rancho Santa Margarita	None	None	None	None	3,4	None
SR 241 southbound off-ramp at Oso Parkway	Caltrans/Rancho Santa Margarita	None	None	None	None	4	None
INDIRECT ADVERSE IMPACTS							
Intersections							
I-5 northbound ramps & Ortega Highway	San Juan Capistrano	1	1	1	1	None	None
Freeway (I-5) Mainline Segments							
None	--	--	--	--	--	--	--
Freeway/Tollway Ramps							
I-5 northbound on-ramp at Avenida Pico	Caltrans/San Clemente	1,3,4	Direct	1,3,4	Direct	None	Direct
I-5 southbound off-ramp at Camino Capistrano	Caltrans/San Juan Capistrano	1,3,4	1,3,4	1,3,4	1,3	None	None
I-5 northbound on-ramp at Ortega Highway	Caltrans/San Juan Capistrano	1,3	1,3	1,3	1,3	Direct	None
I-5 southbound off-ramp at Ortega Highway	Caltrans/San Juan Capistrano	1	1	1	None	None	Direct
I-5 northbound on-ramp at Stonehill Drive	Caltrans/San Juan Capistrano	1,3,4	1,3,4	1,3,4	1,3	3,4	Direct

Source: Austin-Foust Associates, Inc. (2003).

[a] The assumptions for each scenario are as follows:
Scenario 1: Committed circulation system with 14,000 du proposed RMV plan.
Scenario 3: Build out circulation system with 14,000 du proposed RMV plan.
Scenario 4: Build out circulation system with 21,000 du OCP-2000 plan for RMV.

[b] Locations where both direct and indirect impacts occur, depending on the Build Alternative, appear in both the Direct Adverse Impact and Indirect Adverse Impact sections of the table. In such cases, the following entries are used to differentiate between direct and indirect impacts:
Indirect – Indirect adverse impact occurs at this location under the given Build Alternative. Refer to Section 3.0 in the EIS/SEIR for a more detailed discussion on the scenarios in which the impact occurs.
Direct – Direct adverse impact occurs at this location under the given Build Alternative. Refer to Section 3.0 in the EIS/SEIR for a more detailed discussion on the scenarios in which the impact occurs.

Note: The A7C-FEC-M-Initial Alternative, with refinements, was selected as the Preferred Alternative.

Table ES.6-8
Summary of Direct Adverse Long-Term Impacts, Mitigation Measures and CEQA Level of Significance after Mitigation for Traffic and Circulation

Direct Adverse Impact and Impacted Scenarios[a]	Mitigation Measure[b] and Traffic Share Percentages	CEQA Level of Significance After Mitigation
Far East Corridor-Modified Alternative		
None.	None.	Not applicable.
Far East Corridor-West Alternative		
None.	None.	Not applicable.
Central Corridor-Complete Alternative		
Long range peak hour LOS intersection deficiency: I-5 northbound ramps & Avenida Pico under Scenarios 1, 3 and 4.	No conventional intersection enhancements could be identified (traffic share = 19%).	Significant.
Long range peak hour LOS ramp deficiency: I-5 northbound on-ramp at Avd Pico under Scenarios 1, 3 and 4.	Widen to a two-lane on-ramp (traffic share = 58%).	Significant.
Long range peak hour LOS ramp deficiency: I-5 southbound off-ramp at Avd Pico under Scenarios 1, 3 and 4.	Add second auxiliary lane from I-5 to the off-ramp (traffic share = 58%).	Significant.
Central Corridor-Avenida La Pata Variation Alternative		
Long-range peak hour LOS intersection deficiency: Avd La Pata & Avd Pico under Scenarios 1 and 3.	Add second eastbound left-turn lane and convert second northbound through lane to shared second through/ second right-turn lane (traffic share = 16%).	Less than significant.
Long-range peak hour LOS intersection deficiency: Avd La Pata & Avd Vista Hermosa under Scenarios 1 and 3.	Add third eastbound through lane and second westbound left-turn lane (traffic share = 22%).	Less than significant.
Long-range peak hour LOS intersection deficiency: Avd Talega & Ave Vista Hermosa under Scenario 1.	Add third westbound through lane (traffic share = 37%).	Less than significant.
Long-range peak hour LOS intersection deficiency: Avd Vista Hermosa & Avd Pico under Scenario 1.	Add westbound right-turn lane and convert third eastbound through lane to third eastbound left-turn lane (traffic share = 31%).	Less than significant.
Long-range peak hour LOS intersection deficiency: Cm Vera Cruz & Avd Vista Hermosa under Scenario 1.	Add third eastbound and westbound through lanes and second southbound left-turn lane (traffic share = 10%).	Less than significant.
Long-range peak hour LOS intersection deficiency: I-5 northbound ramps & Avd Pico under Scenarios 1 and 3.	Add third eastbound through lane and second eastbound left-turn lane (traffic share = 17%).	Significant.

Table ES.6-8 (continued)
Summary of Direct Adverse Long-Term Impacts, Mitigation Measures and CEQA Level of Significance after Mitigation for Traffic and Circulation

Direct Adverse Impact and Impacted Scenarios[a]	Mitigation Measure[b] and Traffic Share Percentages	CEQA Level of Significance After Mitigation
Long-range peak hour LOS intersection deficiency: I-5 southbound ramps & Avd Pico under Scenarios 1 and 3.	Reconstruct intersection as part of ramp improvement listed below to provide separate southbound on-ramps from eastbound and westbound Avd Pico (traffic share = 21%).	Less than significant.
Long-range peak hour LOS ramp deficiency: I-5 northbound off-ramp at Avd Pico under Scenarios 1 and 3.	Add second drop lane from I-5 to the off-ramp (traffic share = 36%).	Less than significant.
Long-range peak hour LOS ramp deficiency: I-5 northbound on-ramp at Avd Pico under Scenarios 1 and 3.	Widen to a two-lane on-ramp (traffic share = 6%).	Less than significant.
Long-range peak hour LOS ramp deficiency: I-5 southbound on-ramp at Avd Pico under Scenarios 1 and 3.	Provide separate on-ramps from eastbound and westbound Avd Pico (traffic share = 35%).	Significant.
Alignment 7 Corridor-Far East Crossover-Modified (Preferred) Alternative		
None.	None.	Not applicable.
Alignment 7 Corridor-Avenida La Pata Variation Alternative		
Long-range peak hour LOS intersection deficiency: Avd La Pata & Avd Pico under Scenarios 1 and 3.	Add second eastbound left-turn lane and convert second northbound through lane to shared second through/second right-turn lane (traffic share = 16%).	Less than significant.
Long-range peak hour LOS intersection deficiency: Avd la Pata & Avd Vista Hermosa under Scenarios 1 and 3.	Add third eastbound through lane and second westbound left-turn lane (traffic share = 22%).	Less than significant.
Long-range peak hour LOS intersection deficiency: Avd Talega & Ave Vista Hermosa under Scenario 1.	Add third westbound through lane (traffic share = 37%).	Less than significant.
Long-range peak hour LOS intersection deficiency: Avd Vista Hermosa & Avd Pico under Scenario 1.	Add westbound right-turn lane and convert third eastbound through lane to third eastbound left-turn lane (traffic share = 31%).	Less than significant.
Long-range peak hour LOS intersection deficiency: Cm Vera Cruz & Avd Vista Hermosa under Scenario 1.	Add third eastbound and westbound through lanes and second southbound left-turn lane (traffic share = 10%).	Less than significant.
Long-range peak hour LOS intersection deficiency: I-5 northbound ramps & Avd Pico under Scenarios 1 and 3.	Add third eastbound through lane and second eastbound left-turn lane (traffic share = 17%).	Significant.

Table ES.6-8 (continued)
Summary of Direct Adverse Long-Term Impacts, Mitigation Measures and CEQA Level of Significance after Mitigation for Traffic and Circulation

Direct Adverse Impact and Impacted Scenarios[a]	Mitigation Measure[b] and Traffic Share Percentages	CEQA Level of Significance After Mitigation
Long-range peak hour LOS intersection deficiency: I-5 southbound ramps & Avd Pico under Scenarios 1 and 3.	Reconstruct intersection as part of ramp improvement listed below to provide separate southbound on-ramps from eastbound and westbound Avd Pico (traffic share = 21%).	Less than significant.
Long-rang peak hour LOS ramp deficiency: I-5 northbound off-ramp at Avd Pico under Scenarios 1 and 3.	Add second drop lane from I-5 to the off-ramp (traffic share = 36%).	Less than significant.
Long-range peak hour LOS ramp deficiency: I-5 northbound on-ramp at Avd Pico under Scenarios 1 and 3.	Widen to a two-lane on-ramp (traffic share = 6%).	Less than significant.
Long-range peak hour LOS ramp deficiency: I-5 southbound on-ramp at Avd Pico under Scenarios 1 and 3.	Provide separate on-ramps from eastbound and westbound Avd Pico (traffic share = 35%).	Significant.
Arterial Improvements Only Alternative		
Long range peak hour LOS intersection deficiency: Antonio Pkwy & Crown Valley Pkwy under Scenario 3.	Implement at-grade improvement plan: add third eastbound and northbound left-turn lanes and provide eastbound free right-turn lane (traffic share = 11%). Or implement grade separated improvement plan: signalized control of all intersection movements except northbound and southbound through traffic on Antonio Pkwy (traffic share = 11%).	Significant.
Long range peak hour LOS intersection deficiency: Antonio Pkwy & Crown Valley Pkwy under Scenario 4.	Implement at-grade improvement plan: add fourth eastbound and westbound through lanes and third northbound, southbound, eastbound and westbound left-turn lanes, and provide westbound free right-turn lane (traffic share = 11%). Or implement grade separated improvement plan: signalized control of all intersection movements except northbound and southbound through traffic on Antonio Pkwy (traffic share = 11%).	Significant.

Table ES.6-8 (continued)
Summary of Direct Adverse Long-Term Impacts, Mitigation Measures and CEQA Level of Significance after Mitigation for Traffic and Circulation

Direct Adverse Impact and Impacted Scenarios[a]	Mitigation Measure[b] and Traffic Share Percentages	CEQA Level of Significance After Mitigation
Long range peak hour LOS intersection deficiency: Antonio Pkwy-La Pata Ave & Ortega Hwy under Scenario 4.	Implement at-grade improvement plan: add third eastbound and westbound through lanes and third southbound and westbound left-turn lanes, and provide northbound, southbound and westbound free right-turn lanes (traffic share = 5%). Or implement grade separated improvement plan: signalized control of all intersection movements except northbound and southbound through traffic on Antonio Pkwy-La Pata Ave (traffic share = 5%).	Significant.
Long range peak hour LOS intersection deficiency: Antonio Pkwy & North River Rd under Scenario 3.	Add third southbound and westbound left-turn lanes (traffic share = 12%).	Less than significant.
Long range peak hour LOS intersection deficiency: Antonio Pkwy & Oso Pkwy under Scenarios 3 and 4.	Implement at-grade improvement plan: add fourth eastbound and westbound through lanes and third northbound, eastbound and westbound left-turn lanes, and provide northbound and westbound free right-turn lanes (traffic share = 16%). Or implement grade separated improvement plan: Signalized control of all intersection movements except northbound and southbound through traffic on Antonio Pkwy (traffic share = 16%).	Significant.
Long range peak hour LOS intersection deficiency: Avd Empresa & Avd De Las Banderas under Scenarios 3 and 4.	Add second eastbound left-turn lane (traffic share = 2%).	Less than significant.
Long range peak hour LOS intersection deficiency: Avd Empresa & Santa Margarita Pkwy under Scenarios 3 and 4.	Convert eastbound right-turn lane to a free right-turn lane and add northbound shared third left-turn lane/through lane (traffic share = 4%).	Less than significant.
Long range peak hour LOS intersection deficiency: Avd La Pata & Avd Pico under Scenarios 3 and 4.	Implement at-grade improvement plan: add third northbound through lane and second and third eastbound left-turn lanes, and provide westbound free right-turn lane (traffic share = 26%). Or implement grade separated improvement plan: signalized control of all intersection movements except eastbound and westbound through traffic on Avd Pico (traffic share = 26%).	Less than significant.
Long range peak hour LOS intersection deficiency: Avd La Pata & Avd Vista Hermosa under Scenarios 3 and 4.	Add fourth southbound through lane, second southbound, eastbound and westbound left-turn lanes, and westbound right-turn lane (traffic share = 16%).	Less than significant.

Table ES.6-8 (continued)
Summary of Direct Adverse Long-Term Impacts, Mitigation Measures and CEQA Level of Significance after Mitigation for Traffic and Circulation

Direct Adverse Impact and Impacted Scenarios[a]	Mitigation Measure[b] and Traffic Share Percentages	CEQA Level of Significance After Mitigation
Long range peak hour LOS intersection deficiency: Felipe Rd & Oso Pkwy under Scenarios 3 and 4.	Add fourth eastbound and westbound through lanes and second southbound left-turn lane, and convert second northbound through lane to shared second through/second right-turn lane (traffic share = 4%).	Less than significant.
Long range peak hour LOS intersection deficiency: I-5 northbound ramps & Avd Pico under Scenarios 3 and 4.	Add third eastbound through lane (traffic share = 8%).	Less than significant.
Long range peak hour LOS intersection deficiency: I-5 southbound ramps & Avd Pico under Scenarios 3 and 4.	Add second westbound left-turn lane (traffic share = 13%).	Less than significant.
Long range peak hour LOS intersection deficiency: Marguerite Pkwy & Jeronimo Rd under Scenario 4.	Add second northbound left-turn lane (traffic share = 6%).	Less than significant.
Long range peak hour LOS intersection deficiency: SR 241 northbound ramps & Antonio Pkwy under Scenario 3.	Convert third westbound through lane to shared third through/second right-turn lane (traffic share = 3%).	Less than significant.
Long range peak hour LOS intersection deficiency: SR 241 northbound ramps & Oso Pkwy under Scenarios 3 and 4.	Add third westbound through lane, second eastbound left-turn lane, and second eastbound right-turn lane (traffic share = 14%).	Significant.
Long range peak hour LOS intersection deficiency: SR 241 southbound ramps & Oso Pkwy under Scenario 4.	Add third eastbound through lane (traffic share = 17%).	Less than significant.
Long range peak hour LOS ramp deficiency: I-5 southbound on-ramp at Avd Pico under Scenarios 3 and 4.	Widen to a two-lane on-ramp (traffic share = 22%).	Less than significant.
Long range peak hour LOS ramp deficiency: I-5 northbound direct on-ramp at Crown Valley Pkwy under Scenario 3.	Widen to a two-lane on-ramp (traffic share = 6%).	Less than significant.
Long range peak hour LOS ramp deficiency: I-5 southbound off-ramp at Crown Valley Pkwy under Scenario 3.	Add second auxiliary lane from I-5 to the off-ramp (traffic share = 5%).	Significant.
Long range peak hour LOS ramp deficiency: I-5 northbound on-ramp at Ortega Hwy under Scenario 4.	Widen to a two-lane on-ramp or provide separate on-ramps from eastbound and westbound Ortega Hwy (traffic share = 5%).	Less than significant.

Table ES.6-8 (continued)
Summary of Direct Adverse Long-Term Impacts, Mitigation Measures and CEQA Level of Significance after Mitigation for Traffic and Circulation

Direct Adverse Impact and Impacted Scenarios[a]	Mitigation Measure[b] and Traffic Share Percentages	CEQA Level of Significance After Mitigation
Long range peak hour LOS ramp deficiency: I-5 southbound off-ramp at Oso Pkwy under Scenario 3.	Add second drop lane from I-5 to the off-ramp (traffic share = 2%).	Less than significant.
Long range peak hour LOS ramp deficiency: SR 241 northbound on-ramp at Antonio Pkwy under Scenario 3.	Widen ramp toll plaza to provide two cash (stopped) lanes and two FasTrak (unstopped) lanes (traffic share = 4%).	Less than significant.
Long range peak hour LOS ramp deficiency: SR 241 southbound off-ramp at Antonio Pkwy under Scenarios 3 and 4.	Widen ramp toll plaza to provide two cash (stopped) lanes and two FasTrak (unstopped) lanes (traffic share = 6%).	Less than significant.
Long range peak hour LOS ramp deficiency: SR 241 northbound on-ramp at Oso Pkwy under Scenarios 3 and 4.	Widen ramp toll plaza to provide two cash (stopped) lanes and two FasTrak (unstopped) lanes (traffic share = 18%).	Significant.
Long range peak hour LOS ramp deficiency: SR 241 southbound off-ramp at Oso Pkwy under Scenario 4.	Widen ramp toll plaza to provide two cash (stopped) lanes and two FasTrak (unstopped) lanes (traffic share = 21%).	Less than significant.
I-5 Widening Alternative		
Long range peak hour LOS intersection deficiency: Antonio Pkwy & Crown Valley Pkwy under Scenario 3.	Add fourth southbound through lane and third eastbound left-turn lane (traffic share = 2%).	Less than significant.
Long range peak hour LOS intersection deficiency: Antonio Pkwy-La Pata Ave & Ortega Hwy under Scenarios 1 and 3.	Provide southbound free right-turn lane (traffic share = 2%).	Less than significant.
Long range peak hour LOS intersection deficiency: Antonio Pkwy-La Pata Ave & Ortega Hwy under Scenario 4.	Convert second northbound through lane to shared second through/second right-turn lane (traffic share = 2%).	Significant.
Long range peak hour LOS intersection deficiency: Cm Capistrano & San Juan Creek Rd under Scenario 4.	Convert second northbound through lane to shared second through/second right-turn lane (traffic share = 10%).	Less than significant.
Long range peak hour LOS intersection deficiency: Cm Capistrano & Stonehill Dr under Scenario 1.	Add second eastbound through lane and northbound right-turn lane, and convert second southbound through lane to shared second through/second right-turn lane (traffic share = 8%).	Less than significant.

Table ES.6-8 (continued)
Summary of Direct Adverse Long-Term Impacts, Mitigation Measures and CEQA Level of Significance after Mitigation for Traffic and Circulation

Direct Adverse Impact and Impacted Scenarios[a]	Mitigation Measure[b] and Traffic Share Percentages	CEQA Level of Significance After Mitigation
Long range peak hour LOS intersection deficiency: Felipe Rd & Oso Pkwy under Scenario 4.	Add fourth eastbound through lane and second southbound left-turn lane, and convert second northbound through lane to shared second through/second right-turn lane (traffic share = 4%).	Less than significant.
Long range peak hour LOS intersection deficiency: I-5 northbound ramps & Crown Valley Pkwy under Scenario 4.	Add fourth eastbound through lane (traffic share = 8%).	Less than significant.
Long range peak hour LOS intersection deficiency: I-5 northbound ramps & Oso Pkwy under Scenario 1.	Add northbound shared second left-turn/second right-turn lane (traffic share = 4%).	Less than significant.
Long range peak hour LOS intersection deficiency: Los Altos & Crown Valley Pkwy under Scenario 4.	Modify southbound approach to provide a left-turn lane and a shared through/right-turn lane and eliminate north/south split phasing (traffic share = 5%).	Less than significant.
Long range peak hour LOS intersection deficiency: Marguerite Pkwy & Avery Pkwy under Scenario 4.	Add southbound right-turn lane (traffic share = 3%).	Less than significant.
Long range peak hour LOS intersection deficiency: Marguerite Pkwy & Crown Valley Pkwy under Scenario 1.	Add third northbound through lane and convert second southbound through lane to shared second through/second right-turn lane (traffic share = 2%).	Significant.
Long range peak hour LOS intersection deficiency: Puerta Real & Crown Valley Pkwy under Scenario 4.	Convert southbound through lane to shared through/second right-turn lane (traffic share = 3%).	Less than significant.
Long range peak hour LOS intersection deficiency: Rancho Viejo Rd & Ortega Hwy under Scenario 1.	Add third eastbound through lane (traffic share = 2%).	Less than significant.
Long range peak hour LOS ramp deficiency: I-5 northbound direct on-ramp at Avd Pico under Scenario 1.	Widen to a two-lane on-ramp (traffic share = 5%).	Less than significant.
Long range peak hour LOS ramp deficiency: I-5 northbound direct on-ramp at Avd Vista Hermosa under Scenario 1.	Widen to a two-lane on-ramp (traffic share = 4%).	Less than significant.
Long range peak hour LOS ramp deficiency: I-5 southbound off-ramp at Avd Vista Hermosa under Scenario 1.	Add second auxiliary lane from I-5 to the off-ramp (traffic share = 16%).	Less than significant.
Long range peak hour LOS ramp deficiency: I-5 northbound direct on-ramp at Crown Valley Pkwy under Scenarios 1, 3 and 4.	Widen to a two-lane on-ramp (traffic share = 9%).	Significant.

Table ES.6-8 (continued)
Summary of Direct Adverse Long-Term Impacts, Mitigation Measures and CEQA Level of Significance after Mitigation for Traffic and Circulation

Direct Adverse Impact and Impacted Scenarios[a]	Mitigation Measure[b] and Traffic Share Percentages	CEQA Level of Significance After Mitigation
Long range peak hour LOS ramp deficiency: I-5 southbound off-ramp at Crown Valley Pkwy under Scenarios 3 and 4.	Add second auxiliary lane from I-5 to the off-ramp (traffic share = 11%).	Significant.
Long range peak hour LOS ramp deficiency: I-5 southbound off-ramp at Ortega Hwy under Scenarios 1, 3 and 4.	Add second auxiliary lane from I-5 to the off-ramp (traffic share = 9%).	Less than significant.
Long range peak hour LOS ramp deficiency: I-5 northbound on-ramp at Stonehill Dr under Scenarios 1, 3 and 4.	Widen to a two-lane on-ramp (traffic share = 16%).	Significant.
No Action Alternatives		
Scenario 1: 11 deficient segments of I-5 (El Camino Real to Junipero Serra Road and Oso Parkway to El Toro Road) 17 deficient freeway/tollway ramps (13 I-5 ramps and four SR 241 ramps) 41 deficient intersections (27 arterial-to-arterial and 14 arterial-to-freeway/tollway ramps)	None.	Not applicable.
Scenario 3: 10 deficient segments of I-5 (El Camino Real to Junipero Serra Road and Oso Parkway to El Toro Road) 14 deficient freeway/tollway ramps (nine I-5 ramps and four SR 241 ramps) 27 deficient intersections (20 arterial-to-arterial and seven arterial-to-freeway/ tollway ramps)	None.	Not applicable.
Potential for Cumulative Traffic Impacts		
No I-5 mainline segments in the study area are adversely impacted by the SOCTIIP build Alternatives. For the build Alternatives that include the FTC-S from Oso Parkway to I-5, no direct adverse impacts occur in the Alternatives with a FTC-S connection to I-5 via the Far East Corridor alignment (the FEC-M, FEC-W and A7C-FEC-M Alternatives), and direct adverse impacts occur at the CC Alternative with an FTC-S connection to I-5 via the Central Corridor alignment (the CC Alternative). For the build Alternatives that include the FTC-S from Oso Parkway to Avenida La Pata (the CC-ALPV and A7C-ALPV Alternatives), direct adverse impacts occur at 10 locations. For the build Alternatives that do not include the FTC-S toll road, direct adverse impacts occur at 19 locations under the I-5 Alternative and 24 locations under the AIO Alternative		

Table ES.6-8 (continued)
Summary of Direct Adverse Long-Term Impacts, Mitigation Measures and CEQA Level of Significance after Mitigation for Traffic and Circulation

Source: Austin Foust Associates (2003).

[a] The assumptions for each scenario are as follows:
Scenario 1: Committed circulation system with 14,000 DU proposed RMV plan.
Scenario 3: Build out circulation system with 14,000 DU proposed RMV plan.
Scenario 4: Build out circulation system with 21,000 DU OCP-2000 plan for RMV.

[b] Refer to Section 3.6 (Long Range Mitigation Measures) for detailed discussion of project mitigation.

Table ES.6-9
Plant Community Impacts for the Initial Corridor, AIO and I-5 Alternatives

Community	FEC-M	FEC-W	CC	CC-ALPV	A7C-ALPV	A7C-FEC-M	AIO[2]	I-5[2]
Venturan-Diegan Coastal Sage Scrub (2.3)	426.00	409.66	192.79	177.34	189.69	379.44	74.43	21.35
	(172.40)	(165.79)	(78.02)	(71.77)	(76.77)	(153.56)	(30.12)	(8.64)
Other Scrub (2.1, 2.4, 2.7)	0.83	0.83	3.57	0.00	0.38	0.83	0.00	2.94
	(0.34)	(0.34)	(1.44)	0.00	(0.16)	(0.34)	0.00	(1.19)
Coastal Sage Scrub/ Grassland Ecotone (2.8)	19.52	15.64	36.73	30.40	14.77	8.45	23.45	0.00
	(7.90)	(6.33)	(14.86)	(12.30)	(5.98)	(3.42)	(9.49)	0.00
Chaparral/Sage Scrub Ecotone (3.1)	20.12	9.75	7.17	7.17	0.15	9.75	5.13	0.00
	(8.14)	(3.95)	(2.90)	(2.90)	(0.06)	(3.95)	(2.08)	0.00
Chaparral Communities (3.2, 3.3, 3.7, 3.12)	90.56	136.90	46.28	46.28	64.21	159.97	4.86	0.74
	(36.65)	(55.40)	(18.73)	(18.73)	(25.99)	(64.74)	(1.97)	(0.30)
Native Grassland (4.2, 4.3, 4.4)	88.96	33.46	9.93	9.93	5.65	23.53	0.36	0.00
	(36.00)	(13.54)	(4.02)	(4.02)	(2.29)	(9.52)	(0.14)	0.00
Annual Grassland (4.1)	218.13	186.68	496.04	285.40	274.01	166.05	342.27	0.00
	(88.28)	(75.55)	(200.75)	(115.50)	(110.89)	(67.20)	(138.52)	0.00
Ruderal Grassland (4.6)	42.80	33.06	15.57	5.77	2.04	27.52	27.22	49.25
	(17.32)	(13.38)	(6.30)	(2.34)	(0.82)	(11.14)	(11.02)	(19.93)
Vernal Pools, Seeps, and Wet Meadows (5.0)	2.05	1.86	7.86	7.86	2.70	0.09	0.19	0.14
	(0.83)	(0.75)	(3.18)	(3.18)	(1.09)	(0.04)	(0.08)	(0.06)
Marsh Communities (6.0)	5.01	4.60	8.95	7.80	6.95	4.17	0.00	0.44
	(2.03)	(1.86)	(3.62)	(3.15)	(2.81)	(1.69)	0.00	(0.18)
Riparian Herb and Mule Fat Scrub (7.1, 7.3)	2.76	5.54	13.54	10.77	3.27	0.62	5.88	3.50
	(1.12)	(2.24)	(5.48)	(4.36)	(1.32)	(0.25)	(2.38)	(1.42)
Other Riparian Communities (7.2, 7.4, 7.5, 7.6, 7.7, 7.8)	20.08	20.63	21.57	21.57	12.18	33.55	4.91	12.38
	(8.13)	(8.35)	(8.73)	(8.73)	(4.93)	(13.58)	(1.99)	(5.01)
Coast Live Oak Woodland (8.1)	25.21	94.91	23.74	23.74	30.29	119.79	0.50	0.05
	(10.20)	(38.41)	(9.61)	(9.61)	(12.26)	(48.48)	(0.20)	(0.02)
Blue Elderberry Woodland (8.4)	0.36	0.36	0.00	0.00	0.01	0.36	0.72	0.00
	(0.15)	(0.15)	0.00	0.00	(0.00)	(0.15)	(0.29)	0.00
Lakes, Reservoirs, & Basins (12.0)	1.59	1.30	0.31	0.31	0.00	0.00	0.00	0.00
	(0.64)	(0.53)	(0.13)	(0.13)	0.00	0.00	0.00	0.00
Water Courses (13.0)	5.60	1.25	18.89	17.43	2.55	1.70	1.51	9.48
	(2.27)	(0.51)	(7.64)	(7.05)	(1.03)	(0.69)	(0.61)	(3.84)
Cliff and Rock Communities (10.3)	5.13	5.36	2.58	2.58	0.00	3.86	0.00	0.00
	(2.08)	(2.17)	(1.04)	(1.04)	0.00	(1.56)	0.00	0.00
Agriculture (14.0)	120.52	147.89	121.69	121.70	240.37	176.54	9.36	2.62
	(48.77)	(59.85)	(49.25)	(49.25)	(97.28)	(71.45)	(3.79)	(1.06)
Developed, Disturbed, Graded (15.0, 16.0)	120.86	112.98	348.50	90.12	87.71	105.88	202.35	1,171.68
	(48.91)	(45.72)	(141.04)	(36.47)	(35.50)	(42.85)	(81.89)	(474.18)
Total	**1,216.09**	**1,222.67**	**1,375.71**	**866.16**	**936.93**	**1,222.11**	**703.14**	**1,274.56**
	(492.15)	**(494.81)**	**(556.75)**	**(350.54)**	**(379.18)**	**(494.59)**	**(284.56)**	**(515.82)**

[1] Data represent amount of plant community that will be impacted by each Alternative. Units of measure are acres (hectares).
[2] The data in Tables ES.6-9 and ES.6-10 are the same for the AIO and I-5 Alternatives and are provided for comparison.

Table ES.6-10
Plant Community Impacts for the Ultimate Corridor, AIO and I-5 Alternatives

Community	FEC-M	FEC-W	CC	CC-ALPV	A7C-ALPV	A7C-FEC-M	AIO[2]	I-5[2]
Venturan-Diegan Coastal Sage Scrub (2.3)	443.86	422.72	202.45	188.21	216.69	391.02	74.43	21.35
	(179.63)	(171.07)	(81.93)	(76.17)	(87.69)	(158.25)	(30.12)	(8.64)
Other Scrub (2.1, 2.4, 2.7)	0.83	0.83	3.57	0.00	0.38	0.83	0.00	2.94
	(0.34)	(0.34)	(1.45)	0.00	(0.16)	(0.34)	0.00	(1.19)
Coastal Sage Scrub/ Grassland Ecotone (2.8)	20.30	16.02	38.83	32.46	23.21	8.67	23.45	0.00
	(8.22)	(6.48)	(15.71)	(13.14)	(9.39)	(3.51)	(9.49)	0.00
Chaparral/Sage Scrub Ecotone (3.1)	20.40	9.88	8.13	8.13	0.18	9.88	5.13	0.00
	(8.26)	(4.00)	(3.29)	(3.29)	(0.07)	(4.00)	(2.08)	0.00
Chaparral Communities (3.2, 3.3, 3.7, 3.12)	96.72	141.89	48.50	48.50	69.15	158.93	4.86	0.74
	(39.14)	(57.42)	(19.63)	(19.63)	(27.99)	(64.32)	(1.97)	(0.30)
Native Grassland (4.2, 4.3, 4.4)	98.04	34.99	10.18	10.18	6.15	23.55	0.36	0.00
	(39.68)	(14.16)	(4.12)	(4.12)	(2.49)	(9.53)	(0.14)	0.00
Annual Grassland (4.1)	228.48	193.47	525.97	326.14	316.72	172.50	342.27	0.00
	(92.47)	(78.30)	(212.86)	(131.99)	(128.18)	(69.81)	(138.52)	0.00
Ruderal Grassland (4.6)	43.40	33.67	16.29	6.49	2.16	28.03	27.22	49.25
	(17.56)	(13.63)	(6.59)	(2.63)	(0.87)	(11.34)	(11.02)	(19.93)
Vernal Pools, Seeps, and Wet Meadows (5.0)	2.17	1.98	8.71	8.71	4.62	0.09	0.19	0.14
	(0.88)	(0.80)	(3.52)	(3.52)	(1.87)	(0.04)	(0.08)	(0.06)
Marsh Communities (6.0)	5.20	4.61	11.51	9.59	10.00	4.38	0.00	0.44
	(2.10)	(1.87)	(4.66)	(3.88)	(4.05)	(1.77)	0.00	(0.18)
Riparian Herb and Mule Fat Scrub (7.1, 7.3)	2.98	6.50	14.47	13.46	4.69	0.71	5.88	3.50
	(1.21)	(2.63)	(5.86)	(5.45)	(1.90)	(0.29)	(2.38)	(1.42)
Other Riparian Communities (7.2, 7.4, 7.5, 7.6, 7.7, 7.8)	21.87	21.45	23.16	23.16	14.67	33.91	4.91	12.38
	(8.85)	(8.68)	(9.37)	(9.37)	(5.94)	(13.72)	(1.99)	(5.01)
Coast Live Oak Woodland (8.1)	27.31	98.34	24.67	24.67	33.77	118.59	0.50	0.05
	(11.05)	(39.80)	(9.99)	(9.99)	(13.67)	(47.99)	(0.20)	(0.02)
Blue Elderberry Woodland (8.4)	0.37	0.37	0.01	0.01	0.00	0.37	0.72	0.00
	(0.15)	(0.15)	(0.00)	(0.00)	0.00	(0.15)	(0.29)	0.00
Lakes, Reservoirs, & Basins (12.0)	1.69	1.30	0.34	0.34	0.00	0.00	0.00	0.00
	(0.68)	(0.53)	(0.14)	(0.14)	0.00	0.00	0.00	0.00
Water Courses (13.0)	7.07	1.25	19.23	17.73	3.00	1.83	1.51	9.48
	(2.86)	(0.51)	(7.78)	(7.18)	(1.21)	(0.74)	(0.61)	(3.84)
Cliff and Rock Communities (10.3)	5.41	5.54	2.49	2.49	0.00	3.98	0.00	0.00
	(2.19)	(2.24)	(1.01)	(1.01)	0.00	(1.61)	0.00	0.00
Agriculture (14.0)	125.50	150.06	141.44	141.44	257.82	182.84	9.36	2.62
	(50.79)	(60.73)	(57.24)	(57.24)	(104.34)	(74.00)	(3.79)	(1.06)
Developed, Disturbed, Graded (15.0, 16.0)	122.73	115.42	354.20	105.22	116.75	107.47	202.35	1,171.68
	(49.67)	(46.71)	(143.34)	(42.58)	(47.25)	(43.49)	(81.89)	(474.18)
Total	**1,274.33**	**1,260.29**	**1,454.15**	**966.92**	**1,079.96**	**1,247.58**	**703.14**	**1,274.56**
	(515.72)	**(510.04)**	**(588.49)**	**(391.31)**	**(437.06)**	**(504.90)**	**(284.56)**	**(515.82)**

[1] Data represent amount of plant community that will be impacted by each Alternative. Units of measure are acres (hectares).
[2] The data in Tables ES.6-9 and ES.6-10 are the same for the AIO and I-5 Alternatives and are provided for comparison.
Note: The A7C-FEC-M-Initial Alternative, with refinements, was selected as the Preferred Alternative.

Table ES.6-11
Sensitive Plant Species Impacts by Alternative

Species	FEC-M (No. of Populations)	FEC-M (No. of Plants)	FEC-W (No. of Populations)	FEC-W (No. of Plants)	CC (No. of Populations)	CC (No. of Plants)	CC-ALPV (No. of Populations)	CC-ALPV (No. of Plants)	A7C-ALPV (No. of Populations)	A7C-ALPV (No. of Plants)	A7C-FEC-M (No. of Populations)	A7C-FEC-M (No. of Plants)	Populations	Count/Individuals	AIO (No. of Populations)	AIO (No. of Plants)	I-5 (No. of Populations)	I-5 (No. of Plants)
Coulter's saltbush (*Atriplex coulteri*)	2 2	9 9	1 1	6 6	12 16	483 1223	12 16	483 1223	1 1	6 6	-	-	1	6	-	-	-	-
Thread-leaved brodiaea (*Brodiaea filifolia*)	5 6	54 94	3 3	23 56	-	-	-	-	2 2	76 76	3 3	23 56	3	16	-	-	-	-
Catalina mariposa lily (*Calochortus catalinae*)	4 4	63 79	4 4	63 79	11 11	259 266	11 11	259 266	29 29	2501 2501	2 2	14 14	3	93	-	-	-	-
Intermediate mariposa lily (*Calochortus weedii* var. *intermedius*)	8 10	272 323	6 6	192 199	4 4	732 737	4 4	732 737	9 9	553 833	9 9	587 621	8	649	-	-	-	-
Southern tarplant (*Centromadia* [*Hemizonia*] *parryi* ssp. *australis*)	1 1	338 338	1 1	338 338	14 15	29887 37484	14 15	29887 37484	1 1	736 750	1 1	389 415	2	660	-	-	-	-
Many-stemmed dudleya (*Dudleya multicaulis*)	24 26	2724 2967	19 19	1659 1659	15 15	1122 1122	15 15	1122 1122	28 28	6055 6211	15 16	1196 1228	19	1,851	-	-	-	-
Beaked spikerush (*Eleocharis rostellata*)	-	-	-	-	1 1	1500 1500	1 1	1500 1500	-	-	-	-	1	n/a	-	-	-	-
Palmer's grapplinghook (*Harpagonella palmeri*)	6 6	1820 1820	3 3	102 102	-	-	-	-	17 17	19785 19785	1 1	42 42	1	42	-	-	-	-
California juniper (*Juniperus californica*)	-	-	-	-	1 1	1 1	1 1	1 1	2 2	2 2	1 1	1 1	2	11	-	-	-	-
Small-flowered microseris (*Microseris douglasii* var. *platycarpha*)	8 8	1702 1828	-	-	-	-	-	-	-	-	-	-	0	0	-	-	-	-
Salt spring checkerbloom (*Sidalcea neomexicana*)	-	-	-	-	-	-	-	-	1 1	940 1195	-	-	0	0	-	-	-	-
Total	**58** **63**	**6982** **7458**	**37** **37**	**2383** **2439**	**58** **63**	**33984** **42333**	**58** **63**	**33984** **42333**	**90** **90**	**30654** **31359**	**32** **33**	**2252** **2377**	-	-	-	-	-	-

Note: Impacts for the Initial corridor are located on top of each cell and for the Ultimate corridor are located on the bottom of each cell.
The number of populations and estimate of number of individuals of sensitive species located within the footprint. The numbers located in each cell should be used for comparing Alternatives. However, population numbers will change annually due to climatic changes. **Bold** represents sensitive plant species that are threatened or endangered.

Table ES.6-12
Bridges/Undercrossings for Wildlife Movement by Alternative[1]

	Bridges/Undercrossings	FEC-M[2]	FEC-W	CC	CC-ALPV	A7C-ALPV	A7C-FEC-M	AIO	I-5
1	Upper Cañada Chiquita[3]	X	X	--	--	--	--	--	--
2	Cañada Chiquita west[3]	--	--	X	X	--	--	--	--
3	Cañada Chiquita middle[3]	--	--	--	--	X	X	--	--
4	Cañada Chiquita east[3]	X	X	--	--	--	X	--	--
5	Cañada Gobernadora[4]	X	X	--	--	--	--	--	--
6	San Juan Creek west[5]	--	--	--	--	--	--	X	--
7	San Juan Creek middle[5]	--	--	--	--	X	X	--	--
8	San Juan Creek east[5]	X	X	--	--	--	--	--	--
9	Conservancy North	--	X	--	--	--	X	--	--
10	San Juan Creek/Cañada Chiquita[5]	--	--	X	X	--	--	--	--
11	Cristianitos Canyon[6]	X	--	--	--	--	--	--	--
12	Trampas Canyon[7]	--	--	--	--	--	X	--	--
13	Prima Deshecha Cañada west	--	--	X	X	--	--	X	--
14	Prima Deshecha Cañada east	--	--	--	--	X	--	--	--
15	Segunda Deshecha Cañada	--	--	--	--	X	--	--	--
16	Conservancy South	X	X	--	--	--	X	--	--
17	San Onofre State Beach	X	X	--	--	--	X	--	--
18	San Mateo Creek	X	X	--	--	--	X	--	--
19	San Onofre Creek[7]	X	X	--	--	--	X	--	--
20	Cristianitos Creek[7]	X	X	--	--	--	X	--	--
	Total by Alternative	**10**	**10**	**3**	**3**	**4**	**10**	**2**	**0**

[1] Bridges/undercrossings are proposed as future wildlife corridor locations. The numbers for each wildlife corridor correspond to numbers illustrated on Figure 4.11-6.
[2] The X represents a proposed bridge/undercrossing to facilitate movement through wildlife corridor.
[3] Total of four separate wildlife corridors along Cañada Chiquita.
[4] Total of two separate wildlife corridors along Cañada Gobernadora.
[5] Total of four corridors along San Juan Creek.
[6] Total of three separate wildlife corridors in Cristianitos Canyon.
[7] Total of two wildlife corridors along Cristianitos Creek.
Note: The A7C-FEC-M-Initial Alternative, with refinements, was selected as the Preferred Alternative.

Table ES.6-13
Sensitive Wildlife Impacts by Alternative

Species		FEC-M-I	FEC-M-U	FEC-W-I	FEC-W-U	CC-I	CC-U	CC-ALPV-I	CC-ALPV-U	A7C-ALPV-I	A7C-ALPV-U	A7C-FEC-M-I	A7C-FEC-M-U	AIO	I-5
FISH															
Arroyo chub[2]	*Gila orcutti*	x	x	x	x	x	x	x	x	x	x	x	x	x	
REPTILES/AMPHIBIANS															
Coastal rosy boa[3]	*Lichonura trivirgata rosefusca*	x	x	x	x					x	x				
Coastal western whiptail[3]	*Cnemidophorus tigris multiscutatus*	x	x	x	x	x	x	x	x	x	x	x	x		
Coast patch-nosed snake[3]	*Salvadora hexalepis virgultea*	x	x	x	x					x	x				
Coronado Island skink[3]	*Eumeces skilktonianus interparietalis*	x	x	x	x					x	x	x	x		
Orange-throated whiptail[3]	*Cnemidophorus hyperythrus beldingi*	x	x	x	x	x	x	x	x	x	x	x	x		
Red diamond rattlesnake[3]	*Crotalus exsul*	x	x	x	x	x	x	x	x	2	2	x	x		
San Bernardino ringneck snake[(3)]	*Diadophis punctatus*	x	x	x	x	x	x	x	x	x	x	x	x		
San Diego banded gecko[3]	*Coleonyx variegatus abbotti*	x	x	x	x					x	x				
San Diego horned lizard[3]	*Phrynosoma coronatum blainvillei*	x	x	x	x	x	x	x	x	2	2	x	x		
Silvery legless lizard[3]	*Aniella pulchra*	x	x	x	x										
Southwestern pond turtle[3]	*Clemmys marmorata pallida*	x	x	1	1										
Two-striped garter snake[3]	*Thamnophis hammondii*	x	x	1	1	x	x	x	x	x	x	x	x		
Western spadefoot toad[3]	*Scaphiopus hammondii*	x	x	x	x					x	2	x	x		
BIRDS[4]															
Common barn owl[5]	*Tyto alba*									1	1	1	1		
Cooper's hawk[5]	*Accipiter cooperi*	2	1	1	1							1	1		
Ferruginous hawk	*Buteo regalis*					1	1	1	1						
Grasshopper sparrow	*Ammodramus savannarum*	10	10	6	6	10	10	10	10	18	19	10	10	2	
Horned lark	*Eremiphila alpestris*									1	1	1	1		
Loggerhead shrike	*Lanius ludovicianus*					1	1							1	
Prairie falcon	*Falco mexicanus*	1	1	1	1										
Red-shouldered hawk[5]	*Buteo lineatus*	1	1	2	2	1	1	1	1						1
Red-tailed hawk[5]	*Buteo jamaicensis*	3	3	2	2	4	4	3	3	1	1	2	2	2	1
Rufous-crowned sparrow	*Aimophila ruficeps*	15	16	11	12	4	4	4	4	13	14	10	12	2	
San Diego cactus wren	*Campylorhynchus brunneicapillus couesi*	8	8	5	5	3	3	3	3	9	10	7	7		
Yellow-breasted chat	*Icteria virens*					2	2	2	2					1	
Yellow warbler	*Dendroica petechia*														
MAMMALS															
Pallid bat[3]	*Antrozous pallidus*					x	x	x	x						
Pocketed free-tailed bat[3]	*Nyctinomops femorosaccus*					x	x	x	x						
Western mastiff bat[3]	*Eumops perotis*	x	x	x	x	x	x	x	x	x	x				

[1] Data represents certain species or amount of species that will be impacted from each Alternative.
[2] Potential impacts to these fish species (marked with an "x") have been determined likely (but not quantified) if occupied drainages are crossed at any point by a project Alternative.
[3] These species' presence (marked with an "x") is determined likely (but not quantified) based on the habitats present and data collected from transect/pitfall studies.
[4] Impacts to bird species (other than raptors) are represented as the number of observed use areas affected.
[5] Refers to the presence of an active nest of the species.
I = Initial corridor.
U = Ultimate corridor.
Note: The Preferred Alternative is A7C-FEC-M-Initial with refinements.

Table ES.6-14
Summary of Direct Impacts to Threatened and Endangered Species

Species	FEC-M-I	FEC-M-U	FEC-W-I	FEC-W-U	CC-I	CC-U	CC-ALPV-I	CC-ALPV-U	A7C-ALPV-I	A7C-ALPV-U	A7C-FEC-M-I	A7C-FEC-M-U	AIO	I-5
Thread-leaved brodiaea[1] (*Brodiaea filifolia*)	5 54	6 94	3 23	3 56	-	-	-	-	2 76	2 76	3 23	3 56	-	-
Tidewater goby[2] (*Eucyclogobius newberryi*)	x	x	x	x	-	-	-	-	-	-	x	x	-	-
Southern steelhead trout[2] (*Onchorhynchus mykiss*)	x	x	x	x	-	-	-	-	-	-	x	x	-	-
Arroyo toad[3] (*Bufo californicus*)	1	2	1	2	-	-	-	-	-	-	1	2	-	1
Peregrine falcon[3] (*Falco peregrinus*)	-	-	-	-	1	1	1	1	-	-	-	-	-	-
Coastal California gnatcatcher[4] (*Polioptila californica californica*)	13	13	12	12	10	11	7	8	11	13	15	16	6	1
Least Bell's vireo[4] (*Vireo bellii pusillus*)	-	-	-	-	1	1	1	1	1	1	-	-	2	-

[1] Number of populations (top) and number of individuals (bottom), respectively.
[2] Potential impacts to these fish species (marked with an "x") have been determined likely (but not quantified) if occupied drainages are crossed at any point by a project alternative.
[3] Impacts are represented as the number of individuals affected.
[4] Impacts are represented as the number of observed use areas affected.
I: Initial
U: Ultimate
Note: In addition, the Preferred Alternative will not have direct impacts to Pacific Pocket Mouse or to San Diego and Riverside Fairy Shrimp.